

Plate 1. Spread of infection within the head along venous channels. **Furuncle of upper lip:** Spread of infection by way of superior labial, anterior facial, and ophthalmic veins leading to septic cavernous sinus thrombosis. **Infected wound of scalp:** Spread of infection by way of emissary veins to superior sagittal sinus and from there to cerebral veins (retrograde), causing brain abscess. **Frontal sinusitis:** Spread of infection by way of small veins which drain directly into the superior sagittal sinus. From here infection may extend to cerebral veins, causing brain abscess, or by way of superior ophthalmic vein to the cavernous sinus, causing septic thrombosis of this sinus. **Otitis media and mastoiditis:** Spread of infection to sigmoid sinus and, by way of petrosal sinuses, to the cavernous sinus to cause septic thrombosis. Extension of infection to adjacent brain tissue may also occur, either by contiguity or through small venous channels, leading to brain abscess. A major complication in all these instances is widespread dissemination of infection, since septic thrombosis of intracranial venous sinuses may extend into the internal jugular vein, resulting in septicemia.



A



B

Plate 2 Syphilis. *A*, Primary lesion of vulva (chancre). *B*, Papulosquamous secondary lesions. (From Top: Handbook of Communicable Diseases, The C. V. Mosby Co.; reprinted from Therapeutic Notes through courtesy of Parke, Davis & Co.)

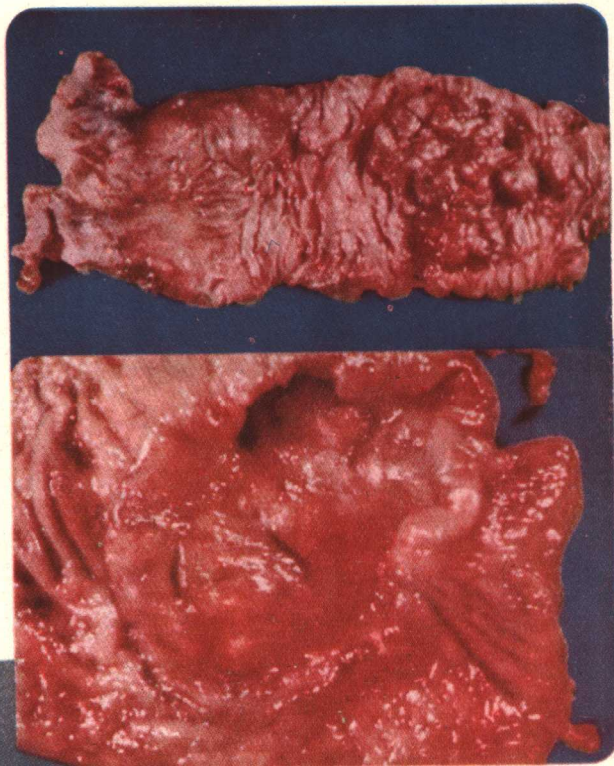


Plate 3. 1, Esophageal varices in a case of cirrhosis of liver. 2, Mechanical obstruction of small intestine due to old adhesions. Proximal segment is distended and gangrenous. 3, Annular carcinoma of sigmoid colon, showing almost complete encirclement of lumen. 4, *Enterobius vermicularis* in cecum. 5, Carcinomatous ulcer of stomach. Margins are rolled and elevated because of carcinomatous invasion beneath surrounding mucosa. 6, Polypoid adenocarcinoma of rectum. Anal sphincter is at left.

