tabolites between parasite and host tissues, or may inactivate parasite enzyme systems.

Two major features of the vertebrate immune response are apparently undeveloped in invertebrates, namely, specificity, the complementarity between an antibody-combining site and a particular antigenic determinant, and memory, the increased responsiveness to foreign material as a result of previous antigenic exposure.

Aside from the heuristic value derived from studying the phylogeny of immunity, there is applied value as well: many of the molluscs and arthropods studied are important vectors of human disease. The broadened understanding of the invertebrate immune response should soon enable investigators to make wiser choices in the use of biological control agents. The response of invertebrates to natural pathogens is well documented by the participants of this workshop. However, successful pathogens have evolved ways of evading host defenses, and the capacity of invertebrates to mount an immune response would be more accurately assessed by using nonreplicating, noninfectious organisms or proteins as antigens.

*Invertebrate Immunity* will be of particular interest to epidemiologists, entomologists, and immunologists. It thoroughly describes host-parasite interactions in arthropods and molluscs, and presents many interesting examples which suggest immune-like mechanisms are operative in invertebrates. The field of invertebrate immunology is clearly in its infancy. However, with the large number of investigators now doing research on invertebrate immune responses, the next few years should bring forth exciting new insights into the mechanisms through which invertebrate immunity is effected.

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**Salivary Glands and the Facial Nerve.** By John J. Conley. Grune & Stratton, Inc., New York, 1975. viii, 391 pp. $85.00.

The author's objective is "to represent primarily, a personal experience with its own bias, contemporaneity and hazards... No effort has been made to review the world's literature, nor to make an analysis of other significant works in the field." As Clinical Professor of Otolaryngology at Columbia University, and one of the world's leading head and neck surgeons, Dr. Conley is uniquely qualified to offer such a volume to the medical profession. It will be useful primarily to the practicing surgeon who deals with salivary gland tumors and who must often decide between surgery and irradiation for any one patient. Differential diagnosis is well presented, prognostic features of malignant growths are discussed clearly, and surgical techniques are illustrated by clear pen and ink drawings. Approximately one-quarter of the book is devoted to the surgical rehabilitation of facial nerve paralysis.

Seven contributing authors include otolaryngologists, radiation therapists, and surgical pathologists. Dr. Conley has added an "Editor's Comment" at the end of each guest chapter and this serves to maintain a clinical perspective throughout.

If any criticism of the book is to be made, it might be that the text is loosely organized and somewhat repetitious. Some of the facial nerve dissections are unclear in the photographs and could have been better illustrated by line drawings. Neverthe-
less, the book is an interesting account of a master surgeon’s experience with neoplastic and nonneoplastic disease of the salivary glands and should be part of the practicing oncologist’s library.

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CONTROL PROCESSES IN VIRUS MULTIPLICATION. Ed. by D. C. Burke and W. C. Russell. Cambridge University Press, Cambridge, 1975. 449 pp. $27.50.

This volume meets the usual high standard of the Society for General Microbiology symposia, but if the reader is looking for a neat compilation of the control mechanisms, he may be disappointed. Except for a few bacteriophage systems, the state of our knowledge has not reached the place where specific controls for individual steps can be defined. This book does devote two chapters to the phage—I especially appreciated Eisen’s concise treatment of the λ phage system—but most of the book is given over to the animal viruses.

We simply do not yet know enough about normal cell processes to be able to identify virus control mechanisms in animal cells. The book becomes an analysis of the several viral replicative pathways, determining the periods during which specific products are made or rates of synthesis modified, and thus identifying the points where control is exerted. Occasionally, by the use of inhibitors of protein or nucleic acid synthesis, it has been possible to determine whether a positive or negative factor mediates the control. The picture developed by the sum of these mostly hazy inferences is much more meaningful than its parts. It is clear that the multiplication of many animal viruses is very closely regulated with controls on transcription as well as translation, and on transport as well as assembly. Some controls are mediated by specific virus products, but very often these are products that have structural or metabolic, as well as control, functions. There is also an intimate relation between the virus and cell-derived control mediators.

More than the title might infer, this approach to the study of control mechanisms has required a full exposition of metabolic pathways, and the book has become a true successor to the 1971 Ciba symposium on Strategy of the Viral Genome and Colter and Paranchych’s 1966, Molecular Biology of Viruses. It is in this broader sense that I believe the book will prove most useful. It is four years since the Ciba volume came out and there has been such growth in the field that one might despair of covering it in a single volume. Here it has been done by summarizing certain large and already well-covered fields, DNA phage, RNA tumor viruses, and interferon, in concise well-organized sections and devoting the bulk of the book to fresher material.

The success of the book seems in part due to the editors’ ability to direct or modify the several contributions so as to avoid duplication, but credit is also due to the contributors who are mostly from a second generation of research workers, still active in the laboratory.

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