

BOOK REVIEWS

Advances in Cyclic Nucleotide Research, Volume 4, Paul Greengard, Ph.D. and G. Alan Robison, Ph.D., (eds.). Raven Press, New York, 1974. (488 pp, \$28.50)

During the past decade cyclic AMP has been recognized as a second messenger of various hormones in their respective target organs. The biologic and clinical significance of cyclic AMP has been enhanced as we have become increasingly aware of its diverse action, including secretion, differentiation, macromolecular synthesis, membrane transport, muscle contraction, cell aggregation, locomotion, etc. In nine chapters this volume includes reviews of recent studies on the various roles played by the cyclic nucleotides, cyclic AMP and cyclic GMP. Except for the last chapter on cyclic AMP in plants, the other eight chapters are, in part, related to basic skin research.

The first chapter, "Cyclic AMP and the Immune Response," by Parker et al, summarizes about 350 references into 63 pages. The abundant literature, nearly all of which has been published during the last five years, suggests that the cyclic nucleotides work both ways in the immune system, i.e., cyclic AMP is stimulatory for lymphocyte transformation and B cell proliferation but inhibitory for cellular proliferation and cytolysis. As the authors state: "Despite the indirect nature of much of the experiments and the difficulties in interpreting apparent inconsistencies in data, the overriding impression is that the cyclic nucleotides perform vital control functions at virtually every level in the immune response."

In the second chapter, the role of cyclic nucleotides in cancer is reviewed by Ryan and Heidrick in about 30 pages with 200 references. In vitro (tissue culture) studies indicate that an increase in cyclic AMP level inhibits cell division. However, this inhibitory action is still not clear in an in vivo (animal) system. Rapidly growing tumors in animals do not have lower levels of cyclic AMP, but rather have high, sometimes very high, levels. The scarcity of in vivo data is reflected in the barely three pages that are sufficient to review them. The authors are quite correct in recognizing the present state as "embryonic" and in posing an important future problem to explain the difference between the in vivo and in vitro results.

The third chapter by Voorhees and his associates reviews cyclic nucleotide metabolism in normal and proliferating epidermis in about 35 pages with 200 references. The first half of the review describes the basic nature of the epidermal adenylyl (or

guanylyl) cyclase system and the second half the cyclic nucleotides and psoriasis. The first half is well written and details the recent progress as related to skin in easy-to-understand prose. The second half deals mainly with "defective adenylyl cyclase-cyclic AMP cascade in psoriasis," the hypothesis set forth by Voorhees et al in 1971. Readers may be convinced that the molecular nature of this disease is now understood, but a word of caution should be injected. Here, as in the cancer studies, the in vitro finding of mitotic inhibition by the accumulation of cyclic AMP does not always hold true in an in vivo system.

In addition to the three chapters closely related to basic dermatologic research, there are two chapters on cyclic AMP and muscle systems, two chapters on cyclic AMP control of basic metabolism (glycogen and protein), and on hormone-receptor (adenylyl cyclase) interaction. As far as skin is concerned, practically no data are included in these reviews; this fact suggests that at least 5 years must elapse before any real progress can be reported.

With few exceptions, all reviews are generally well written and easy to understand. A dermatologist who is not an expert in the specific field but who has a limited biochemical knowledge probably can read these reviews with profit, although he may have trouble with some of the topics such as kinetics. Readers will be astonished by the wealth of information that has become available in the past five years, but at the same time, they will often be puzzled and confused by the contradictory results on the same subject. This does not detract from the value of this book which though already a year old is a rich source of new information. Not all of the concepts and hypotheses are necessarily true, and the reader is cautioned not to accept everything he finds in the review without going back to the original articles for his own critical reading. In general, the volume is an excellent reference book for the investigative dermatologist.

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Urticaria, Robert P. Warin, M.D., and Robert H. Champion, M.A., M.B., F.R.C.P. **Volume I in the Series, Major Problems in Dermatology**, Arthur Rook, M.D., F.R.C.P., Consulting Editor. W. B. Saunders Company, Philadelphia, 1974. (173 pp, \$13.50)

This is the first in a series entitled *Major Problems in Dermatology*. This volume deals with

the general problems of urticaria. Warin and Champion cover the historical background, types and incidence of urticaria, basic mechanisms, acute and chronic urticaria (etiology, clinical features, and treatment), hereditary angioedema, physical urticarias, and contact urticaria. The clinical features of urticaria, the variety of urticarial reactions, and the differential diagnosis of urticarial reactions are very well covered. The literature on the clinical aspects of urticaria has seemingly been exhaustively covered with regard to etiology and clinical manifestations.

The pathophysiologic aspects of urticaria are dealt with in a brief way because of the intended

scope of the book. However, the relevant references seem to be up to date and adequate.

The interested reader should be able to develop a deeper understanding about the advances in knowledge concerning the mediators of inflammation and vascular permeability by following through on the bibliography. For the clinical dermatologist the volume is a good review and will direct his attention toward future developments in this area as they relate to the complement system, kinins, and related mediators.

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