Topics in Antibiotic Chemistry, Volume 2

Edited by P. Sammes
Ellis Horwood; Chichester, 1978
283 pages. £17.50

This book contains four distinct sections. Part A deals with antibiotics produced by marine organisms such as sponges, molluscs, worms, tunicates, coelenterates (what is a sea-pen?) and algae. Biologists might find the use of the word 'antibiotics' in this context somewhat misleading since it is used to describe any compound capable of inhibiting microbial growth under any conditions. Nevertheless, despite sharing with the author (Dr D. J. Faulkner) a mild disappointment that so few of these marine natural products have been subjected to any rigorous microbiological analysis of their growth-inhibitory properties, I found this section to be fascinating reading. In part B, Dr A. K. Ganguly presents a detailed account of the chemical methods used to establish the structures of oligosaccharide antibiotics, principally the everninomycins. This section was not written for me and I cannot be the judge of it, although as a biochemist I would have preferred to see structure–activity relationships given greater prominence.

The remainder of the book contains everything you always wanted to know about daunomycin and adriamycin. Firstly, Dr F. Arcamone discusses in detail the establishment of the structures of daunomycin and its relatives by chemical degradation and total synthesis. This is followed by physico–chemical studies of their binding to DNA and, interestingly also, to proteins such as tubulin. A discussion of structure–activity relationships within this group of compounds then leads neatly into the final section in which Dr Stephen Neidle deals lucidly with molecular models of the binding of daunomycin to DNA. The Pigram–Fuller–Hamilton model is analysed critically, and is beautifully illustrated, before we return once more to the theme of structure–activity relationships in considering the effects of modification of the chromophore and sugar moieties. Neidle's conclusion is well taken: 'It is apparent that daunomycin and adriamycin have been endowed by Nature – – with properties that have as yet been only rarely equalled, even in some respects, by human endeavour.' More strength to those who try!

Eric Cundliffe

Topics in Carbon-13 NMR Spectroscopy, Volume 3

Edited by George C. Levy
Wiley; Brisbane, Chichester, New York, Toronto, 1979
xii + 397 pages. £21.40

This series is intended 'to document current developments in ^{13}C NMR and bridge the gap between current research literature and available ^{13}C texts and reviews'. Volume 3, succeeds in this and it is a most useful book for those working with ^{13}C NMR. No chapter, more so perhaps than chapter 1 which is a multiauthored one on some of the recent advances in methods and of those techniques which will find greater application in the future – such as two-dimensional Fourier transfer ^{13}C NMR.

This chapter alone makes the book good value – but additional enjoyment is provided by the variety of topics in the remaining chapters. These include, applications of relaxation measurements, a fairly

comprehensive discussion of spectra of saturated heterocyclic compounds, and some applications of CIDNIP. There are two further chapters dealing with high resolution spectra of solid polymers and high power double resonance studies of fibrous proteins, proteoglycans and model membranes.

The enormous growth in the application of ^{13}C will continue if the improvements in the spectrometer foreseen by David Hoult of increasing sensitivity by cooling the receiving coil and preamplifier, prove successful. Cooling to liquid nitrogen temperatures should allow an improvement of the order of 3 in sensitivity (9-times less in the time taken to obtain a spectrum). Further cooling could produce even better results. These are exciting times in NMR. The editor George Levy, is to be congratulated on the high standard of writing and production in this excellent book.

R. A. Dwek

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Bach, J.-F. (ed) Immunology. Wiley; New York, 1978. xvi + 872 pp. $24.75. Reviewed in: Int. Arch. Allergy, 1979, 60, 471 by B. Albini.

Barber, J. (ed) Photosynthesis in relation to model systems. Topics in photosynthesis, vol. 3. Elsevier/North-Holland; Amsterdam, New York, 1979. xii + 434 pp. Dfl 180.00, $87.75. Reviewed in: FEBS Lett., Nov. 1979, 107, 444 by B. Halliwell.

Benedict, A. A. (ed) Avian immunology. Proc. Int. Conf., Hawaii, 1977. Plenum; New York, 1978. xvi + 408 pp. $39.50. Reviewed in: Int. Arch. Allergy, 1979, 60, 469 by P. Kallós.

