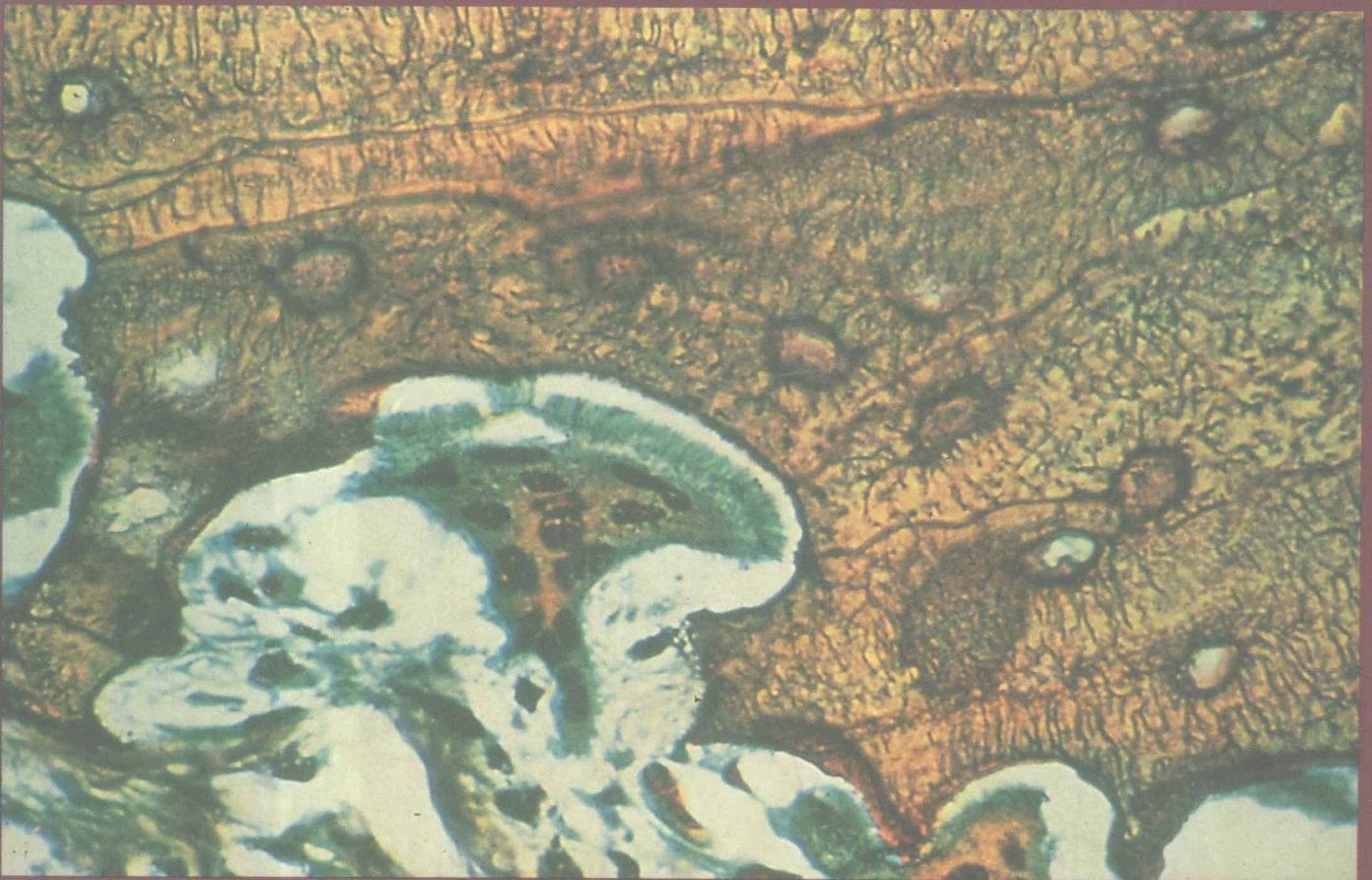


International Edition

Color Atlas of Basic Histology

IRWIN BERMAN



A LANGE MEDICAL BOOK

Color Atlas of Basic Histology

A L A N G E M E D I C A L B O O K

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On the cover is a photomicrograph of an osteoclast (Fig. 4-10). Courtesy of Mr. Ralph Alvarez.

