

Bretsky also points out that the vicariance model of speciation implies that much speciation will be gradualist within one of the newly separated areas, so that preservation of ancestor-descendant lineages may not be so rare, and that the palaeontological record may in some cases be far more complete than is generally thought. In his commentary on the symposium on behalf of the traditionalists,

Boucot acknowledges that the cladists have made an important contribution to systematic taxonomic procedures in insisting on methodically constructed diagnoses; he also gives useful critiques of the other contributions.

There is inevitably some overlap in the various pro-cladistic expositions of the methods and merits of the technique of phylogenetic analysis by the evaluation of

the patterns of distribution of novel characters amongst the taxa. But the papers are on the whole stimulatingly written, with useful examples of the use of the different methods, and with a more balanced, less chauvinist attitude to the views of the opposition than had previously been common. □

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## Problems in carbon-13 NMR

Elizabeth A. Williams

*Carbon-13 NMR Based Organic Spectral Problems.* By Philip L. Fuchs and Charles B. Bunnell. Pp.316. (Wiley: New York and Chichester, UK, 1979.) Paperback \$14.97, £7.55.

THE use of carbon-13 NMR spectroscopy as a routine analytical tool for organic chemists is now widespread. This book originated with a perceived need to incorporate this technique into the teaching of modern organic structure determination using the problem solving approach. The text is intended to be used in conjunction with several suggested references which provide compilations of standard mass spectral, infrared, proton NMR and carbon NMR data. It does not contain any introduction to the various techniques and is intended for those already familiar with the basic principles involved.

The book contains 125 unknowns which are comprised of the more common functional groups as well as some more unusual structures. Each unknown is allotted two pages containing its elemental analysis, infrared, 90 MHz proton NMR, 20 MHz carbon NMR and mass spectrum. Special proton NMR experiments such as D<sub>2</sub>O addition or homonuclear spin decoupling and carbon-13 off-resonance decoupling experiments are included as inserts in the appropriate spectra. The unknowns are arranged on two facing pages so that all of the data for one compound may be examined without turning the page. The problems are arranged in order of increasing complexity of the molecular formula in a reasonably successful attempt to save the more difficult unknowns for later in the book. Isomeric structures are presented together to enable them to be worked on simultaneously. Immediately following the unknowns is an appendix containing a general approach to the solution of these problems followed by a detailed analysis of this approach as applied to ten selected problems of varying difficulty.

This book is a very useful text to incorporate into any course on organic spectroscopy. Although the authors state that it has evolved over a five-year period in a course taken by juniors, seniors and beginning graduate students, some of the problems are quite difficult and seem more appropriate for the latter two groups of students. Although concisely written, the discussion of the general protocol for solving organic spectral problems and the solutions to the ten selected problems are sufficiently detailed to take the student very clearly through the thought processes involved in deducing the structure from analytical data. Of particular note is the care taken by the authors to provide a feeling for which data are unambiguous and which data can be misleading. For example, they point out the dangers in assuming analytical "additivity" parameters are valid without the use of the appropriate model compounds. Similarly, they make note of alternative structures

where possible and suggest experiments to eliminate or confirm these.

Although the title of the book suggests that it is primarily concerned with carbon-13 NMR, in fact, equal attention is given to all of the techniques included in the problems. It is worthwhile remembering that the unknowns included in this text have already been "student tested" and found to be successful as a teaching aid. As a companion to one of the standard texts on organic spectroscopy this book is highly recommended. The answers are given to only ten of the problems which limits its value for independent study. If, however, the answers are obtained from the publisher, it would be very useful as a refresher to individuals already familiar with the analytical methods presented. □

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## Stimulating sex hormones

R.J.B. King

*Female Sex Steroids.* By J.H. Clark and E.J. Peck. Pp.245. (Springer: Berlin, Heidelberg and New York, 1979.) DM 78, \$43.70.

BOOKS can be categorized according to combinations of the four words useful, useless, boring, stimulating. The useful and stimulating category is all too small but this monograph decidedly falls into that group. It is the latest addition to a series that, with a few lapses, has maintained a high standard. The book is divided into 10 chapters dealing with the three aspects of oestrogen and progestogen receptors — namely methods of measurement (36 pages), intracellular characterization (99 pages) and physiological relevance (67 pages). The methodological section contains a series of recipes which, taken with the lucidity which graces the rest of the book, makes it eminently suitable for both

students and people wishing to initiate work in this area. On the other hand, the discussion of type I and II binding sites and the questioning of the basic dogma that steroids carry receptors from cytoplasm to nucleus make essential reading for *aficionados* of this area of endocrinology. It has been a feature of this series of monographs that the authors have communicated their own experiences within the given topic. The present volume continues this style with data, both published and unpublished, from their own laboratory blended with that of other workers. This is complemented by a catholic survey of the literature that makes the discussions and conclusions more formidable. I found this feature of the book particularly good because so many articles written about receptors for steroid hormones have taken a more parochial attitude. The main conclusions have been itemized at the end of the book. My own conclusion is that this is one of the best books yet written about the cellular endocrinology of the female sex hormones. □

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