Selective toxicity

By ADRIEN ALBERT. 1979, 6th ed. Andover, Hampshire: Chapman and Hall Ltd. Pp. xiii + 662 £15.00.

In this latest edition of his book, Professor Albert has updated and extended many of his ideas on selective toxicity. The subject matter covered is enormous and embraces a vast number of pharmacological problems far beyond the boundaries of microbiology.

In the first half of the book the history and principles of drug selectivity are discussed. This comprises an examination of the various biological and molecular levels at which a drug could be selective. Professor Albert discusses selectivity in three chapters, one concerned with differences in drug distribution and one each on comparative biochemistry and comparative cytology. The text is complemented by a large number of examples from all areas of selective toxicity and sometimes; perhaps, there are too many of them. There is also a whole chapter devoted to chemotherapy, a considerable portion of which is concerned with the history of the subject and includes a section on agrochemicals. The history of chemotherapy is made most interesting, but the subject itself is oversimplified especially in the section dealing with drug resistance.

A completely new chapter has been inserted into this edition. It deals with the correlation of the structure of drugs and their biological actions, taking note of recent developments in the understanding of drug receptor binding and including examples of slight chemical modification leading to considerable changes in biological potency.

In the second half of the book the principles of drug selectivity are expanded in a detailed account of the various chemical interactions that affect the selective nature of many drugs. One chapter is concerned with the interactions of metabolites and cellular enzymes and how drugs possessing chemical structures similar to the former compete with them to inhibit the enzymes. It includes a concise account of enzyme kinetics and competitive inhibition that is not obscured by detailed mathematical analysis. The main example used is the selective inhibition of the tetrahydrofolic acid biosynthetic pathway. In this half of the book there are also chapters on ionisation, covalent bonding, metal-binding substances, surface and stereochemistry and their relation to drug selectivity. Many examples are cited including a few involving antimicrobial drugs. However, most of the examples of drug-receptor interrelations are quite unrelated to microbiology which, to the casual reader, could allow a degree of lateral thinking but to the earnest student of antimicrobial chemotherapy must mean that most of the examples are irrelevant.

Previous editions of this book have become the *vade mecum* for many of those interested in the pharmaceutical sciences. There are many ideas that the microbiologist, interested in antimicrobial chemotherapy, may find useful. However, the book is biased towards those interested in chemistry and pharmacology.

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Nucleosides as biological probes

By R. B. SUHADOLNIK. 1979. Chichester: John Wiley and Sons. Pp. xv and 346. £23.00.

Twenty years ago the reviewer of this book spent some time in the Department of Pharmacology at Yale. That department was noted for its development of the nucleoside analogues azauridine and iododeoxyuridine; in Wisconsin, Charles Heidelberger was studying the metabolism and action of fluorouracil. With mercaptopurine, these were the main nucleoside analogues then available. On opening *Nucleosides as biological probes*, one's first reaction is amazement at how many more potentially useful nucleosides have since been characterised and investigated; over 70 are listed here. (One's second reaction is that one has opened the wrong book: "The hyperesthetic action of clitidine" sounds more like something out of a sophisticated sex manual). A further reaction is realisation of how much the subject has been advanced by Japanese workers, especially in regard to the constituents of various fungi; nutritionalists should take careful note of the marked hypocholesterolaemic action of erita-