An Aspect of Cancer

Endogenous Factors Influencing Host-Tumor Balance. Proceedings of an international symposium, Chicago, Oct. 1966. ROBERT W. WISSLER, THOMAS L. DAO, and SUMNER WOOD, JR., Eds. University of Chicago Press, Chicago, 1967. xiv + 352 pp., illus. $12.50.

This conference on the cryptic question of host-tumor balance was appropriately dedicated to Charles B. Huggins, a major contributor on both the practical and the theoretical level to our understanding of host factors that modify the natural history of neoplastic disease. A happy coincidence was the announcement two days after the closing of the symposium of the Nobel award to Huggins.

The complexity of factors concerned with the balance between host and tumor was explored by some 50 scientists, each a recognized authority in his area. The specific subjects discussed included the influence of hormones on cell growth and behavior and the mechanisms by which they exert their effect, the role of immunologic factors in influencing tumor induction and growth, the clotting mechanism as a factor affecting the blood and lymphatic spread of cancer, and morphological and biochemical correlations with the natural history of cancer. The prepared papers vary in depth more because of the uneven extent of our knowledge than lack of authority or currency. Transcripts of discussions follow each group of papers.

It is obvious that the most profound knowledge we have of host factors relates to the effect of endocrine function during the interval between tumor induction and the appearance of the overt neoplasm. Basic steroid chemistry is combined with fundamental physiology in an elegant series of papers in the first part of the symposium which show constant concern over the relevance of experimental data to man. Our current understanding of steroid action is greatest in relation to human breast cancer. Although far short of providing answers to many important questions, the studies elucidating metabolic pathways and interactions between steroids and cell receptors provide much fundamental information on comparative pharmacology and immunology, with pitfalls appropriately noted. It is in this area that the symposium makes its most significant contribution.

The second part of the symposium is concerned with immunological factors as they modify the induction and development of cancers. Laboratory data and clinical data are reviewed thoroughly, and the papers appropriately emphasize the inconsistencies which continue to plague both bench scientist and clinician. The validity of in vitro models as prototypes for studying in vivo systems is effectively reviewed, and, while perhaps present data do not warrant great optimism, progress is certainly being made.

A less satisfying portion of the book relates to the role of vascular and interstitial tissue behavior on cancer. Experimental models are less informative in contributing to our understanding of cancer in man. Papers in this section are understandably more descriptive than mechanistic.

The summarization of the symposium by George Klein is unusually rewarding. Klein wisely chose to concentrate on the important questions raised by the formal presentations rather than limit his summary to a condensation of presented data. The organizers of the symposium are to be congratulated on both the quality of papers presented and the promptness with which the proceedings were published. This volume is enthusiastically recommended to workers in the field as a successful attempt to synthesize the basic science and the clinical aspects of a very elusive aspect of the study of cancer.

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Effects of Pressure

Chemical Reactions at High Pressures. K. E. WEALE. Spon, London, 1967 (distributed in the U.S. by Barnes and Noble, New York). xvi + 349 pp., illus. $12.50.

The great increase in high-pressure research is a notable contemporary development. Pressure, like temperature, is an effective tool in illuminating the structure of molecules as related both to equilibria and to reaction rates. Increasing the pressure and lowering the temperature both favor a more orderly arrangement of matter and so might be expected to have parallel effects. In fact, however, although most reaction rates are speeded up by raising the temperature, they may be either slowed down or speeded up by raising the pressure, depending on whether or not the activated complex is more or less voluminous than the reactants.

This book reports and interprets the effect of pressure on a wide variety of phenomena, with appropriate concern for the theoretical interpretation. The effect of pressure on equilibria, reaction rates, phase transitions, dielectric constants, and viscosity typify the scope of the book. The literature coverage, although not complete, is extensive enough to be useful. Reaction-rate theory tells us that if the logarithm of the rate of reaction is plotted against pressure the slope is the volume change, ΔV^*, in going from reactants to activated complex. Accordingly a mechanism which implies a volume of activation different from the observed one can be excluded from further consideration. The book illustrates the usefulness of such considerations in a wide variety of cases.

By reading this book one will get a good overview of many fields involving high pressure as well as a useful bibliography which can be used to extend the inquiry. The book is to be recommended for such a survey.

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Arctic Dwellers

Alaskan Eskimos. WENDELL H. OSWALT. Chandler, San Francisco, 1967 (distributed by Science Research Associates, Chicago). xviii + 297 pp., illus. Cloth, $7.25; paper, $4. Chandler Publications in Anthropology and Sociology.

The Eskimo of Alaska have finally been accorded considerable scholarly tribute, after having been overshadowed for several decades by the earlier descriptions of the Arctic dwellers of Greenland and Canada. This well-conceived book is a synthesis of recent data from several investigators, collated with selected historical sources.

The aboriginal Eskimo of Alaska apparently had access to both a greater range and more abundance of food resources than did their eastern counterparts, and were consequently able to sustain a larger population with a relatively higher standard of living. However, Alaska is geographically complex, and patterns of Eskimo occupancy are far from uniform. Within four biotic provinces live the 21 tribes described, each of which is classified according to one of six major subsistence patterns. Variations in tool types necessary to exploit the different ecological regions