Whatever the mechanism(s) of activation, carcinogenesis results in a heterogeneous collection of cells derived from malignant (?) initiator cells and their incompletely or fully differentiated daughter cell derivatives. It is still an unresolved question if somatic cell mutation is the sole cause of cancer or if, and this appears increasingly likely, the normal genome contains information necessary for the phenotypic expression of neoplastic phenomena.

In addition to genetic evidence, the capacity for proliferation noted in tumors, their ability to alter biochemical and biosynthetic pathways, their physiologically disruptive properties, and the relative absence of cytodifferentiative markers in tumors are all characteristics shared in common with embryological forms. Likewise, the apparent dedifferentiation seen in certain tumors is believed by many researchers to be analogous to dedifferentiation evidenced during limb or organ regeneration (particularly in the much studied urodele limb) with the important difference that in the latter condition recognizable and permanent redifferentiation ensues. Regulation and modulation of the differentiated state provide material for even broader analogies between histogenesis and carcinogenesis.

The 11 chapters in this important new book deal rigorously with the relationship of one or more of these epigenetic processes to carcinogenesis and a number of the contributions are notable for their comparative analyses of fundamental processes. The topics cover three general areas of current research interest. First, the regulation of nuclear differentiation in normal development, limb regeneration and neoplasias. The papers of Simnett and Neyeakh are noteworthy here, particularly, the latter’s concise discussion of regulation levels in development. Wolsky treats in detail the chemicals which inhibit gene activity during urodele regeneration and draws a number of significant conclusions applicable to chemical carcinostasis in higher forms.

The second topic area is the molecular role of the surface recognition and adhesion in normal and neoplastic cells. Easty and Collins treat the topic from different perspectives, the former asserting the primacy of ionic and molecular interactions, while Collins seeks to understand the intercellular dynamics of sorting and contact recognition. The paper by Sigot-Luizard reviews his interesting work on the association of tumor and embryonic cells in vitro.

