Contents

Asterisks preceding the title refer to studies in humans.

1 * Favorable Remission Induction Rate with Twice Weekly Doses of L-Asparaginase.
   Norman Jaffe, Demetrios Traggis, Lakshmi Das, Gretchen Frauenberger, Hie Won Hann, Byung Soo Kim, and Yvonne Bishop.

5 Some Physical and Biological Characteristics of the Mouse Mammary Tumor Virus.
   Dan H. Moore, Nurul H. Sarkar, Jesse Charney, and Bernhard Kramarsky.

11 Survival and Cell Kinetics Effects of Adriamycin on Mammalian Cells.

17 Characterization of Antiserum against Myeloma Cells.
   Leo P. Cawley, William L. Goodwin, and Barbara J. Minard.

23 Macroautoradiographic and Radiometric Studies on the Distribution of 3-Methylcholanthrene in Mice and Their Fetuses.
   Gonya Takahashi and Kimio Yasuhira.

29 Regulation of DNA Synthesis by Amino Acid Limitation.
   Michael Brunner.

33 The Effect of Tumor Size on Concomitant Tumor Immunity.
   Peter J. Deckers, Robert C. Davis, George A. Parker, and John A. Mannick.

40 Effect of 5-Azacytidine on Phytohemagglutinin-stimulated Horse Lymphocytes and Cultured Mouse L929 Cells.
   B. Sayeeda Zain, R. L. P. Adams, and R. C. Imrie.

47 Quantitative Study of Melanosome and Mitochondrial Populations in Pigmented and Amelanotic S-91 Mouse Melanomas.
   Harvey D. Zara and Harry B. Demopoulos.

51 Control of the Adenylate Charge in the Morris “Minimal-Deviation” Hepatomas.
   Wayne E. Criss.

57 Control of the Adenylate Charge in Novikoff Ascites Cells.
   Wayne E. Criss.

65 Metabolism of Human Carcinoembryonic Antigen in Xenogeneic Animals.

69 Chemical Induction of Subcutaneous Tumors in BALB/c and Swiss Mice Infected with Wild Type C RNA Viruses Derived from BALB/c Tissues.
   Ronald A. Salerno, Gordon M. Ramm, and Carrie E. Whitmire.

78 * Maintenance of Normal, Metaplastic, and Dysplastic States of Adult Human Bronchial Mucosa in Organ Culture.

88 Toxicity of Benzo(a)pyrene and Air Pollution Composite for Adult Human Bronchial Mucosa in Organ Culture.

94 * Identification of the Enzymatic Pathways of Nucleotide Metabolism in Human Lymphocytes and Leukemia Cells.
   E. M. Scholar and P. Calabresi.

104 Inhibition of Erythroleukemia in Mice by Induction of Hemolytic Anemia Prior to Infection with Rauscher Leukemia Virus.

112 * A Tumor-associated Antigen in Gastric Cancer Secretions.
   Emmanuel Deutsch, Charles A. Apffel, Haruki Mori, and John E. Walker.

117 A Correlation between the Carcinogenicity of Isomeric N-Hydroxy-N-acetylaminofluorenes and Their in Vitro Effect on Mitochondria.
   Herbert I. Hadler and Barbra G. Daniel.

123 * Autoradiographic Analysis of Cell Kinetics in Human Normal Epidermis and Basal Cell Carcinoma.

128 Antitumor Activity of Vitamin A Acid and Fluorouracil Used in Combination on the Skin Tumor, Keratoacanthoma.
   Lawrence Prutkin.

134 Stimulation of the Phosphorylation of Mouse Epidermal Histones by Tumor-promoting Agents.

140 Individual versus Group Caging of Mice with Grafted Tumors.
   Roger-Paul Dechambre and Charles Gosse.
145 Early Lesions in Cats Inoculated with Feline Leukemia Virus.  
Edward A. Hoover, Lance E. Perryman, and Gary J. Kociba.