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Preface

The purpose of this atlas is to provide students with a simple, concise, readily accessible source of morphologic information for use in the identification of tissues and organs in histology laboratories. The atlas can also serve as an independent study and review resource. As the underlying principle of this atlas is simple presentation of the essential imagery of microscopic anatomy, it is offered as a supplement to lecture and text material, not a substitute for it.

The atlas is a compendium primarily of color pictures taken at the light microscope level (some scanning and electron micrographs are included) that have been selected for the clarity with which they depict the basic morphologic characteristics of tissues and organs that students need to be able to recognize. The subject matter is presented in oversized photomicrographs. Labeling of photomicrographs has been kept as simple as possible, guiding students directly to the key morphologic features that identify the subject and to structures that are important in understanding the function of the subject. The photomicrographs, unless stated otherwise, were taken from human material stained with hematoxylin and eosin, the dyes most commonly used in histology and pathology. The tissue source for the electron micrographs is also noted. For the organ systems, wherever possible, a flow of morphologic information from low- to high-magnification images is presented. The magnification of each image is a final figure taking into account photomicrographic and print magnifications.

Since the identification of bone marrow cells is a difficult exercise in histology, a concise description of the

major morphologic changes which occur during development of the erythroid and myeloid cell series accompanies the photomicrographs in Chapter 9, "The Identification of Bone Marrow Cells."

Acknowledgments

It is a pleasure for me to acknowledge and thank the following individuals who so willingly and generously contributed to this atlas: Mr. Ralph Alvarez, Dr. Mary Bartlett Bunge, Mr. Jean-Pierre Brunschwig, Dr. Ronald G. Clark, Ms. Susan J. Decker, Dr. Joanne M. Howard, Dr. Douglas R. Kelly, Mr. Andrew Lee, Dr. Jacques Padawer, Dr. Melanie M. Pratt, Dr. Mikel H. Snow, Dr. Gary E. Wise, and Dr. Richard L. Wood.

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I express my deep appreciation to Mr. Gilbert S. Kahn and the Janet A. Hooker Charitable Trust, whose gifts helped defray the cost of photographic supplies, film processing, and making of print proofs.

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**Color Atlas of
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1 Epithelial Tissue

FIGURE 1-1

Simple squamous epithelium (arrows) of the serosa of the small intestine. This epithelium is also referred to as mesothelium. $\times 344$.

FIGURE 1-2

En face view of the simple squamous epithelium of the peritoneum. Note the very close association of the lateral cell boundaries of adjoining cells. $\times 869$.

