Contents

883 Mammary Neoplastic Response of Lewis and Sprague-Dawley Female Rats to 7,12-Dimethylbenz(a)anthracene or X-ray. Claire J. Shellabarger.

886 Increased Activity of Polynucleotide Ligase from Rat Hepatoma Induced by N-2-Fluorenylacetamide. Kinji Tsukada, Shigeru Hokari, Nobuko Hayasaki, and Nobuyuki Ito.


898 The Immunogenic Activity of Tumor Antigens Retained by the Reticuloendothelial Cells of Tumor-bearing Mice. Jan Vaage.


908 Malignant Tumors in Rats Given Lasiocarpine. Donald J. Svoboda and Janardan K. Reddy.


921 Unexpected Toxicity in Patients Treated with Ipophasmide. Jacobus J. van Dyk, Hendré C. Falkson, Alma M. van der Merwe, and Geoffrey Falkson.

925 Studies on Nucleoli and Cytoplasmic Fibrillar Bodies of Human Hepatocellular Carcinomas. Karel Smetana, Ferenc Gyorkey, Phyllis Gyorkey, and Harris Busch.


943 Polysorbinosome Disaggregation in Rat Liver following Administration of the Phytopolective Proteins, Abrin and Ricin. Jung-Yaw Lin, Chia-Chu Pao, Shyr-Te Ju, and Ta-Cheng Tung.

948 Microdimer Studies on the Respiration of Burkitt Lymphoma Cells (EB-3). J. D. Lutton and M. J. Kopac.

952 Binding of Chemical Carcinogens to Nuclear Proteins of Rat Liver. Richard A. Jungmann and John S. Schweppel.


968 Feeding Response to Change in Absorbable Food Fraction during Growth of Walker 256 Carcinosarcoma. S. D. Morrison.

973 Effect of Enzyme Induction on the Metabolism of Benzo(a)pyrene and 3'-Monomethylaminoazobenzene in the Pregnant and Fetal Rat. Richard M. Welch, Barbara Gommi, Alvito P. Alvaras, and A. H. Conney.

979 Synthesis of a-Fetoprotein by Liver, Yolk Sac, and Gastrointestinal Tract of the Human Conceptus. David Gitlin, Anita Peccei, and Geraldine M. Gitlin.


Aminoacyl Synthetases and Isoaccepting Transfer RNA's from Normal and Regenerating Rat Liver. *T. Tidwell, B. J. Bruce,* and *A. Clark Griffin.*


Augmented Immunogenicity of Tumor Cell Homogenates Infected with Influenza Virus. *Charles W. Boone and Kenneth Blackman.*

5-(1-Adamantyl)pyrimidines as Inhibitors of Folate Metabolism. *Yiu K. Ho, Maire T. Hakala,* and *Sigmund F. Zakrzewski.*

Renal Tumors and Other Lesions in Rats following a Single Intravenous Injection of Daunomycin. *Stephen S. Sternberg, Frederick S. Philips,* and *Alice P. Cronin.*

The in Vitro Interaction of a Metabolite of N-Acetyl-4-aminobiphenyl with Rat Liver Mitochondria. *Herbert I. Hadler and Barbra G. Daniel.*


**COVER LEGEND**

Johannes Müller (1801—1858), one of the fountainheads of modern medicine, was born in Coblenz, Germany. He received his M.D. from the University of Bonn in 1822 and practiced as a physician for only a short period before pursuing an academic career. He was professor of pathology, physiology, and comparative anatomy at the University of Berlin until his retirement.

In Müller’s early work, he recognized the similarity between cells previously observed in plants and those which he observed in animals (Vergleichendes Anatomie der Myxöiden, Berlin, 1835), thus introducing into biology the cell theory heretofore applied to botany.

His greatest contribution is that in which he demonstrated the harmony between the pathological and the embryonic development of tumors (Über den feineren Bau und die Formen der Krankhaften Geschwülste. Berlin: G. Reimer, 1838).

This work was a departure from the prevailing opinion that cancer was a general disease and the tumor a local manifestation. One of the first to use the microscope, Müller showed that the cancer was comprised of a growth of abnormal cells and that these neoplasms resembled those found in normal tissue. Thus he denied the existence of a specific cancer cell and contended that cellular physiology is universal to both normal and pathological growth. His many writings include *Handbuch der Physiologie des Menschen,* 1834—1840. Müller’s studies were conducted within the framework of the prevailing blastema theory of cell genesis which held that “globules,” the basic structural element, arose within an amorphous material, blastema, by coagulating into a nucleus around which the rest of the cells formed, in effect, a theory of spontaneous generation.

The Physiological Disposition of 5-Fluorouracil in Mice Bearing Solid L1210 Lymphocytic Leukemia. *Marjory Chadwick and William J. Rogers.*


Respiratory Tract Carcinogenesis in Hamsters Induced by Different Numbers of Administrations of Benzo(a)pyrene and Ferric Oxide. *Umberto Saffioti, Ruggero Montesano, Arthur R. Sellakumar,* Francesco Cevis, and *David G. Kaufman.*

Cyclic 3',5'-Nucleotide Phosphodiesterases of Novikoff Rat Hepatoma, Mouse L, and HeLa Cells Growing in Suspension Culture. *Joachim Schröder* and *Peter G. W. Plagemann.*


Books Received.

Announcements.

Strongly built, with broad shoulders, and a massive Achillian head, Müller was a striking, magnetic, impressive teacher of rare personal charm. [Details are from F. H. Garrison. *An Introduction to the History of Medicine.* Ed. 4 (reprinted). pp. 451—453. Philadelphia: W. B. Saunders Co., 1929.] Among Müller’s followers were Brücke, Du Bois Reymond, Helmholtz, Kölliker, Henle, and especially Schwann, who at Müller’s suggestion started his classic work on the cellular character of animal tissues, and Virchow, the father of cellular pathology, who was one of his students. Virchow wrote of his teacher’s influence, “... he (Müller) was the first to give the cell concept a broad application to pathology in that he directed it upon the study of tumors... We younger men early learned to think in terms of cellularity.” (R. Virchow, *Virchow Arch. Pathol. Anat.*, 87: 389, 1882, from Hans G. Schlimmburger, *Origins of the Cell Concept in Pathology,* Arch. Pathol., 37: 396–407, 1944). Müller founded the Archiv für Anatomie, Physiologie, und Wissenschaftliche Medicin, later known as Müller’s Archiv, in 1934. He received the Copley Medal of the Royal Society of London.

He is shown on the cover in an 1858 photograph which was kindly supplied by Dr. Peter Olch, National Library of Medicine, Bethesda, Maryland. The cancer cells are sketched after Figs. 6 and 7 of Müller’s famous 1838 work which contains the first reproduction of cancer cells. The original figures are supplied through the courtesy of the New York Academy of Medicine Library.