The third general area is an examination of differentiation and organization of tumors either by themselves or in conjunction with embryonic cells. Auersperg and Finnegan compare the effects of the tissue culture environment on explanted normal tissues and on tumor tissues. Particular emphasis is placed on changes in differentiation and organization and on the manner in which cellular changes during carcinogenesis in vivo may have modified in vitro growth and differentiation. Some of the morphological and behavioral changes which are associated with the in vitro transformation of normal cells and which are also largely representative of the culture characteristics of explanted tumors are considered. Gaillard in his review article provides a critical evaluation of what additional
information is required to obtain a clear picture of teratoma, histogenesis and particularly to
determine the extent to which their development is comparable to that of an embryo. Finally,
Lakshmi and Sherbet report on their use of the chick embryonic system to provide an
experimental model to assess the development of heterologous tumors. Noting that even the early
chick embryo is capable of making specific cellular responses they have shown that the
variations of these responses when cultured with tumor cells are related to important tumor
characteristics such as karyotype deviation, growth rate, surface charge on the tumor cells, and
others.
This book will undoubtedly prove of permanent value to researchers and theoreticians alike and
will most likely have a salutary effect on workers who are responsive to its lateral approach to
carcinogenesis.
Donald J. Procaccini, Boston
The goal of clinical immunology during the past 20 years has been suppression of the
immunological response of the host, thereby permitting transplantation of foreign tissues and
organs into the host, or control of allergic and hypersensitivity reactions within the host. During
the last 5 years, the focal point of immunological control has shifted from immunosuppression to
immunopotentiation. The future goal and, indeed, cherished prize of immunology will be the
prevention and control of malignant growth through some type of immunopotentiating.
Immunopotentiating represents the 18th Ciba Foundation Symposium on the control of immune
responses. The symposium was divided into two parts: (1) the definition of the targets of
adjuvant action in immunopotentiating and (2) attempts to increase tumor immunity by
immunopotentiating employing, particularly, bacterial vaccines (BGG) and, also, viruses and
allogeneic cells as immunopotentiating adjuvants. This symposium represents the best current
research on an international basis in this extremely important field, but, curiously, there are only
two representatives from America, Dr. Katz and Dr. McDevitt. The other international experts on
immunopotentiating include Drs. Alexander, Allison, Andersson, Castro, Chihara, Davies,
Dresser, Fachet, Frost, Haddow, Hal-prin, Hamilton, Howard, Humphrey, Karbel, Lance,
Lindenmann, Mathe, White, Wilkinson and Woodruff. The conference is summarized in two
terse pages by Sir Peter Medawar, pointing out that each participant will take away different
important knowledge from the conference, and predicting that ultimately, a lymphocytotropic
hormone will be discovered.
With this particular group of participants, the bulk of the papers are, naturally, experimental in
origin with the emphasis being on basic research rather than on clinical research in
immunopotentiating. The shift in emphasis in the work is away from the small lymphocyte into
the large macrophage, which is the source of the T and B cells. The interactions between the
macrophages, the T cells and the B cells are well discussed in the first section of
Book Reviews
the symposium. The importance of lymphocyte trapping to the mode of action of adjuvants is
particularly well reviewed in the first half of the symposium, as are the cellular mechanisms
underlying the role of adjuvants in immunopotentiating. The use of viruses as immunological
potentiators is well reviewed, and hormonal effects in immunopotentiating are also analyzed.
Several experimental papers then follow on the use of Corynebacterium parvum in
immunopotentiating of the reticuloendothelial system in the control of transplanted tumors. The
effect of the anti-tumor polysaccharide lentinan and the significance of the biogenic amines is briefly reviewed as a relation to tumor immunology. And the final paper on ‘Immunity Adjuvants in Experimental and Human Cancer Therapy’ concludes a brief review of immunopotentiation as it relates to tumor therapy in both the experimental and clinical situation. This book is an outstanding collection of papers on immunopotentiation, will be particularly valuable to basic and clinical research workers in this field, but probably is too specific and too complicated for the average clinician to benefit from. It is a book for university libraries, teaching hospitals, research workers, but not for the average clinician. The price, however, is very modest and the book would become an excellent supplement to a standard immunology text for students and physicians.

V. Richards, San Francisco

J.F. Holland and E. Frye (ed.): Cancer Medicine. 1963 pp., 589 fig., charts, tables; US 1 90.00. This book is tauted by its publishers as being ‘informative, indispensable, incomparable and unquestionably the most critical and comprehensive book on cancer published in any language in the 20th century’. There is little doubt that the book contains a vast amount of information on all aspects of cancer, ranging from etiology to pathogenesis, to epidemiology, to immunity, to diagnosis, and to treatment of specific cancers. Unfortunately, like so many of these monumental masterpieces, it is somewhat outdated in many areas by the time it is published, particularly in the areas where knowledge is most rapidly advancing from both clinical and experimental research in cancer biology. On the other hand, it is truly the best, single book on cancer medicine available at the present time.

Practically every distinguished oncologist in America at both the clinical and experimental level is a contributor to this massive tome. The first several chapters of the book cover etiology, pathogenesis, comparative neoplasia, epidemiology, cancer detection and prevention, and diagnostic radiology of cancer. The principles of cancer management are then discussed in the areas of experimental design, cancer surgery, radiation therapy, nuclear medicine and chemotherapy. This is followed by sections on interactions between the tumor of the host in which endocrine therapy of cancer, tumor immunology, tumor host interactions are well covered and current information in these areas of clinical research are largely reviewed. The detailed treatment of specific neoplasms is then covered from the standpoint of diagnosis and treatment, and no cancer of the body is excluded from complete review. The final sections of the book deal with principles of rehabilitation and selected new developments in the field of oncology.