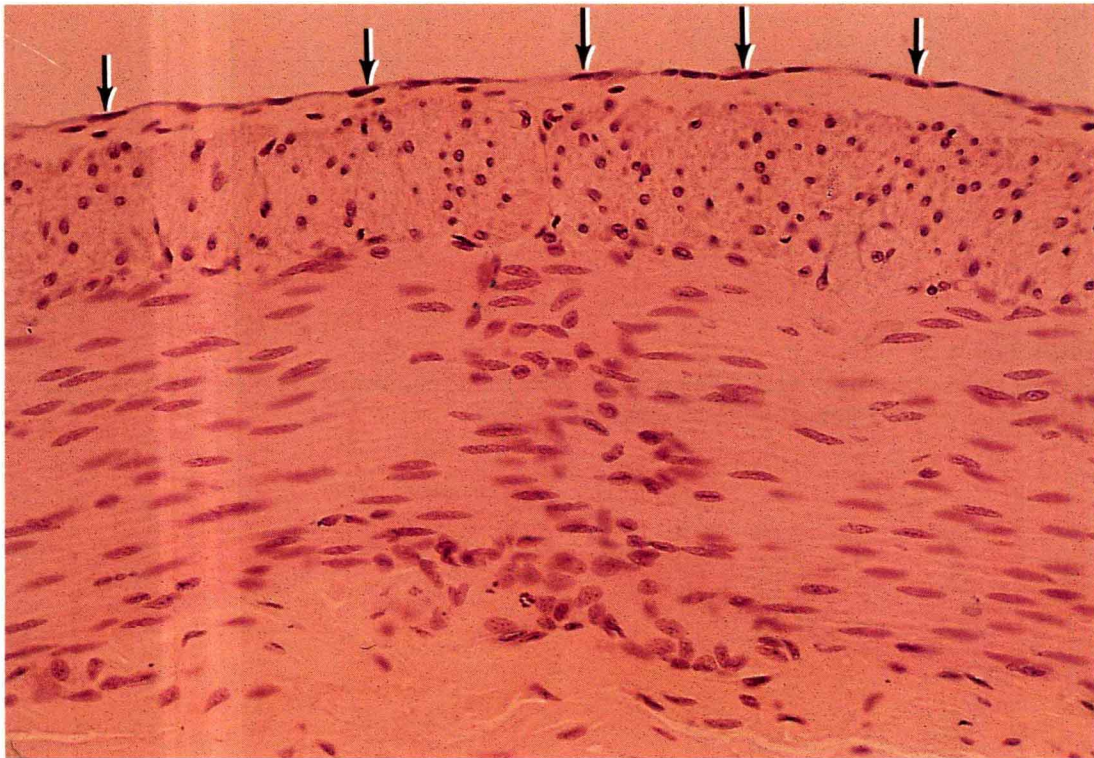


figure 1-1

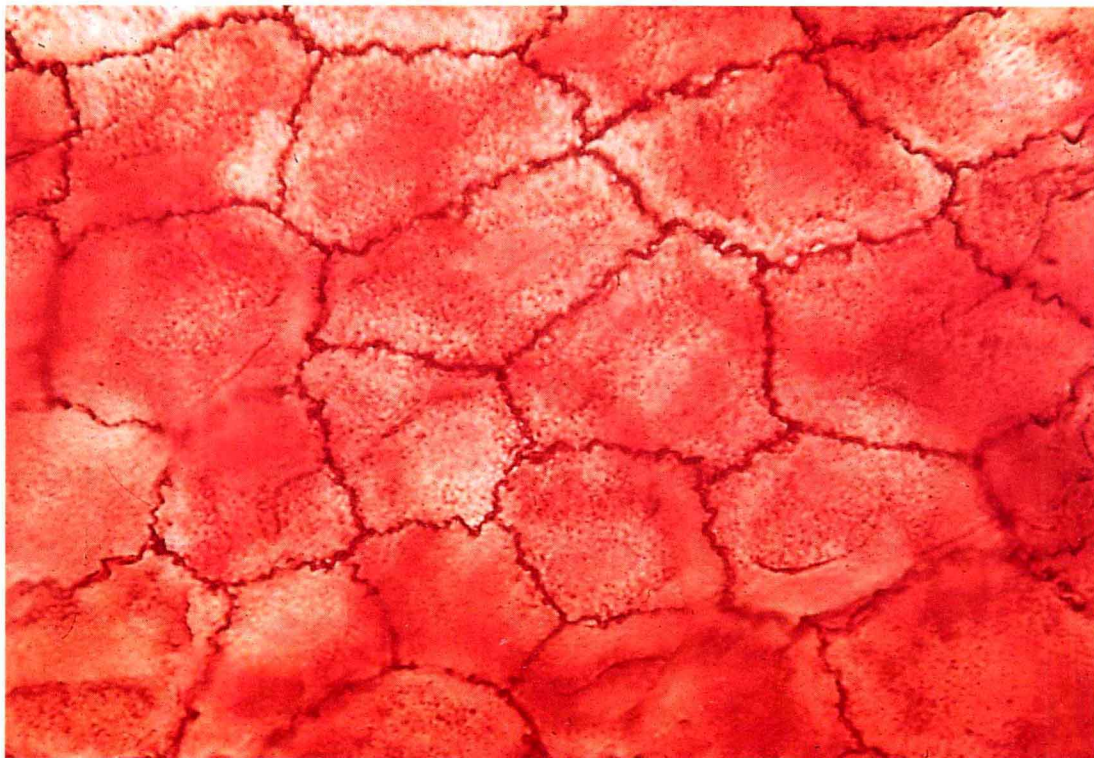


figure 1-2

FIGURE 1-3

Simple squamous epithelial cells (arrows) which line the lumen of blood vessels. This epithelium is also referred to as endothelium. $\times 869$.