153 Uptake of Methotrexate, Aminopterin, and Methasquin and Inhibition of Dihydrofolate Reductase and of DNA Synthesis in Mouse Small Intestine.  
Frederick S. Philips, Francis M. Sirotnak, Jane E. Sodergren, and Dorris J. Hutchison.

159 Depression of Polyamine Synthesis in L1210 Leukemic Mice during Treatment with a Potent Antileukemic Agent, 5-Azacytidine.  
Olle Heby and Diane H. Russell.

166 The Effect of Cytosine Arabinoside on Virus Production in Various Cells Infected with Herpes Simplex Virus Types 1 and 2.  
Robert L. Nutter and Fred Rapp.

171 Protective Effect of Immune Sera against Transplantable Moloney Virus-induced Sarcoma and Lymphoma.  

179 * An Autopsy Study of Metastatic Sites of Breast Cancer.  
Enrico Viadana, Richard Cotter, John W. Pickren, and Irwin D. J. Bross.

182 Announcements.

183 Instructions to Authors.

COVER LEGEND

Contemporary optimism regarding the solution of the cancer problem rests to a great extent on the application to oncology of scientific advances in immunology and virology. In turn, oncology is making contributions to immunology and virology.

The founders of modern immunology are F. M. Burnet and P. B. Medawar, who shared in the 1960 Nobel Prize in Medicine and Physiology "for their discovery of acquired immunological tolerance."

Frank Macfarlane Burnet (bottom) was born at Traralgon, Victoria, Australia, on September 3, 1899. He completed his medical course at Melbourne University, graduating M.B., B.S., in 1922 and M.D. in 1923.

His first research work on the agglutinin reactions in typhoid fever was begun in the Walter and Eliza Hall Institute of the Melbourne Hospital in 1923 and, except for periods overseas, all his professional career was in the Hall Institute, of which he was Director from 1944 to 1965.

In 1926-1927 he worked at the Lister Institute, London, and in 1932-1933 he was at the National Institute for Medical Research, Hampstead, England.

Burnet's work has covered several fields but, until 1957, was primarily concerned with viral and rickettsial disease with special interest in influenza virus. He has had a continuing interest in immunology since his early work on staphylococcal toxin and antitoxin and is well known for his formulation of the clonal selection theory of antibody production.

Since retirement in 1965 he has been a guest professor in the School of Microbiology, University of Melbourne. In addition to a continuing interest in immunology, especially in its application to cancer and aging, he has become deeply concerned with the social implications of science and has written two nontechnical books, Changing Patterns (autobiography) and Dominant Mammal.

Burnet was married to Linda Druce in 1928. They have 1 son and 2 daughters. He has visited America frequently in recent years and is an Honorary Fellow of the American College of Physicians and a Foreign Associate of the National Academy of Sciences.

He was knighted in 1951, receiving the O.M. (Order of Merit) in 1958 and K.B.E. (Knight Commander of the Order of British Empire) in 1969.

Peter Brian Medawar (top) was born on February 28, 1915, in Rio de Janeiro, Brazil, the son of a naturalized British subject. He studied zoology at Oxford University and after graduation began his research at the School of Pathology at Oxford. In 1944 he became a University Lecturer in zoology at Oxford, but he left three years later to assume the post of Mason Professor of Zoology at the University of Birmingham. He continued his earlier work at Oxford on the mechanism of skin graft reactions in Birmingham with studies of acquired tolerance to skin grafts in cattle. In 1951 Medawar went to University College, London, as the Jodrell Professor of Zoology. In 1962 Medawar was appointed to his position as the director of the National Institute for Medical Research, Mill Hill, London. He was elected to the Royal Society in 1949 and received its Royal Medal in 1959. He received the C.H. (Companionship of Honor) in 1972. He has written books, entitled The Uniqueness of the Individual, The Future of Man, and The Hope of Progress.

Medawar was married to Jean Shinglewood Taylor in 1937; they have 2 sons and 2 daughters. He has been a frequent visitor to the United States and has given series of lectures at Harvard, Cornell, and University of California, Berkeley; he is an honorary foreign member or Associate of the National Academy of Science, the American Philosophical Society, and the New York Academy of Sciences.
