

BOOK REVIEW

Problems and Wonders of CHIRAL MOLECULES

Edited by Miklos Simonyi

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The Editor is to be congratulated on bringing together a collection of papers by expert contributors to provide a wealth of information about chiral molecules and especially in relation to their behaviour in biological systems.

There are 23 papers by 42 listed contributors in the text which is divided into three main sections. These are Chemistry, Biochemistry (120 pages); Drugs, Medicinal Chemistry, Pharmacology (201 pages) and finally Industrial Aspects (62 pages). A short but adequate Subject Index also is included. The essential and invaluable role of isotopic labelling of molecules, especially with deuterium, tritium and carbon-14, in understanding the stereospecificity of biochemical and chemical reactions is immediately apparent from the first paper of the text by D W Young, and is continued throughout numerous papers following. The 8 papers of the first main section highlight the relationship between chirality and the action of enzymes, well illustrated for example in the papers by P Arányi concerning the mechanism of glucocorticoid hormone action and the role of the 11 β -hydroxyl group, and by J Rétey on the steric course and mechanism of enzymic reactions.

The largest section of the text relating to drugs, medicinal chemistry and pharmacology, highlight the importance for recognising that the pharmacological action of many drugs is related to their stereochemistry and how it fits in with the conformation of drug receptors. This aspect is perhaps not well understood and currently is not widely appreciated by the general medical practitioner prescribing the drugs. The 13 papers in this section provide quite fascinating reading of this important aspect of drug development and metabolism. This is clearly shown for example by J Knoll in the paper on the enantioselective pharmacological spectrum of *levo*-deprenyl a monoamine oxidase (MAO) inhibitor therapeutic drug free of the "cheese-effect" (hypertensive reaction when drugs and certain foodstuffs are administered simultaneously). Differences in the behaviour of enantiomers of antagonists and agonists are also discussed.

The industrial section, surprisingly, has only 2 papers and is to a large extent a continuation of the previous section since it covers additional aspects relating to the pharmaceutical industry. B G Main discusses the distinct and distinguishable properties of the enantiomorphs of the beta-adrenergic blockers widely prescribed in cases of hypertension. In the final paper R A Sheldon discusses chirality in conjunction with biological activity and the revolutionary advances made in the industrial syntheses of optically active compounds. As well as making major scientific contributions to the text, the Editor provides the "alpha" and "omega" of the text respectively by his lighthearted Foreword and Epilogue. The text is well produced and relatively inexpensive for the amount of information it contains. It is recommended not only as general reading material for chemists, biochemists and pharmacologists but also with the 706 references cited therein it makes a useful reference text especially for those involved in drug synthesis and metabolism studies.

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