FIGURE 1-4

Simple squamous epithelial cells (arrows) from the parietal layer of Bowman's capsule in a renal corpuscle. $\times 140$.

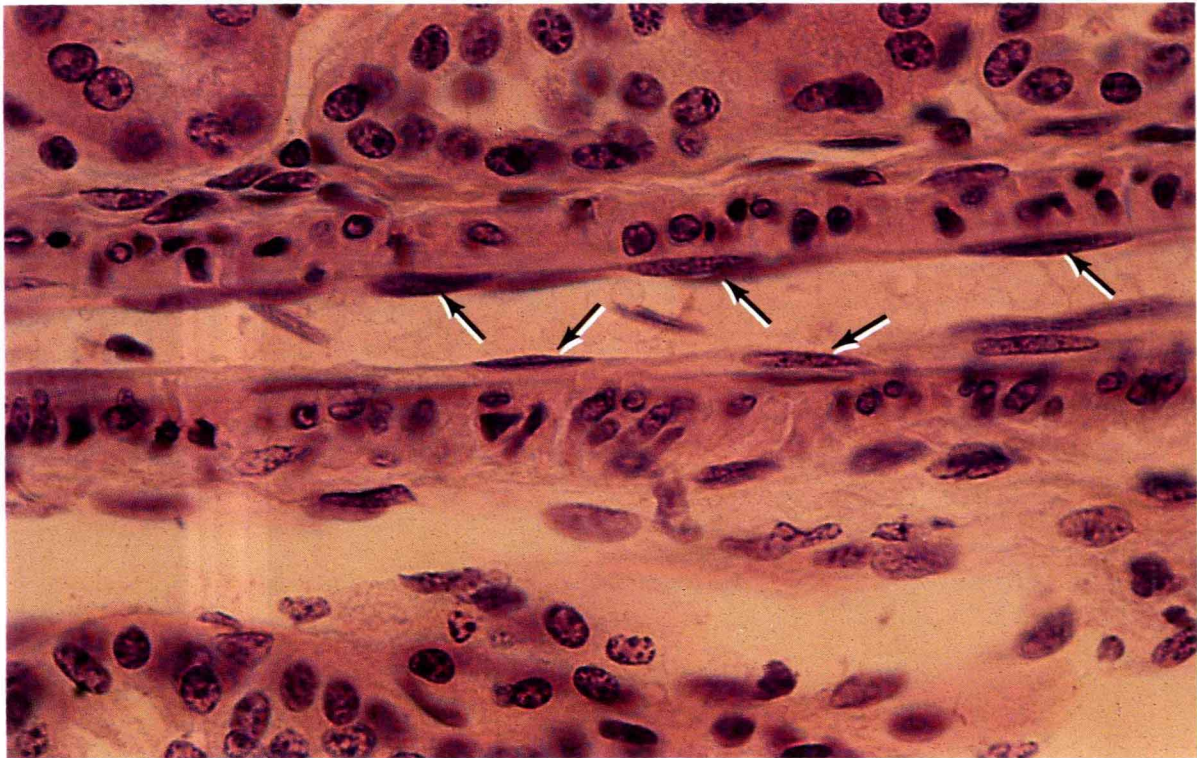


figure 1-3

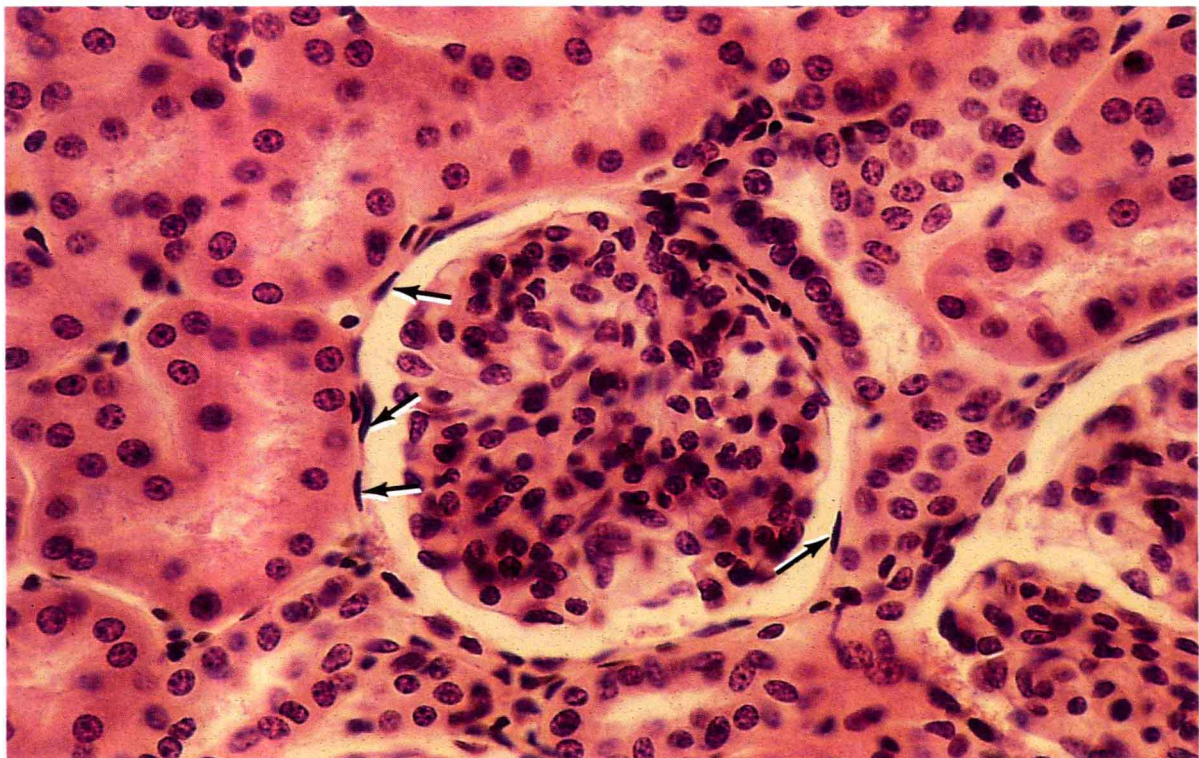


figure 1-4

FIGURE 1-5

Cuboidal epithelium of kidney collecting tubules in longitudinal and cross section (arrow). $\times 344$.

FIGURE 1-6

Cross section of the cuboidal epithelium of thyroid follicles. Note that in both cross and longitudinal sections, cuboidal cell height and width are approximately equal. $\times 344$.