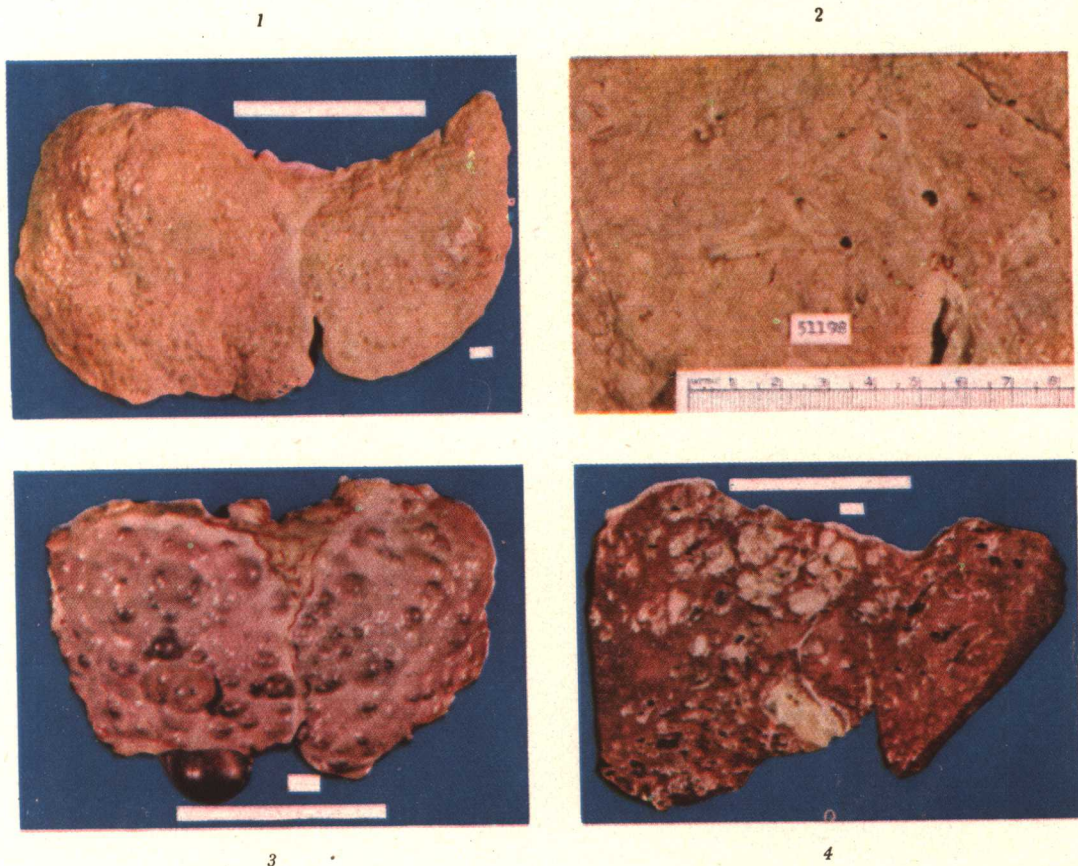


Plate 4. 1, Granular to nodular liver of advanced Laennec's cirrhosis, from 65-year-old white man with history of chronic alcoholism. 2, Nodules of variable size surrounded by dense connective tissue septa. Same liver as that shown in 1. 3, Small liver with large bulging nodules. Postnecrotic cirrhosis in 20-year-old female. 4, Suppurative cholangitis with multiple abscesses secondary to carcinomatous obstruction of common duct.



Plate 5. 1, Hepatic cirrhosis. Ascites, congested veins, pigmented male nipple, axillary alopecia, absence of striae. 2, Hepatic cirrhosis. Palmar erythema and vascular spider. 3, Hepatic cirrhosis. Vascular spiders. 4, Jaundice and biliary cirrhosis following ligation of common bile duct. (From Wiener: *Skin Manifestations of Internal Disorders*, The C. V. Mosby Co.)

