

It was pleasing to see that the chapter by Naito and David (Laboratory Considerations: Determination of Cholesterol, Triglyceride, Phospholipid. . .) was placed first, the reason being, that, apart from the good scientific content, these authors have laid out the basis for GLP (Good Laboratory Practice) by carefully considering and describing all those important points required when designing and operating good methodology. It would have been preferable if section 3 had been classified as 'Quality Assurance' rather than 'Quality Control'. The latter necessarily assumes that the end data could be inconsistent, whereas the former sets controls for all parameters in the work such that the end data are consistent. Chapter 3 complements 1 in content and style and evaluates preparative methods for plasma lipoproteins.

Chapter 2 is written in fluent and authoritative style by A. Kuksis, a renowned expert in lipid structural analysis. However, section 2 covers the chromatographic analysis of fatty acids in 8 pages and does not do justice to the rest of this excellent chapter. This may not have been intentional, but,

considering the context of the book, perhaps this section should have been included in a separate chapter on chromatographic analysis of lipids, probably by the same author.

In studying the role/fate of dietary lipids it is important to understand and measure the extent and rate of intestinal lipid absorption. Methods for this are covered in detail in chapters 4 and 5. The final three chapters link to these and consider the background to, and methods for, the measurement of cholesterol synthesis and degradation (Jon A. Story), rate of fatty acid synthesis (J.P. Casazza and R.L. Veech) and heparin releasable triacylglycerol lipases (J. Corey Gibson et al.).

Considering the book as whole, if any major criticism was to be directed, it is that for a methodology book it is very detailed and necessarily assumes that the reader is well versed in his research area. It is not a book, which on its own, could cater for the new researcher in lipids.

Eugene W. Hammond

## *Carcinogenesis and Mutagenesis Testing*

Edited by J.F. Douglas

*Humana Press; Clifton, NJ, 1984*

xviii + 331 pages. £45.20

I had some reservations about this book when I read on the first page that "approximately 20 individual chemicals have been convincingly identified as (human) carcinogens." Unfortunately no details were given of the convincing twenty nor was the statement further qualified. Most people would probably go no further than state the epidemiological evidence that a small number of chemicals have caused cancer in humans exposed to high dose levels usually for long periods of time. Two pages later I was surprised to learn in the table that asbestos was negative in rodent bioassays for carcinogens. It is a well-recorded fact that mesotheliomas are produced in rats after inhalation of some types of asbestos. However, on reading further the book turned out to be really rather good.

The first of two sections deals with the principles behind short-term tests for carcinogens and mutagens and rodent bioassays for carcinogens. These principles are explained very clearly with good diagrams and figures. The difficult problem of the design and the evaluation of carcinogenesis bioassays is dealt with particularly well in two chapters. My one criticism of the first section of the book is that the important chapter on tissue genotoxic effects is far too brief and could well have been discussed in more detail. The second section deals with the practical side of the tests mentioning their limitations and their particular application.

Financially hard-hit universities and research institutes might think twice about paying £45.20 for a volume of just over 335 pages but it is written in

such a way that it will be particularly useful for the student in toxicology since, although superficial in some aspects, it deals concisely and clearly with a fundamental problem in toxicology, namely how do we identify human carcinogens? It will also be

a useful work for both the industrial toxicologist and government official with an interest in safety evaluation of chemicals.

T.A. Connors

## *Inflammatory Diseases and Copper*

Edited by J.R.J. Sorenson

*Humana Press, Clifton, NJ, 1984*

622 pages. £79.50

This book is a collection of short papers contributed by participants at a symposium on Inflammatory Diseases and Copper held in Arkansas, 1981. Rapid publication of over 50 presentations was achieved by the use of a 'camera-ready' format. The contents are listed under six main headings which include physiological and biochemical aspects of copper metabolism in normal and inflammatory states, the anti-inflammatory, anti-ulcer, antimicrobial and anticancer activities of copper complexes, therapy of rheumatic diseases and the possible mechanisms by which copper complexes act. Inevitably, as with all multi-author books, a uniform style of writing cannot be achieved. However, this difficulty has, in part, been overcome by restricting contributions to a concise and readable length.

Many interesting points, which cannot easily be found in the published literature, are quoted concerning copper and referenced in this book. It would appear that western diets may often be low in their copper content and that increasing our intake of liver, shellfish, mushrooms and nuts, which are high in copper, might change our copper levels. An important link between copper and normal iron metabolism was established by Frieden and his colleagues several years ago and reviewed by these authors at the symposium. However, this association does not appear to have been extensively explored by others at the symposium in spite of the marked abnormalities of iron metabolism characteristic of inflammatory diseases.

Zinc which, like copper, is viewed as a protective agent is given more attention than iron. Apart from a chapter on Wilson's disease and another dealing with copper-stimulated lipid peroxidation, copper salts and their complexes are seen mainly as beneficial. Indeed, considerable evidence from the Editor's laboratory supports the salutary effects of copper complexes in the treatment of inflammatory states. In addition, the copper-containing proteins, superoxide dismutase and caeruloplasmin, are known to play important antioxidant roles *in vivo*. It is easy to be critical in 1985, with hindsight, about work presented in 1981 particularly in the fast-moving field of oxygen radical research. Statements such as: "Several of the cellular copper proteins which have been isolated have been shown to possess superoxide anion radicals in actively metabolizing cells to  $O_2$  and  $H_2O_2$ ", will be confusing to most.

Interesting postulations about the possible causes of rheumatoid arthritis include: a mycoplasma infection which is influenced by copper complexes and a deficiency of an endogenous copper-containing stabilizer of immunoglobulin G. Probably the most intriguing piece of work presented was a scientific attempt to evaluate the copper bracelet in a controlled clinical trial. Its conclusions suggest that we should not be too ready to dismiss the claims of 'folk medicine'.

This is a well-edited collection of short symposium papers containing a wealth of information on copper and its changes in inflammatory states.