

TABLE OF CONTENTS

Pathology of Pet and Aviary Birds 3rd Edition

List of Contributors

Preface to the First Edition

Preface to the Second Edition

Preface to the Third Edition

Acknowledgments

1 Anatomy and Postmortem Examination 1

Dale Smith

Avian Anatomy 1

Postmortem Procedures 38

Additional Reading 63

2 Cardiovascular System 65

Shannon L. Donahoe

Congenital Anomalies 65

Pericardial

Disease 66

Heart

Disease 69

Vascular Disease 87

Additional

Reading 94

3 Respiratory System 97

Nicole M. Nemeth and Brittany McHale

Normal Structure 97

Upper

Respiratory Disease 98

Lower Respiratory Disease 115

Additional

Reading 139

4 Gastrointestinal System and Pancreas 143

Inga Sidor

Normal Microscopic Anatomy 143

Gastrointestinal Disease 144

Beak 144

Oral Cavity 147

Esophagus and Crop 154

Proventriculus 160

Ventriculus 166

Small and Large Intestines 170

Cloaca 185

Exocrine Pancreas 188

Additional Reading 193

5 Liver 197

Carmen Fareeda Jerry

Normal Anatomy 197

Congenital Disease 197

Infectious Disease 197

Noninfectious Disease 220

Gallbladder 229

Neoplasia 229

Non-neoplastic

Epithelial Proliferative Lesions 233

Additional Reading 234

6 Urinary System 239

Anna Kokosinska

Normal Structure 239

Systemic Effects of Renal Failure 239

Renal Disease 240

Additional Reading 259

7 Reproductive System 263

Anna Kokosinska

Male Reproductive System 263

Female Reproductive System 268

Additional Reading 288

8 Endocrine System 291

Dale Smith

Pituitary Gland 291

Thyroid Glands 292

Parathyroid Glands 296

Adrenal Glands 297

Pancreatic Islets 302

Ultimobranchial Bodies 303

Carotid Bodies, Aortic Bodies, Pineal Gland, and Gastrointestinal Endocrine System 303

Additional Reading 304

9 Lymphatic and Hematopoietic System 307

*Helene Pendl and Robert E. Schmidt*Normal

Structure 307

Immunity 309

Disease 311

Additional Reading 338

10 Musculoskeletal System 343

*Robert K. Kim*Skeletal

Muscle 343

Tendons and Ligaments 352

Bone and Cartilage 353

Disease of the Joints 365

Additional Reading 369

11 Nervous System 373

Jason D. Struthers and Robert E. Schmidt

Unique Anatomy of the Avian Neurological System 373

Central Nervous System 373

Peripheral Nervous System 398

Additional Reading 401

12 Integument 405

Shane Raidal

The Normal Anatomy of the Skin and Feathers 405

External Examination: Skin and Subcutis 406

Congenital and Acquired Malformations 406

Infectious Disease 408

Noninfectious Disease 422

Additional Reading 436

13 Special Sense Organs 439

Robert E. Schmidt and Jason D. Struthers

Eye 439

Ear 457

Olfactory/Taste Organs 461

Somatosensory Receptors 461

Additional Reading 462

14 Peritoneum and Mesenteries 465

Elise E. B. LaDouceur and Drury R. Reavill

Structure 465

Effusions 466

Inflammatory Disease 467

Infectious Disease 467

Noninfectious Diseases 472

Additional Reading 478

15 Doves and Pigeons 481

Jason D. Struthers

Congenital Diseases 482

Infectious Diseases 482

Non-infectious

Conditions 501

Additional Reading 509

16 Passerine Birds 513

Robert E. Schmidt

Normal Structure 513

Congenital Disease 513

Infectious Disease 514

Noninfectious Disease 540

Neoplasia 548

Non-neoplastic

Proliferative Lesions 554

Additional Reading 555

17 Raptors 563

Nicole M. Nemeth

Normal Structure 563

Congenital Malformations 563

Infectious Disease 566

Parasites 577

Noninfectious Disease 586

Neoplastic Disease 594

Miscellaneous 594

Additional Reading 596

18 Cytology 601

Helene Pendl and Peter M. Wencel

Part I: Normal Cytology 602

Part II: Diagnostic Cytology 611

Additional Reading 647

19 Advanced Diagnostics 649

Luisa H. M. Miranda, Marina Gimeno, Shannon L. Donahoe, and Robert Dahlhausen

Introduction 649

Special Histologic Stains Used as Ancillary Diagnostic Testing in Avian Species 649

Immunohistochemistry 650

In Situ Hybridization 653

Molecular Diagnostics 690

Targeted Molecular Diagnostics 691

Sequencing Technologies 701

Future Diagnostics 702

Additional Reading 709

Index 721.