Chelonian Anatomy

DAWN WITHERINGTON • JEANETTE WYNEKEN

TO DEVELOP A SERIES OF CHELONIAN anatomic illustrations, the adult slider turtle (*Trachemys scripta*) was chosen as the representative species for dissection. The slider is a common species worldwide. A native of North America, it has been introduced on all continents except Antarctica. The species is not only a common pet species but, because of its widespread distribution (ability to thrive in urban as well as rural settings), is also increasingly seen in wildlife rehab situations. The species is also an animal model for physiological and medical research.

The body layout of the slider is representative of most turtles and tortoises. Like all turtles, the shoulders and hips are housed within the modified rib cage (the shell). Bones and muscles are very similar among turtle and tortoise species. The retractable neck and limbs are accommodated by long and flexible arteries and veins, which bend or even coil when the head or limbs are retracted. Because of the unique shape and form of chelonians, the viscera that occur in all vertebrates are packed into a somewhat oval space. The “packing” of the organs within the confines of the box-like shell results in their positioning being somewhat different from that of the more familiar high vertebrates. The urogenital system of the slider is typical of many turtles but not all (e.g., some tortoises and marine turtles).

For more specialized information, the reader is referred to other resources, such as the upcoming *The Anatomy of Reptiles*, by J. Wyneken (in preparation for Krieger Publishing).

Acknowledgements

Specimens for dissection were donated by R. Funk, PL. Lutz, C. Johnson, J. Weege, ARAV wet labs and Glades Herp.
Gastrointestinal

ESOPHAGUS
TRACHEA
STOMACH (REFLECTED ANTERIORLY AND VENTRALLY)
PANCREAS
LIVER (LEFT LOBE)
LIVER (RIGHT LOBE)
Spleen
PERITONEUM
LARGE INTESTINE
SMALL INTESTINE
LUNG (INFLATED)
BLADDER (FULL)
DEEP PELVIC MUSCLE MASS
CLOACA
Gastrointestinal

- ESOPHAGUS
- TRACHEA
- STOMACH (REFLECTED ANTERIORLY AND VENTRALLY)
- PANCREAS
- LIVER (LEFT LOBE)
- LIVER (RIGHT LOBE)
- SPLEEN
- PERITONEUM
- LARGE INTESTINE
- SMALL INTESTINE
- LUNG (INFLATED)
- BLADDER (FULL)
- DEEP PELVIC MUSCLE MASS
- CLOACA
BSAVA Manual of Exotic Pets, Fourth Edition
Edited by Anna Meredith and Sharon Redrobe

The fourth edition of the Manual of Exotic Pets is the latest incarnation of an all-time best-seller last revised in 1991. The manual involves contributions by 30 authors from the US and the UK and contains many updates.

Mammals addressed are rats and mice, hamsters, gerbils, chipmunks, guinea pigs, chinchillas, rabbits, ferrets, primates, fancy pigs and other small mammals (sugar gliders, prairie dogs, African pygmy hedgehogs, South American short-tailed opossums, degus, and duprasi). Each species chapter includes biology, husbandry, handling and restraint, diagnostic approach, common conditions, supportive care, anesthesia and analgesia, common surgical procedures, euthanasia, drug formulation, and references/further reading.

Avian topics cover cage and aviary birds, pigeons and birds of prey. A reptile and amphibian anatomy and imaging chapter has been added to those found in previous editions (tortoises and turtles, lizards, snakes, and amphibians). The book ends with ornamental fish, invertebrates and British legislation.

On the Plus Side
This fourth edition is more visually oriented than the previous ones. The illustrations are very good, and color pictures are provided throughout. Species chapters are organized in a similar manner, making it easy to find what you are looking for. The text often includes recommendations such as a drug dosage or catheter size, saving the clinician time. Important points are highlighted in red. Wherever possible (e.g., biological data, reference ranges), information is presented in easy-to-read, color-coded charts. Bibliographies are extensive. Special idiosyncrasies of various species are emphasized.

Sections on radiography include radiographs of normal anatomy with the abnormal for comparison. Radiographs are generally of excellent quality. The index is well organized so that cross-referencing is possible.

On the Minus Side
As expected, some of the drugs mentioned in this handbook are not available in the US, and there are some spelling and terminology differences.

The chapter on rats and mice discusses the link between mammary tumors and hormonal stimulation in rats but does not discuss prevention by ovariophysterectomy. The reference values for blood tests in chinchillas were incomplete. Cuterbiases is not discussed in the chapter on rabbits. Waterfowl, rats, and backyard poultry are not covered in this manual. The chapter on invertebrates is informative but very general and contains no practical or hands-on information. British legislation is irrelevant to practitioners elsewhere.

Leaving in this edition the temperature, weight, volume and measurement conversion tables that were removed, and adding conversion tables for blood work values would have been helpful.

Add to Bookshelf?
The Manual of Exotic Pets 4th edition is an excellent overall quick-reference text for clinicians. It represents a vast improvement over the previous version. It provides a thorough overview for diagnosing and treating diseases of the most common exotic animal species presented in practice. The information is current, very well organized and easy to access. An excellent reference for novice and experienced clinicians alike, this manual will also be extremely useful for vet students and zoo, wildlife and laboratory veterinarians.

Reviewed by Dan Johnson, DVM
Avian and Exotic Animal Care, Raleigh, North Carolina