Book Reviews


The first volume of this comprehensive textbook, written by fifteen Soviet authorities, covers the subjects of comparative and experimental oncology.

I. P. Mistchenko contributes two papers to the section on comparative oncology, one on tumors of vertebrate animals and one on tumors of plants. The biology of the cancer cell is covered by A. D. Timofeevsky, and its biochemistry by E. I. Sterkin. The section on malignant tumors in general includes six reports: A. D. Timofeevsky on transplantation of tumors; M. M. Fomenko and S. N. Ledanov on the morphology of transplanted strains of tumors; M. A. Magat on the experimental production of tumors; L. M. Schabad on the morphology and histogenesis of tumors induced by chemical agents; N. D. Iudina on the effect of carcinogenic compounds on the blood and blood-forming organs; and A. D. Timofeevsky on tissue culture of tumors. The relations between tumor and host are discussed in nine papers: R. E. Kavetsky on the etiology and pathogenesis of malignant tumors; M. B. Medvedeva on metabolism in the presence of tumors; A. A. Bogomoletz on cancer and anergy of the mesenchyme; N. N. Sirotin in allergy and cancer; I. M. Neiman on immunity to malignant tumors; L. M. Shabad on experimental genetics; L. F. Larionov on endocrine glands and cancer; I. P. Mistchenko on diet and cancer; and S. I. Zalkind on mitogenetic radiation and cancer.

On the whole, the textbook is a critical and scholarly presentation of the major aspects of experimental cancer research. The literature is well reviewed and over 3,200 references are cited.

The predominance of the biologic approach in cancer research and the particular emphasis on the effect of tumors upon the organism are characteristic of Soviet experimental oncology, and in these fields Soviet workers are undoubtedly preeminent. One is struck, however, by the practical absence of Soviet work on the genetics of cancer. This deficiency is apparent in the studies on the resistance and susceptibility to transplanted tumors and similar problems in which the genetic factors are not sufficiently appreciated, and in the general use of non-homoygous animals. The existence of mitogenetic rays is not generally accepted in the United States, and the editor of this volume notes that Zalkind ignores the negative reports in his discussion of the subject.

Subsequent volumes are to deal with the general morphology of malignant tumors, the pathology of malignant tumors, general clinical oncology, special clinical oncology, and radiation therapy. This, the first volume of the series, on comparative and experimental oncology, is easily superior to anything of its type available in the English language. In the reviewer’s opinion, it would be worth while to translate it in toto into English, or, even better, to initiate the creation of a similar text by American and British oncologists.

MICHAEL B. SHIMKIN


These are the proceedings of the first convention of oncologists of the Ukraine Republic, held in Kiev on May 25-30, 1938. The meeting was attended by 391 delegates, representing 7 of the 11 Republics of the Soviet Union; practically all the workers prominent in experimental oncology in the U.S.S.R. were present. The 93 reports were divided into 10 sessions, with discussions and a summary at the end of each. The subjects of the sessions were: (1) Carcinogenic substances. (2) Biology of the cancer cell; precancer. (3) Resistance and susceptibility to cancer. (4 and 5) Alterations in the cancerous organism. (6) Organization of the anti-cancer campaign. (7) Cancer of the respiratory organs. (8) Biologic therapy and biologic methods of diagnosis. (9) Effectiveness of surgical treatment. (10) Effectiveness of radiation therapy of malignant tumors.

The wide scope of experimental oncology in the Soviet Union, and the desirability of better acquaintance and closer contact with the work of the Soviet oncologists, are apparent from the Resolutions of the Convention (pages 537-539) concerning the reports on experimental oncology:

“The convention notes that on the subject of substances that elicit malignant tumors the following results were reached: (1) A series of compounds was synthesized and their action investigated. (2) Interesting work is in progress on isolated compounds and their action on cells and on the whole organism. (3) Important specificity of their action as substances that produce malignant tumors was established. (4) A series of various facts was established toward the possibility of carcinogenic compounds arising in the organism and, further, their possible etiologic significance in the origin of spontaneous tumors in animals and man.

“The convention considers that further extension of investigations in the problem of carcinogenic substances is essential, including the following: (1) Elucidation of their mechanism of action. (2) Elucidation of the correlation of carcinogenic activity with the chemical structure of the compounds. (3) Further study of the problem of endogenous production of carcinogenic compounds and their etiologic role.

“The problem of the biology of the cancer cell, the following results were reached: (1) It was reaffirmed through new investigations, with the aid of new methods, that blastogenous cells arise from the cells of the organism and are characterized by certain degrees of autonomy. (2) The cancer cell, possessing the property of unrestricted growth, may for a long time exist in a quiescent state, retaining its established properties. (3) The method of tissue culture allows the discovery that malignant cells of man retain to certain limits the histo-blastomatous properties of the tissue of origin and in certain cases have the ability to differentiate. (4) New facts were established in the important field of study of the chromosome structure of the cancer cell. (5) Data were presented touching certain aspects of the metabolism of tumor tissue (proteosynthesis, acid-base systems).
"It is imperative (1) to continue the study of the biology of the tumor cell, particularly human, in the fields of karyology, metabolism of substances, and physico-chemical properties, (2) to extend work on the elucidation of the possibility of isolating the factor of malignancy from mammalian cells.