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This book fills, admirably, its role as an authoritative compilation on all aspects of neoplastic diseases. It relates fundamental knowledge to current understanding of the nature and treatment of human cancer. It provides a critical assessment of various treatment modalities for each specific cancer, and it provides sufficient information that any physician could choose the proper course of management for a given patient with cancer. Even in the area of chemotherapy, where the agents are rapidly changing, the information is excellent and current. It is certainly a worthwhile and, indeed, outstanding contribution to the entire field of cancer medicine, and should be a book on the shelf of every library in the country, either in the university or teaching hospital setting. It will also be an important book for internists and surgeons to have on their personal library shelves, if they deal extensively with cancer problems. The only real criticism of the book is that it is so massive and so loaded with information that one, oftentimes, loses in
understanding what one gains in excessive information. It is hard to really get a feeling for a
subject or a feeling about a particular cancer when so much information is poured at one through
this excellent compendium on all aspects of cancer medicine.
V. Richards, San Francisco
This 400-page volume on ‘Polyamines in Normal and Neoplastic Growth’ is the outgrowth of a
conference held on this subject by the National Cancer Institute of the United States. The
proceedings of the symposium of the National Cancer Institute have been published in this
monograph. Diane H. Russell has served as the editor.
The polyamines, putrescine, spermidine, and spermine, have largely been regarded as the end
product of tissue degradation. And, as their names imply, they are felt to be the result of bacterial
decay or the excretory products of seminal fluid. It is only recently that these polyamines have
come to be regarded as prime regulators in the control of growth processes in both normal and
neoplastic tissues. The full extent of their involvement in normal and neoplastic growth is
detailed in this beautiful monograph, and the volume leaves no doubt that the role of this group
of compounds in the regulation of cellular differentiation, protein and nucleic acid synthesis, and
hormonal responses will increase in importance in the years ahead, as we reach a better
understanding of cell growth and development.
The contents include papers by outstanding workers in all aspects of this field. The relationship
of polyamines to tumor cells, to normal and neoplastic tissue growth, to transfer RNA of
Escherichia coli, to the role of polyamines in leukemic cells, in liver regeneration, in brain
metabolism, in mixed lymphocyte reactions, in tumor immunology and in the early detection of
cancer are all well covered in the papers of this symposium.
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35!
The basic biological work has led investigators to feel that the determination of poly-amine
levels and body fluids might be used as a method of detecting malignant growth, or of following
the effectiveness of the various types of therapy in the treatment of malignant growths. The
book, therefore, contains the latest analytical procedures and methodology to be used in
detecting these polyamines in the experimental as well as in the clinical situation. Of particular
value is the detection by a rapid automated technique utilizing the amino acid analyzer, for this
enables one to follow very easily the polyamine levels in the serum and urine of cancer patients.
The monograph is beautifully done. It is a highly specialized book, but it is certainly essential
reading for anyone interested in the relationship of polyamines to the normal and abnormal
growth. It is a book for researchers in the field; it is a book for libraries, universities and
hospitals, but not for the individual unless he is specifically working in this research area.
V. Richards, San Francisco
US $22.60.
This atlas provides a pictorial guide to the histology of brain tumors. It contains sections on
cellular and neuropathology, vascular disease, trauma, infections, diseases of myelin,
hydrocephalus, metabolic diseases, tumors, dysgenetic syndromes and diseases of the peripheral
nerves. The entire book is only 261 pages so that the bulk of the material is pictorial in character
with relatively little descriptive material taking the form of a short introductory text.
The price of S 22.60 for a major atlas is, indeed, reasonable. The amount of material contained in the atlas, however, is not voluminous and many of the illustrations lack excellence or ease of understanding. On the whole it is well done, but not outstanding. An attempt is made to compensate for the paucity of written material by providing key references at the end of each section together with a guide to major review articles.

The book is primarily for hospital and library ownership, not for individual ownership. There are an abundance of excellent photographs contained within it, but the understanding of the material is somewhat hampered by lack of clarity in labelling the illustrative material. The book is, therefore, recommended as a good atlas of histology of brain tumors. It is, however, primarily for hospital and library ownership rather than for individual ownership.

The terminology used within the book is also atypical of American usage and a little bit hard to comprehend for the American audience.