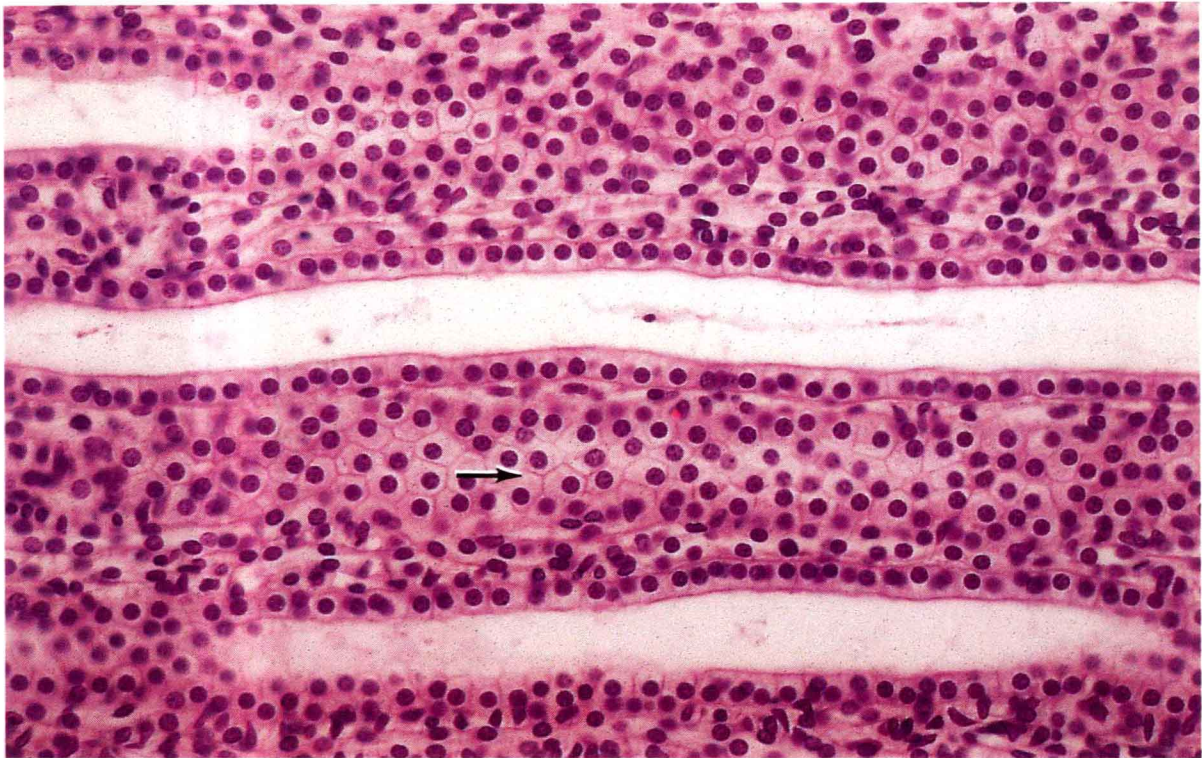


figure 1-5

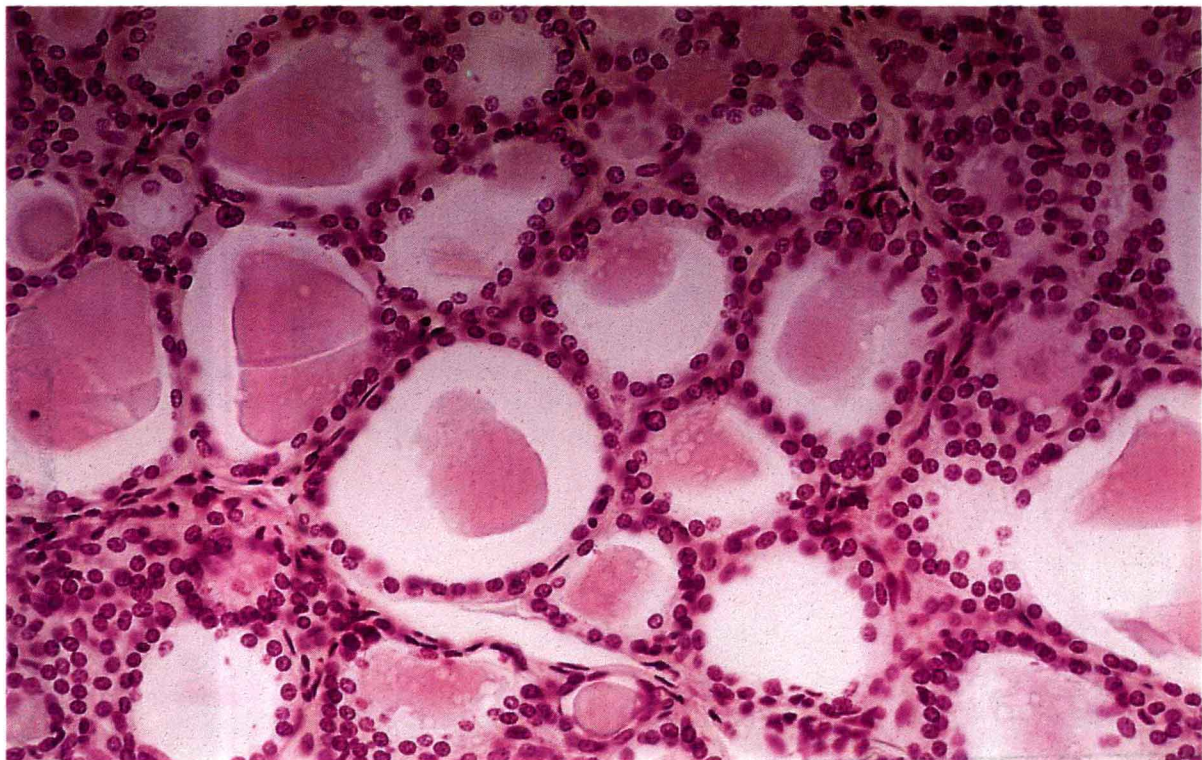


figure 1-6

FIGURE 1-7

Cross section of the cuboidal epithelium of the proximal convoluted tubules of the kidney. The microvillus (brush) border of these cells is not well preserved in fixation, which accounts for the fuzzy pinkish material within the tubule's lumen. $\times 344$.

FIGURE 1-8

Simple columnar epithelium of the gall bladder. The space between some cells is an artifact of slide preparation. Note the difference between the height and width of the cells and the basal location of nuclei in this type of epithelium. $\times 344$.