"On the most important question of precancerous states are being conducted numerous investigations. Side by side of extensive clinical observations on the understanding of precancer, the question was enlightened by morphologic, experimental, biologic, and biochemical points of view. On this were received certain new data on the general and local changes in the organism during the precancer period.

"The question requires further detailed study in close collaboration with the clinic.

"On the question of resistance and disposition to cancer the following results were reached: (1) It was established that the organism possesses resistance to malignant neoplasms; the stimulation of this characteristic of the organism constitutes one of the most important problems in the war against cancer. (2) It was established that active mesenchyme plays an essential role in the protection of the organism to blastomatous growth (a view introduced by Acad. A. A. Bogomoletz 14 years ago). (3) The stimulation of active mesenchyme by doses of specific cytotoxic serum restores the carcinolastic property of serum of patients with cancer, which points toward the possibility of achieving a beneficial effect on the mesenchyme of patients with cancer. (4) Data were presented allowing the suggestion that the increase in immunity to malignant tumors is associated with an increase in oxidizing processes and lowering of glycolytic processes, and, conversely, lowered resistance is associated with depressed tissue respiration and increased glycolysis.

"Essential are (1) further studies on the role of active mesenchyme in the pathogenesis of malignant tumors, (2) further studies on the action of cytotoxic antimesenchymal serum on the organism with the objective of developing methods of prophylaxis of recurrences and metastases and general treatment of cancer, (3) further studies in the question of specific immunity to malignant tumors, on the antigenic properties of the cancer cell, and possibly anti-tumor vaccination, (4) further studies of the bio-physico-chemical nature of the immunizing substance to malignant tumors.

"New experimental results were presented showing the role of the nerve component in the distribution of metastases. Further wide study of this question is essential, as well as of the whole problem of the nervous system in the origin and course of tumors.

"Reports were presented on the subject of cachexia in cancer, from clinical as well as experimental standpoints.

Special attention was devoted to the importance of full-value protein and vitamin diet in patients with cancer. Further work on the pathogenesis of cancer cachexia through investigations in metabolism is essential.

"For the guarantee of the possibility of extending the investigations noted above, the convention considers essential: (1) Organization of laboratories of organic synthesis for the production of carcinogenic and anticanicogenic chemical compounds. (2) organization of laboratories for biologic investigation, on animals, of the possible carcinogenic action of compounds suspected of possessing such properties and having importance in industry or which may be widely used by the general population. (3) The initiation of studies, in special oncolological institutes, on the problem of biologic and chemical methods of cancer therapy and the study of methods of biologic diagnosis. (4) It is considered desirable to obtain from the United States or France a series of homozygous strains of mice and other laboratory animals and to assure their maintenance in several central laboratories. (5) To procure strains of tumors that are important for experiments and not available in the U.S.S.R., (6) To initiate the problem of producing new strains of tumors (of dogs, monkeys, and other animals). (7) To develop methods of producing tumors by chemical products in new types of animals."

Michael B. Shemin


The "Dictionary of Bio-Chemistry," as stated in its preface, was designed for readers of biochemical literature. The book is a cross between an alphabetical glossary and something resembling a condensed encyclopedia. However, whether a book of this type is a mere glossary or an encyclopedia, its value depends entirely upon its degree of accuracy in defining biochemical terms and compounds. This book contains misleading information and so many inaccuracies and poor definitions that, despite some good but brief articles, it cannot be recommended for readers of biochemical literature. To mention only a few of its shortcomings and errors, coenzyme I is said to be a mononucleotide and not differentiated from coenzyme II; lysozyme, which is a protein, is stated to contain no nitrogen; and urea is said to react in vitro with glycine to form glycyamine. Also, the configuration of some of the natural amino acids is sometimes said to be levorotatory and sometimes dextrorotatory. Anyone wishing to understand the recent controversy over Kögel’s theory on the occurrence of D-amino acids in tumors would find this book a hindrance rather than an aid.

David Shemin

Correction

The authors of The Metabolism of Normal and Tumor Tissue (3:73-87. 1943) request that the following correction be made. It is made thus tardily because their first letter respecting it was lost in transit.

In Tables III and V the second column, which now reads:

| Liver tumor |
| " " |
| " " |
| etc. |

should read as it was in their manuscript:

| Liver |
| Tumor |
| Liver |
| Tumor |
| etc. |

the first horizontal line of figures giving the results with liver tissue, the second horizontal line the results with tumor tissue, and so on.

Michael B. Shimkin

Cancer Res 1944;4:71-72.

Updated version
Access the most recent version of this article at:
http://cancerres.aacrjournals.org/content/4/1/71.2.citation