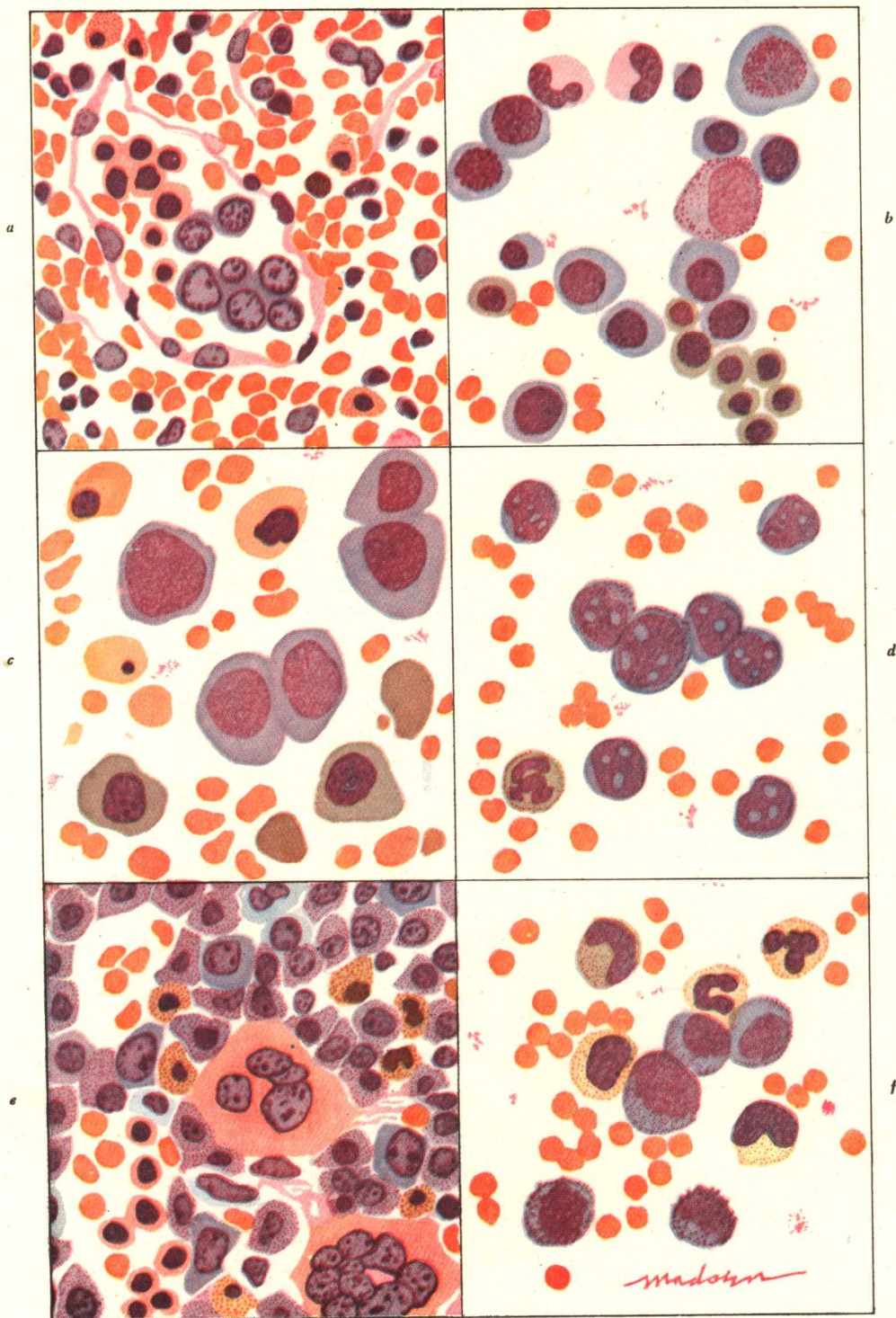
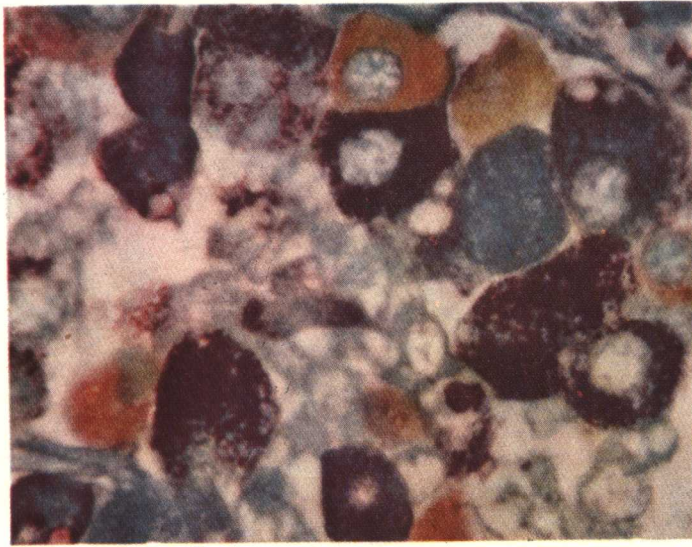


Plate 6. For legend see opposite page.

1



2



3

Plate 7. 1, Normal cells of anterior pituitary: beta basophils, purple granules; delta basophils, green granules; acidophils, orange; chromophobe cells at center, light green. (Aldehyde-fuchsin counterstained with light green and orange G after performic acid; $\times 1,180$.) 2, Anterior pituitary in Cushing's syndrome to show stages of hyaline cytoplasmic change in basophils (residual granules, purple). (Stain as in 1; $\times 830$.) 3, Hyaline basophil cells from case of islet carcinoma of pancreas; prolonged treatment with cortisone. (Acid fuchsin-aniline blue; $\times 830$.)

PATHOLOGY

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Preface to fourth edition

In this fourth edition of *Pathology* the original objectives have been adhered to with but minor modifications. As in the past, a thorough coverage of the subject has been attempted within the limitations imposed by a single volume. The general plan of the book has remained the same, for its usefulness appears to have been proved by time and usage.

