Strategies for Organic Synthesis and Drug Design. By D. Lednicer. Wiley: 1997, 502 pp, hardback. £ 65. ISBN 0471196576.

"Strategies for Organic Synthesis and Drug Design" is a selection of highlights from the well-known series "The Organic Chemistry of Drug Synthesis". The purpose of the original series was to detail the preparation of all compounds submitted for clinical evaluation and granted non-propietary names. With time, this grew to 5 volumes and thus suffered both from dispersion and duplication of information. In this abridgement Dr. Lednicer, who also co-authored the original series, has chosen those compounds which, he feels, best demonstrate the diversity of modern organic synthesis. His updated selection covers a wide range of the chemistries leading to various classes of drug substance. The reader will find included most high-profile medications, both current and historical, which increases the utility of this book as a reference guide - although not as a comprehensive one, for example neither paracetamol nor thalidomide is featured.

The book's structure follows chemical classification: each chapter examines the use, formation and derivitization of a particular organic template with brief asides on reaction mechanisms where relevant. This decision works well. Most importantly, the book reads easily and progresses straightforwardly through its' categories. Unsurprisingly, there is a preponderance of aromatic and heteroaromatic chemistry but with considerable sections on prostaglandins (Chapter 1), steroids and estrogens (Chapter 4-6), beta-lactams (Chapter 14), and the opiod analgesics (Chapter 7).

The need for brevity has led to a reduced pharmacological presentation when compared to the original series. However there is still, for each class of pharmaceuticals, an introduction containing a detailed and usually fascinating account of their historical development with some indication of the pharmacology. Personally, I would prefer more consideration of the variety of approaches available for a given drug molecule – the development of alternative routes is featured only in a few critical cases, e.g. Corey's lactone and the anti-inflammatory ibuprofen.

Dr Lednicer has elected to refer to the original publications where possible – this leads to an impressive roll call of many of the greats of medicinal and organic synthesis – including Barton, Djerassi and Woodward. The time lag between compound discovery and clinical research means that most of the references in the text occur before 1990. Indeed, in one case a mention of "a recent modification" proves to date to 1978. Current issues within the pharmaceutical industry are remembered, with mention of the RU486 controversy and inclusion of most of the original HIV treatments.

The text layout is generally clear and well organised. There are some proofreading errors – with, in particular, occasional inaccurate cross-references to structures in the text. However, this should not deter from the enjoyment of reading this interesting book.

There is an impressive range of indices at the conclusion. Not only an extensive subject index – stretching from serendipity to criminal behaviour - but also a comprehensive reaction index and a cross index of compounds by indication, which will be of value to the novice medicinal chemist.

The earlier series was used as a basis for medicinal chemistry lecture courses and I can foresee this compendium finding a similar niche, both at undergraduate and postgraduate level. It should not be regarded, as Dr. Lednicer rightly points out in his introduction, as a typical medicinal chemistry source. Instead it is a review of organic chemistry, which focuses on that envied subset of compounds that combine biological activity, chemical accessibility and commercial viability. In this role I can recommend it as a source of stimulation and general interest for anyone working within the pharmaceutical industry.

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