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 con-
tributed by participants at a symposium on Inflam-
matory Diseases and Copper held in Arkansas,
1981. Rapid publication of over 50 presentations
was achieved by the use of a ‘camera-ready’ for-
mat. The contents are listed under six main headings
which include physiological and biochemical
aspects of copper metabolism in normal and in-
flammatory 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 con-
cerning copper and referenced in this book. It
would appear that western diets may often be low
in their copper content and that increasing our in-
take of liver, shellfish, mushrooms and nuts,
which are high in copper, might change our copper
levels. An important link between copper and nor-
mal 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 extensive-
ly 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 inflam-
matory 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 hind-
sight, 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 O2 and H2O2”, will be con-
fusing to most.

Interesting postulations about the possible
causes of rheumatoid arthritis include: a myco-
plasma 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 sym-
posium papers containing a wealth of information
on copper and its changes in inflammatory states.
Its value is further enhanced by the inclusion of paper discussions at the end of each presentation. Unfortunately, its high price of £79.50 will severely limit its wider appreciation.

John M.C. Gutteridge

**Molecular Biology of Host-Parasite Interactions**

Edited by N. Agabian and H. Eisen

*Alan R. Liss; New York, 1984*

xiv + 351 pages. £60.00

This book is a collection of the papers presented at the first UCLA Symposium on Molecular Biology of Host-Parasite Interactions held in Park City, Utah, in January/February 1983. As such, it by no means covers comprehensively the topics defined by its title, is very heterogeneous in content and style and is well on the way to being 3 years out of date. Its particular merit is that the meeting was attended by representatives of most of the large groups active in this field so that it provides interesting insights into what was in their minds in early 1983.

There are 5 main parts to the book: (I) parasite genomes, which, perhaps inevitably, deals only with trypanosome kinetoplast DNA and variant surface antigens; (II) biochemistry, subdivided into studies of surface antigens and metabolism; (III) parasite killing, subdivided into non-immune and immune mechanisms; (IV) microbial (sic) pathogenesis; (V) problems in classification. Perhaps the most useful articles are the 4 workshop reports by Turner (molecular genetics of antigenic variations in African trypanosomes), Hudson and Holder (definition of relevant parasite antigens), Sherman (modification of host in response to parasitism) and Morel (problems and significance of parasite classification - molecular tools in classification and diagnosis).

More than half the articles have already been published in the Journal of Cellular Biochemistry. This means that the book has an unusual dual page-numbering system: one of J. Cell. Biochem. page numbers and one for this book! It also raises the question of whether it is worth paying £60 for the articles not already published.

W.E. Gutteridge
Characterizations of parasite diversity and interactions with hosts as well as the development of effective control methods are among the chief goals of parasitology. In an era in which microbes (archaea, bacteria, fungi, protozoans, and viruses) are known to play varied roles in host health, Koch’s postulates are notably under reconsideration in light of the effects of the microbiome and polymicrobial infections on disease (1, 2). Although researchers have historically focused on pathogenic aspects of microbes, it is now recognized that microbial communities within an organism.