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The work is divided into two parts, the first dealing with enzymes involved in glutamate-glutamine interconversion and the second discussing those enzymes that use the amide nitrogen of glutamine for biosynthetic purposes. The first section provides a comprehensive survey of both bacterial and mammalian glutamine synthetase including studies on the enzyme's regulation and its mechanism of action. The role of glutamine synthetase in the assimilation of ammonia in prokaryotic cells is discussed fully. Particular emphasis is placed on the role of glutamine synthetase and glutamate synthetase [glutamine (amide)-2-oxoglutarate amidotransferase oxidoreductase] in the synthesis of glutamate in nitrogen-limited cultures of bacteria. In this pathway the amide of glutamine is transferred to 2-oxoglutarate by the NADPH-requiring enzyme glutamate synthetase. All of the key enzymes using glutamine in nitrogen assimilation are discussed in the second part of the book. This section concentrates mostly on physicochemical studies on the structure and catalytic mechanism of the enzymes. A generalized mechanism for glutamine amidotransferases is suggested which visualizes glutamine as a carrier for ammonia to the active site of the enzyme involved in the amination reaction. For those enzymes such as glutamine phosphoribosyl pyrophosphate amidotransferase, carbamoyl phosphate synthetase and CTP synthetase, which play a key role in metabolic control, there is an extended discussion of their regulatory properties.

This book is essentially a collection of research papers and it resembles a scientific journal. Individual authors have tried to make their articles more readable by presenting introductory material which places the article in perspective. Although this is helpful, in a book on a narrow theme this tends to produce a rather repetitive quality. This could have been overcome by stricter editorial control or by the presentation of a single amplified introduction presenting an integrated view of the subject.

The emphasis of this volume makes it most suitable for graduate students and research workers, for whom it should serve as an excellent source of information and ideas. Because of the central role of glutamine in nitrogen assimilation, this book should be a useful addition to biochemistry libraries.

D. P. BLOXHAM

Fundamentals of Chemotherapy

W. P. PRATT

Oxford Medical Publications, Oxford, 1973, pp. 332, £3.0.0

The aim of the author in writing this book was clearly to remind everyone that, although there are many serious diseases caused by bacteria, there are many more, just as important in the world as a whole, caused by other organisms. Thus, unusually, the book attempts to cover, from a biochemical and pharmacological angle, not only antibacterial drugs but also those active against viruses, fungi, protozoal helminths and neoplasms. It fails for two main reasons. First it is currently fashionable and in many ways useful to group antibacterial drugs, as this book does, on the basis of their known mechanisms of action. However, the modes of action of many of the other drugs considered, especially those active against protozoa and helminths, are not understood in sufficient detail for this to be possible. Thus there is a lack of uniformity in approach in different parts of the book. Secondly, and more important, the author must have completed his main search of the literature in mid-1970, 2 years before he completed the manuscript, since there are fewer references in the book for that year than there are for 1969 and 1968 and there are hardly any for 1971 and 1972.

This long gestation period when coupled with the usual delays in the press, means that the book is already well out of date. Nowhere is this more obvious than in the section on malaria chemotherapy in Part II of the book. This section, curiously separated from a subsequent one on protozoal chemotherapy (which is equally curiously combined with one on helminth chemotherapy) just does not do justice to the flood of papers that have appeared in the literature since 1968 on the mode of action of antimalaria drugs. An apparent exception to this is discussion of the relatively recent development of therapy for malaria with combinations of pyrimethane and sulphonamides; yet in the antibacterial chemotherapy sections in Part I of the book no reference is made to the earlier development of trimethoprim-sulphonamide combinations, which are now so important in Gram-negative antibacterial chemotherapy.

That the author attempted an overview of chemotherapy is to his credit; that he has not succeeded is a pity since there is clearly the need for such a book. It is to be hoped that a second, up-to-date, edition can be produced quickly.

W. E. GUTTERIDGE

**Pathology of Tumours in Laboratory Animals, Volume 1, Part 1:
Tumours of the Rat (International Agency for Research on Cancer
Scientific Publications No. 5)**

V. S. TURUSOV (Editor)

World Health Organisation, Geneva, 1973, pp. 212, £6.00

This series on neoplasms of the rat, mouse and hamster, published by the International Agency for Research on Cancer, is intended primarily for the pathologist and other workers in the field of experimental oncology.

There is a paucity of authoritative illustrated texts on the morphology of tumours in laboratory rodents, and this series has been eagerly awaited by those concerned with tumours in laboratory animals. In this first part of *Tumours of the Rat* the quality of the eleven chapters is somewhat variable. Each chapter contains sections on normal structure, descriptions of the tumours, brief reviews of the occurrence of spontaneous tumours and the induction of tumours and finally a section on comparative aspects. Inevitably, because of the varied authorship, some questionable or challengeable statements on diagnostic criteria are evident, but these do not detract significantly from the general usefulness of the book. The quality of some of the half-tone illustrations could be improved but most are perfectly adequate for reference purposes.

Current concepts of the mechanisms of neoplastic transformation are outwith the scope of this book, but it should be included in the library of anyone concerned with oncogenesis in laboratory animals.

E. THORPE

**Monographs on the Evaluation of Carcinogenic Risk, Volumes 2 and 3:
International Agency for Research on Cancer**

*World Health Organisation, Geneva, 1973, pp. 271 and 181 respectively,
£2.25 and £1.50 respectively*

Cancer is an important and sinister subject in the spectrum of human health for three reasons:

1. It is the second commonest cause of death.
2. Its cause is only partially understood.
3. The cure rate is relatively low.

More and more it is becoming suspected that an increasing number of cancers are initiated by environmental influences. These two monographs are, therefore, both

Fundamentals of Antimicrobial Chemotherapy. Learning Objectives. Contrast bacteriostatic versus bactericidal antibacterial activities. Contrast broad-spectrum drugs versus narrow-spectrum drugs. Explain the significance of superinfections. Discuss the significance of dosage and the route of administration of a drug. Identify factors and variables that can influence the side effects of a drug. Describe the significance of positive and negative interactions between drugs. @article{Litter1961FundamentalsOC, title={Fundamentals of chemotherapy.}, author={Marta I. Litter}, journal={Archivos argentinos de fisiologia y neumonologia}, year={1961}, volume={37}, pages={75-86}}. Marta I. Litter. The book is well produced by photo-offset reproduction from typescript and contains a large number of figures, illustrations and diagrams. There is a comprehensive collection of references which is complete until 1972. Recent Advances. Fundamental Concepts and. Cancer Chemotherapy. <http://jcp.bmj.com/content/29/4/367.1.citation>. Updated information and services can be found at Twenty patients with acute myeloid leukaemia (AML) were treated with a combination of chemotherapy which included daunorubicin, cytosine arabino-side and 6-thioguanine (DAT). The complete remission rate was 85% and was achieved, in responsive cases, after an average of 2 courses of therapy.