Bonotto, S., Kefeli, V. and Puiseux-Dao, S. (eds) Developmental biology of acetabularia. Developments in cell biology, vol. 3. Elsevier/North-Holland; Amsterdam, New York, 1979. xxiv + 312 pp. Dfl 110.00, $53.75. Reviewed in: FEBS Lett., Nov. 1979, 107, 449 by S. Hawkins.

Box, H. C. Radiation effects: ESR and ENDOR analysis. Academic Press; London, New York, 1977. viii + 280 pp. £17.20, $26.50. Reviewed in: FEBS Lett., Nov. 1979, 107, 447 by E. D. Wills.

Brand, Theodor von. Biochemistry and physiology of endoparasites. Elsevier/North-Holland; Amsterdam, New York, 1979. 447 pp. Dfl 180.00, $87.75. Reviewed in: Nature, 1.11.79, 282, 114 by F. E. G. Cox.

Burns, R. G. (ed) Soil enzymes. Academic Press; London, 1978. 380 pp. £16.20. Reviewed in: Biochem. Soc. Trans., Oct. 1979, 7, 1171 by P. R. Darrah.

Catsimpoolas, N. (ed) Physical aspects of protein interactions. Developments in Biochemistry, vol. 3. Elsevier/North-Holland; Amsterdam, New York, 1978. viii + 308 pp. Dfl 101.00, $45.00. Reviewed in: FEBS Lett., Nov. 1979, 107, 442 by D. Kell.

Chard, T. (Series eds T. S. Work and E. Work). An introduction to radio-immunoassay and related techniques. Elsevier/North-Holland; Amsterdam, New York, 1978. 242 pp. $22.75. Reviewed in: Biochem. Soc. Trans. Oct. 1979, 7, 1172 by D. K. Watkins.

Ciba Foundation Symposium 60 (new series). Molecular interactions and activity in proteins. Excerpta Medica; Amsterdam, 1978. 279 pp. $28.50. Reviewed in: Biochem. Soc. Trans., 1979, 7, 1173 by P. Shaw.

Clarkson, B., Marks, P. A. and Till, J. E. (eds) Differentiation of normal and neoplastic hematopoietic cells. Cold Spring Harbor Conf. Cell Proliferation, vol. 5. Cold Spring Harbor Lab.; New York, 1978. 528 pp. (two book set) $80.00. Reviewed in: FEBS Lett., Nov. 1979, 107, 449 by J. Paul.

Diener, T. O. Viroids and viroid diseases. Wiley-Interscience; New York, 1979. xviii + 252 pp. $19.95. Reviewed in: Science, 7.9.79, 205, 992 by M. Zaitlin.

Filer, L. J., jr., Garattini, S., Kare, M. R., Reynolds, W. A. and Wurtman, R. J. (eds) Glutamic acid: Advances in biochemistry and physiology (Monographs of the Mario Negri Institute for Pharmacological Research). Raven; New York, 1979. 425 pp. $36.40. Reviewed in: J. Neurochem., Nov. 1979, 33, 1139 by P. J. Roberts.

Garrow, J. S. Energy balance and obesity in man (2nd edn) completely revised. Elsevier/North-Holland; Amsterdam, New York, 1978. xii + 243 pp. Dfl 123.00; $53.50. Reviewed in: Trends Biochem. Sci., Sep. 1979, 4, N229 by J. I. Davies.

Gehring, W. J. (ed) Genetic mosaics and cell differentiation. Results and problems in cell differentiation, vol. 9. Springer; Berlin, New York, 1978. xii + 316 pp. $39.00. Reviewed in: Science, 28.9.79, 205, 1370 by M. A. Russell.

Glasby, J. S. Encyclopaedia of antibiotics (2nd edn) Wiley; Brisbane, Chichester, New York, Toronto, 1979. 468 pp. £24.00. Reviewed in: FEBS Lett., Nov. 1979, 107, 451 by E. F. Gale and D. Vazquez.