Further Section

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Book Review


It has now been about ten years since the first reports of increased synthesis of spermidine in regenerating liver, and this decade has seen a remarkable proliferation of literature on the synthesis and function of polyamines. This volume, which consists of the proceedings of a symposium sponsored by the National Cancer Institute, brings together a great deal of diverse information on this subject. It is edited by Dr. Diane Russell, who has been a leader in focusing attention on the role of polyamines in neoplasia; and, appropriately, 8 of the 33 contributions are from her and her associates. In addition to a number of sections relating directly to neoplasia, the volumes includes studies in bacteria, viruses, marine invertebrates, amphibians, and Drosophila larvae. Two of the sections are concerned with analytical methods for polyamines. The volume has both the virtues and the faults inherent in a ‘proceedings’ publication. Although several sections are reviews of a particular aspect of polyamines, most of the sections are detailed research reports with typical organization into ‘methods, results, and discussion’.

Inevitably, in a volume of this sort there is considerable duplication in introductory material and references and unevenness in style and presentation. It is not, therefore, the kind of a volume that one will read from cover to cover to acquire an overall view of a field. Nevertheless, although the appeal of this volume will be primarily to those already active in research on polyamines, there is considerable material that will be of interest to one not specializing in this area. The oncologist with biochemical interests will appreciate the sections dealing with polyamine metabolism in tumors and with the possibility of relating changes of urinary polyamines to the presence of tumors. The general biochemist will be interested in several sections on the biosynthesis of polyamines and particularly in those dealing with the role of polyamines in the methylation of tRNA. As for the readers of this journal (i.e. for the chemotherapists), there is not much in the volume of a specific nature; the pertinent sections are two concerned with methylglyoxal bis (guanylhydrazone), an antitumor agent that is a potent inhibitor of S-adenosylmethionine decarboxylase and hence of polyamine synthesis, and another concerned with the α-hydrazino analog of ornithine, an inhibitor of ornithine decarboxylase. In addition, however, there is in the volume much to indicate polyamine metabolism as a potential area for chemotherapeutic exploitation. If the polyamines are (as now appears to be certain) critical for cell growth, it will be surprising if in the next few years important agents are not discovered that act in this area.

Within the limitations that a collection of symposium papers imposes, there is very little in this volume with which to find fault. A minor point of concern is noted in the section beginning on p. 307, which deals with the effect of ‘α-hydrazino ornithine’. The structure of this compound is not given; one assumes, however, that the authors do not mean α-hydrazinoornithine, but rather the α-hydrazino analog of ornithine, or more precisely, α-hydrazino-L-aminovaleric acid. A second point relates to the final section of the volume. The reader will likely wonder about the reason for inclusion of this section, an able account of the molecular biology of tumor viruses, but one that
makes no mention of polyamines; its only relevance to the present volume is the known involvement of polyamines in RNA metabolism.

The volume is printed on high quality paper, is well bound, and is relatively free of errors. As a final comment, however, this reviewer would question the desirability of the now common practice of publishing the proceedings of symposia in expensive hardback editions. In any rapidly developing field, any such volume is obsolete within a few years, and publication in a relatively inexpensive paperback edition would appear to be ade-

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