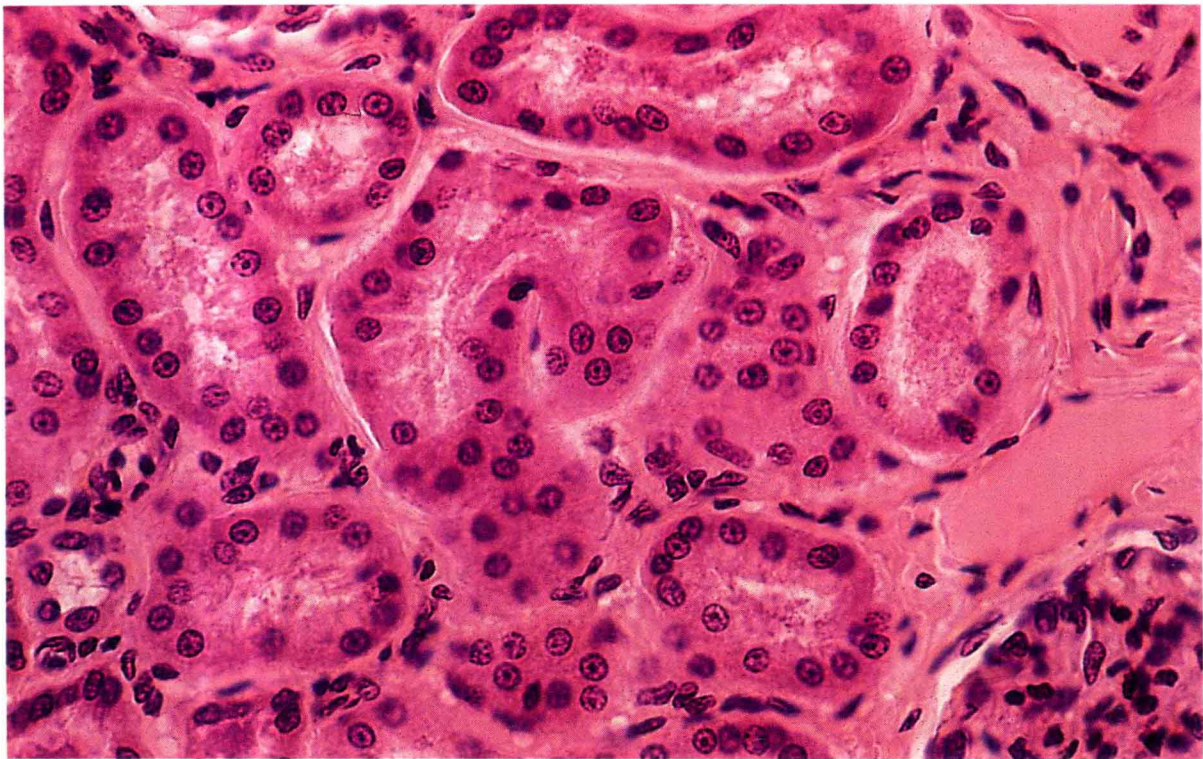


figure 1-7

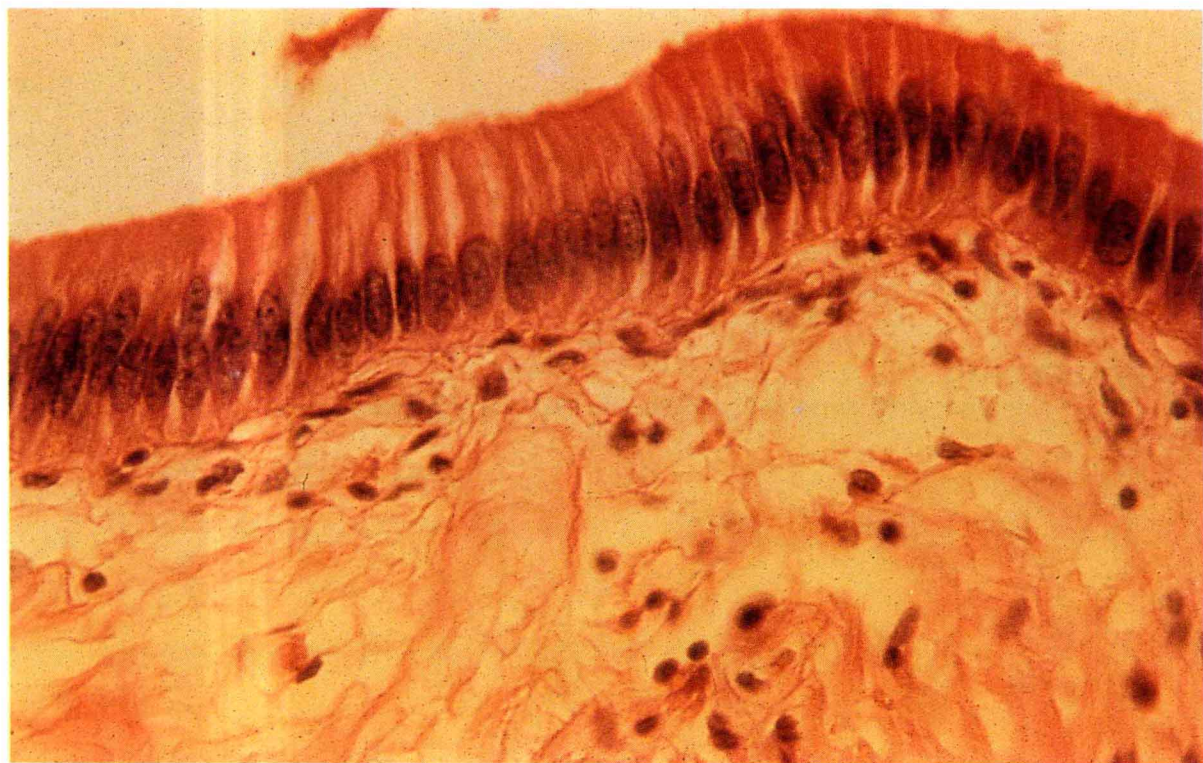


figure 1-8

FIGURE 1-9

Simple columnar epithelium of a kidney collecting duct resting on a thin basement membrane (arrows). $\times 560$.

FIGURE 1-10

Simple columnar epithelium with goblet cells (arrows) of the ileum. $\times 344$.



figure 1-9



figure 1-10

FIGURE 1-11

Pseudostratified columnar ciliated (arrows) epithelium of the trachea. Monkey; $\times 560$.

FIGURE 1-12

Nonkeratinized stratified squamous epithelium of the esophagus. Monkey; $\times 344$.

FIGURE 1-13

Stratified squamous keratinized (arrows) epithelium of thin skin. $\times 344$.

FIGURE 1-14

Transitional epithelium of the ureter. $\times 344$.