The first undergraduate course in pathology should be but the beginning and not the end of study of this subject. Throughout our lives as physicians we should continue to be students of pathology, differing from our undergraduate colleagues only in the stage of our learning and experience. Many of the subjects or conditions included are designed to make the book useful as a reference tool for more advanced students or for pathologists and other practicing physicians, although encyclopedic completeness is not implied. The use of a book of this size and scope by the undergraduate medical student appears to be justified where the teacher of pathology executes his true functions of guidance, interpretation, stimulation, and encouragement. It is hoped that this book will continue to be a useful aid to the student of pathology, both during and after formal courses, and in correlation with other aspects or subjects of the clinical practice of medicine.

Almost all parts of the book have received ex-

tensive revision, and several areas have been completely rewritten. New chapters have been added on hypersensitivity diseases, including so-called collagen diseases, and on mesenchymal tumors of soft tissues. Considerable attention in several areas has been given to the knowledge gained by histochemistry and electron microscopy, by which morphologic pathology has been extended to new horizons. New findings and newly recognized conditions have been stressed throughout and particularly in those areas where such additional knowledge is of clinical significance or has altered some of our basic concepts. Although the dynamic advances of only a few years would make too long a list, examples which may be mentioned are the carcinoid syndrome, aldosteronism (Conn's syndrome), familial chronic idiopathic jaundice (Dubin-Sprinz disease), and pulmonary alveolar proteinosis.

I am grateful for the continued cooperation of the contributors and particularly welcome the several new authors who have contributed to this edition. Generous and willing assistance and support have been given by my co-workers. Particular thanks are due my editorial assistant, Mrs. Sevena Hamilton, and my secretary, Miss Edna Mae Everitt. To these and others who lightened the task by help, encouragement, and indulgence, acknowledgment insufficiently expresses the feeling of appreciation.

W. A. D. Anderson

Preface to first edition

Pathology should form the basis of every physician's thinking about his patients. The study of the nature of disease, which constitutes pathology in the broad sense, has many facets. Any science or technique which contributes to our knowledge of the nature and constitution of disease belongs in the broad realm of pathology. Different aspects of a disease may be stressed by the geneticist, the cytologist, the biochemist, the clinical diagnostician, etc., and it is the difficult function of the pathologist to attempt to bring about a synthesis, and to present disease in as whole or as true an aspect as can be done with present knowledge. Pathologists often have been accused, and sometimes justly, of stressing the morphologic changes in disease to the neglect of functional effects. Nevertheless, pathologic anatomy and histology remain as an essential foundation of knowledge about disease, without which basis the concepts of many diseases are easily distorted.

In this volume is brought together the specialized knowledge of a number of pathologists in particular aspects or fields of pathology. A time-tested order of presentation is maintained, both because it has been found logical and effective in teaching medical students and because it facilitates study and reference by graduates. While presented in an order and form to serve as a textbook, yet it is intended also to have sufficient comprehensiveness and completeness to be useful to the practicing or graduate physician. It is hoped that this book will be both a foundation and a useful tool for those who deal with the problems of disease.

For obvious reasons, the nature and effects of radiation have been given unusual relative prominence. The changing order of things, with increase of rapid, world-wide travel and communication, necessitates increased attention to certain viral, protozoal, parasitic, and other conditions often

dismissed as "tropical," to bring them nearer their true relative importance. Also given more than usual attention are diseases of the skin, of the organs of special senses, of the nervous system, and of the skeletal system. These are fields which often have not been given sufficient consideration in accordance with their true relative importance among diseases.

The Editor is highly appreciative of the spirit of the various contributors to this book. They are busy people, who, at the sacrifice of other duties and of leisure, freely cooperated in its production, uncomplainingly tolerated delays and difficulties, and were understanding in their willingness to work together for the good of the book as a whole. Particular thanks are due the directors of the Army Institute of Pathology and the American Registry of Pathology, for making available many illustrations. Dr. G. L. Duff, Strathcona Professor of Pathology, McGill University, Dr. H. A. Edmondson, Department of Pathology of the University of Southern California School of Medicine, Dr. J. S. Hirschboeck, Dean, and Dr. Harry Beckman, Professor of Pharmacology, Marquette University School of Medicine, all generously gave advice and assistance with certain parts.

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W. A. D. Anderson