

TABLE OF CONTENTS

SECTION 1: INTRODUCTION TO NORMAL HISTOLOGY AND BASIC HISTOLOGICAL TECHNIQUES

- 4 **Introduction to the Cell**
Jerome B. Taxy, MD and Anthony Chang, MD
- 12 **Introduction to Histology**
Laura W. Lamps, MD and Matthew R. Lindberg, MD
- 22 **General Histologic Artifacts**
Matthew R. Lindberg, MD
- 24 **Histochemistry (Special Stains)**
Matthew R. Lindberg, MD and Laura W. Lamps, MD
- 28 **Immunohistochemistry of Normal Tissues**
Matthew R. Lindberg, MD and Laura W. Lamps, MD
- 32 **Immunofluorescence**
Anthony Chang, MD
- 36 **Electron Microscopy**
Anthony Chang, MD, Peter Pytel, MD, and Jerome B. Taxy, MD

SECTION 2: INTEGUMENT

- 42 **Epidermis (Including Keratinocytes and Melanocytes)**
David Cassarino, MD, PhD and Aaron Auerbach, MD, MPH
- 46 **Dermis**
David Cassarino, MD, PhD
- 50 **Adnexal Structures**
David Cassarino, MD, PhD
- 54 **Nail**
David Cassarino, MD, PhD and Aaron Auerbach, MD, MPH

SECTION 3: MUSCULOSKELETAL SYSTEM

- 58 **Bone and Cartilage**
Matthew R. Lindberg, MD
- 66 **Synovial Membrane**
Matthew R. Lindberg, MD
- 68 **Connective Tissue**
Matthew R. Lindberg, MD
- 72 **Adipose Tissue**
Cyril Fisher, MD, DSc, FRCPath
- 76 **Skeletal Muscle**
Matthew R. Lindberg, MD and Cyril Fisher, MD, DSc, FRCPath

SECTION 4: CIRCULATORY SYSTEM

- 84 **Heart**
Dylan V. Miller, MD
- 88 **Cardiac Valves**
Dylan V. Miller, MD

- 90 **Cardiac Conduction System**
Dylan V. Miller, MD
- 94 **Arteries**
Dylan V. Miller, MD
- 98 **Capillaries, Veins, and Lymphatics**
Dylan V. Miller, MD

SECTION 5: NERVOUS SYSTEM

- 104 **Peripheral Nervous System**
Alexandros D. Polydorides, MD, PhD
- 108 **Central Nervous System**
Alexandros D. Polydorides, MD, PhD
- 112 **Meninges**
Alexandros D. Polydorides, MD, PhD
- 114 **Choroid Plexus**
Alexandros D. Polydorides, MD, PhD

SECTION 6: HEMATOPOIETIC AND IMMUNE SYSTEMS

- 118 **Overview of Immune System**
Jeremy C. Wallentine, MD
- 122 **Lymph Nodes**
Jeremy C. Wallentine, MD
- 126 **Spleen**
Jeremy C. Wallentine, MD
- 130 **Bone Marrow**
Kathryn Foucar, MD
- 138 **Peripheral Blood**
Kathryn Foucar, MD
- 142 **Thymus**
Matthew R. Lindberg, MD

SECTION 7: HEAD AND NECK

- 148 **Eye and Ocular Adnexa**
Charles Matthew Quick, MD
- 158 **Oral Mucosae**
Brenda L. Nelson, DDS, MS
- 160 **Gingivae**
Brenda L. Nelson, DDS, MS
- 162 **Teeth**
Brenda L. Nelson, DDS, MS
- 166 **Tongue**
Jonathan B. McHugh, MD
- 170 **Tonsils/Adenoids**
Jonathan B. McHugh, MD
- 174 **Ear**
Jonathan B. McHugh, MD
- 178 **Nose and Paranasal Sinuses**
Jonathan B. McHugh, MD

TABLE OF CONTENTS

- 182 **Minor Salivary Glands**
Brenda L. Nelson, DDS, MS
- 184 **Major Salivary Glands**
Jonathan B. McHugh, MD
- 188 **Pharynx**
Jonathan B. McHugh, MD
- 190 **Larynx**
Jonathan B. McHugh, MD

SECTION 8: RESPIRATORY SYSTEM

- 196 **Trachea**
Matthew R. Lindberg, MD
- 198 **Lung**
Matthew R. Lindberg, MD
- 206 **Pleura and Pericardium**
Matthew R. Lindberg, MD

SECTION 9: BREAST

- 210 **Breast**
David G. Hicks, MD

SECTION 10: TUBULAR GUT AND PERITONEUM

- 218 **Esophagus**
Matthew R. Lindberg, MD
- 224 **Stomach**
Laura W. Lamps, MD and Matthew R. Lindberg, MD
- 232 **Small Intestine**
Laura W. Lamps, MD and Matthew R. Lindberg, MD
- 238 **Large Intestine**
Matthew R. Lindberg, MD
- 246 **Appendix**
Matthew R. Lindberg, MD
- 252 **Anus and Anal Canal**
Laura W. Lamps, MD
- 256 **Peritoneum**
Matthew R. Lindberg, MD

SECTION 11: HEPATOBILIARY TRACT AND PANCREAS

- 260 **Liver**
Laura W. Lamps, MD
- 268 **Gallbladder**
Laura W. Lamps, MD
- 272 **Extrahepatic Biliary Tract**
Laura W. Lamps, MD
- 276 **Vaterian System**
Laura W. Lamps, MD
- 278 **Pancreas**
Laura W. Lamps, MD

SECTION 12: GENITOURINARY AND MALE GENITAL TRACT

- 286 **Kidney**
Anthony Chang, MD
- 296 **Ureter and Renal Pelvis**
Jesse K. McKenney, MD

- 300 **Bladder**
Roni Michelle Cox, MD
- 306 **Urethra**
Jesse K. McKenney, MD
- 312 **Prostate: Regional Anatomy With Histologic Correlates**
Jesse K. McKenney, MD
- 322 **Prostate: Benign Glandular and Stromal Histology**
Jesse K. McKenney, MD
- 332 **Penis**
Roni Michelle Cox, MD
- 336 **Testis and Associated Excretory Ducts**
Roni Michelle Cox, MD

SECTION 13: FEMALE GENITAL TRACT

- 346 **Vulva**
Jesse K. McKenney, MD
- 350 **Vagina**
Jesse K. McKenney, MD
- 354 **Uterus**
Charles Matthew Quick, MD
- 368 **Fallopian Tube**
Charles Matthew Quick, MD
- 374 **Ovary**
Charles Matthew Quick, MD
- 384 **Placenta**
Charles Matthew Quick, MD

SECTION 14: ENDOCRINE

- 392 **Adrenal Gland**
Roni Michelle Cox, MD and Matthew R. Lindberg, MD
- 398 **Paraganglia**
Jesse K. McKenney, MD
- 400 **Thyroid**
Jonathan B. McHugh, MD
- 404 **Parathyroid**
Jonathan B. McHugh, MD
- 408 **Pineal Gland**
Alexandros D. Polydorides, MD, PhD
- 410 **Pituitary**
Alexandros D. Polydorides, MD, PhD