

to discern any logical sequence of papers except where a group of papers deals with one antibiotic.

Undoubtedly the most interesting papers in either of these two volumes are those dealing with the new synthetic penicillins. Hints are given of new penicillins to come and it is to be hoped that the next volume will give some interesting information about further developments in this field.

R. KNOX

BIOCHEMICAL RESPONSE TO INJURY

The Biochemical Response to Injury

Edited by H. B. Stoner, with the assistance of C. J. Threlfall. (A Symposium organized by the Council for International Organizations of Medical Sciences, established under the joint auspices of Unesco and WHO.) Pp. xi+467. (Oxford: Blackwell Scientific Publications; Springfield, Ill.: Charles C. Thomas, 1960.) 57s. 6d.

THE proceedings of this symposium will be of interest to others besides those concerned practically with the effects of injury and the indefinable syndrome of shock. The book contains seventeen papers which between them consider the effects, measured in a variety of ways, of almost all forms of trauma except irradiation. Each paper gives a comprehensive account of the research of the particular author and of related work by others, so that, with a bibliography of a thousand references with titles and an adequate index, the book is most informative on the tenor and outcome of work over the past decade. Its value is enhanced by a well-edited report of the discussions including a thoughtful account of the strategy, tactics and integration of future work which may be particularly recommended to those who contemplate such work.

Though primarily there may be a specific biochemical lesion, and consequently many inter-related changes at a biochemical level, the response of the animal to injury is a complicated physiological affair in which the nature and extent of biochemical effects is dependent on the constitution of the animal. It is therefore extremely difficult to gauge the significance of any particular biochemical change, and the participants in the symposium were agreed that few general conclusions can yet be drawn. The effect of injury on the vascular system is the core of the problem, but though from time to time a particular substance affecting capillary permeability has been incriminated, it is clear that no single mediator can sustain the role of prime villain in the development of shock. Moreover, the divergence of response to similar injuries in different species complicates the assessment of the general validity of conclusions drawn from certain animal experiments, for example, the importance of the absorption of bacterial endotoxins from the gut in haemorrhagic shock.

The human response to injury, however, seems to be dominated by an effect on renal function which is rarely apparent in experimental animals, and many of the chapters are of particular interest and importance to clinicians. These include accounts of the disturbance in protein metabolism (Cuthbertson), in water retention and electrolyte loss (Wynn) and in the pituitary-adrenocortical system (Pekkarinen) after surgical trauma or physical injury, the clinical trial of saline therapy (Rosenthal), rouleaux formation

(Fåhræus), and the effect of limb ischaemia on adrenal secretion and body temperature (Stonor and Threlfall).

Other chapters in which the lesions in structure or function produced by specific substances are explored, offer a stimulating challenge to the experimental pathologist, the cytologist and the biochemist; they include the effects of histamine and other endogenous substances (Miles and Wilhelm) and of bacterial toxins (Smith) on vascular permeability, and the early effects of toxic chemicals on mitochondrial structure and function (Fonnesu). The interpretation of these phenomena is still too often handicapped by our ignorance of the physico-chemical nature and interplay of the cell structures involved in the injury, and it is to be hoped that the problems poised in this book will promote further attack in this fundamental field.

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PHYSIOLOGICAL CARCINOLOGY

The Physiology of Crustacea

Edited by Talbot H. Waterman. Vol. 1: Metabolism and Growth. Pp. xvii+670. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1960.) 22 dollars.

THIS is the first of two volumes which are intended to give a general survey of our present knowledge of the physiology of Crustacea. There are seventeen chapters, the first of which is an introduction to crustacean biology. This chapter seems to have suffered from over-compression, and contains some curious suggestions regarding the evolutionary relationships of the various crustacean sub-groups. For example, it is suggested that the Ostracoda and Conchostraca have a common origin, without giving any reasons. This is a difficult suggestion for anyone familiar with the two groups to accept, or to understand why it should be made. To offer it, unsupported, to the physiologist looking for an introductory account of the probable evolutionary relationships of crustaceans can only be misleading.

The remaining sixteen chapters deal with a variety of topics, ranging from respiration, circulation and heart function to autotomy and regeneration. These chapters are all written by separate authors, and the book reflects the advantages and disadvantages of such a system. The great advantage is that one gets a variety of outlooks, and each chapter is written by an expert who has contributed original work to the particular field. Most of the chapters not only present useful summaries, but also make suggestions as to where there is need for further work, and where new advances might be expected to be made. The main disadvantage lies in the lack of the rounded overall view that one gets from a single author; but the time has passed when one person could be expected to be equally well informed on the variety of topics covered in this book.

The problems of nomenclature and synonymy have been dealt with very sensibly by providing a systematic index which includes synonyms. This allows the consistent use of one name throughout the text while retaining the possibility of referring back to original accounts which used an older name. As a further aid, particularly to the more advanced worker, each chapter is followed by about a hundred (some by more than two hundred) references, so that apart from