

## BOOK REVIEWS

**Biochemical Spectroscopy:** by R. A. MORTON. 873 pp., Adam Hilger, London, 1975, 2 volumes. £80.

This is a masterwork covering the application of absorption and other spectroscopic techniques to a very wide range of biochemical problems. It represents the accumulated wisdom of a lifetime spent by the author in teaching and research at the University of Liverpool. Professor Alan Morton's own pioneering contributions to the use of absorption spectroscopy in the biochemical analysis of phenols, vitamins and quinones are well known. I well remember Prof. Morton describing at a Biochemical Society meeting in the late 1950's the discovery by his group of the first ubiquinone, characterised in the first instance simply as a lipid component peaking in the UV at 270nm. This is just one of very many examples of the important applications of UV measurements in characterising new components of biochemical systems which are described in detail in these two volumes.

Some may regard this treatment of spectroscopy as old fashioned because of its emphasis on absorption spectrophotometry (UV, visible and IR) rather than on NMR and MS techniques. However, I find this emphasis refreshing in these days when one so easily forgets the inestimable value of the absorption spectrophotometer because its use has become so commonplace. It is also an instrument which one has direct contact with—few biochemists measure their own NMR or MS spectra. Of course, the various spectral methods are complementary to each other in structural elucidation of new natural products and this is brought out by Prof. Morton, who

by no means fails to mention the value of MS and NMR measurements when these are appropriate.

After 3 introductory chapters, Volume I deals in turn with the spectral properties of carbonyl compounds, polyprenols, aromatic compounds, carotenoids, amino acids, proteins, enzymes, nucleic acids, porphyrins, cytochromes and steroids. Volume II continues the account with vitamins, coenzymes, quinones, antibiotics, flavonoids and alkaloids. Then there are a number of chapters covering special topics: photosynthesis, vision research, chemiluminescence, insect biochemistry and (for readers of this journal) there is even one on phytochemistry. Each chapter is copiously illustrated with spectral curves, chemical formulae and there are a multitude of tables giving key spectral data or listing correlations between spectral maxima and different structural substitutions. Full practical details are mentioned whenever these are required. The whole is enriched by Professor Morton's very clear and concise style of writing, enlivened by a real sense of history and a dry wit.

My only real criticism of this first class production is with the publishers, who have made one table of contents do for two volumes, which makes searching for chapters in the second volume rather tedious. The publishers might also be taken to task for pricing the two volumes beyond the pocket of the individual scientist. Hopefully, biochemistry departments will buy at least two copies: one for the library and a second copy to be placed within easy reach of the laboratory spectrophotometer; this is where it will be found most useful.

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**Biochemie der Pflanzen:** by HELMUT KINDL and GÜNTER WÖBER. Springer-Verlag, Berlin. 1975, 364 pp. 271 figs., DM 78, \$32.

Many biochemical reactions are similar in microorganisms, plants and animals. However, metabolism in these different kingdoms also has its specialities which textbooks of general biochemistry usually do not cover sufficiently. The book of Kindl-Wöber aims to close one of these gaps; it describes basic aspects of plant biochemistry (including secondary metabolism, even if this term is not used) and the biochemical organization and function of the plant cell. The book is meant to be complementary to that of Mohr (*Lehrbuch der Pflanzenphysiologie*) and thus omits problems of differentiation and development. The subjects discussed are: the plant cell and their compartments; the enzymes; information flow (repli-

cation, transcription, translation as well as their regulation); energy flow (synthesis, accumulation and use of chemical potential); heterotrophic nutrition (mobilization of carbohydrates, fats and proteins); photoautotrophic nutrition, synthetic capacities of organelles; synthetic reactions in the cytoplasm; and biological membranes and cell walls.

The book is clearly written and contains numerous informative graphs (the most important parts being indicated by different colours) and good diagrams. It is one of the most suitable text books on plant biochemistry in the German language and may be used by advanced students as well as by interested scientists who wish to bring their knowledge of plant biochemistry up-to-date.

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