

Chelonian Anatomy

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Dawn Witherington graduated with awards from the Art Institute of Ft. Lauderdale and received biological training from the University of Central Florida. She is a graphic design artist and illustrator with professional interests in wildlife images and biological illustration. During a 23-year career as a professional artist, Dawn worked as art director for a number of advertising agencies before establishing her own freelance studio. For samples of her work, including her "Deep End Greetings" cards, go to <www.drawnbydawn.com>.



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Dr. Wyneken received her PhD in Biology from the Department of Ecology, Ethology and Evolution, University of Illinois, in 1988. Her dissertation title was "Comparative and Functional Considerations of Locomotion in Turtles." In addition to training graduate and undergraduate students at Florida Atlantic University, she teaches conservation and biology of sea turtles at Harbor Branch Oceanographic Institution and Duke University Marine Laboratory. She is a frequent author and speaker, educating through peer-reviewed research publications, book contributions, professional seminars and invited presentations to the public.

Wyneken and Witherington created *The Anatomy of Sea Turtles* book and CD, which were produced by the US Department of Commerce National Oceanic and Atmosphere Administration (NOAA).

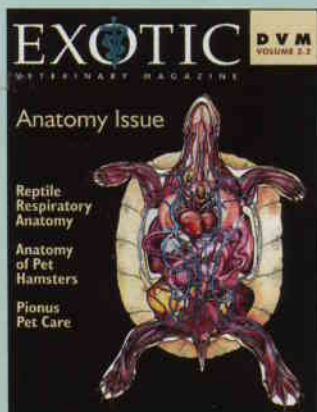
TO DEVELOP A SERIES OF CHELONIAN anatomic illustrations, the adult slider turtle (*Trachemys scripta*) was chosen as the representative species for dissection. The slider is a common species worldwide. A native of North America, it has been introduced on all continents except Antarctica. The species 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).

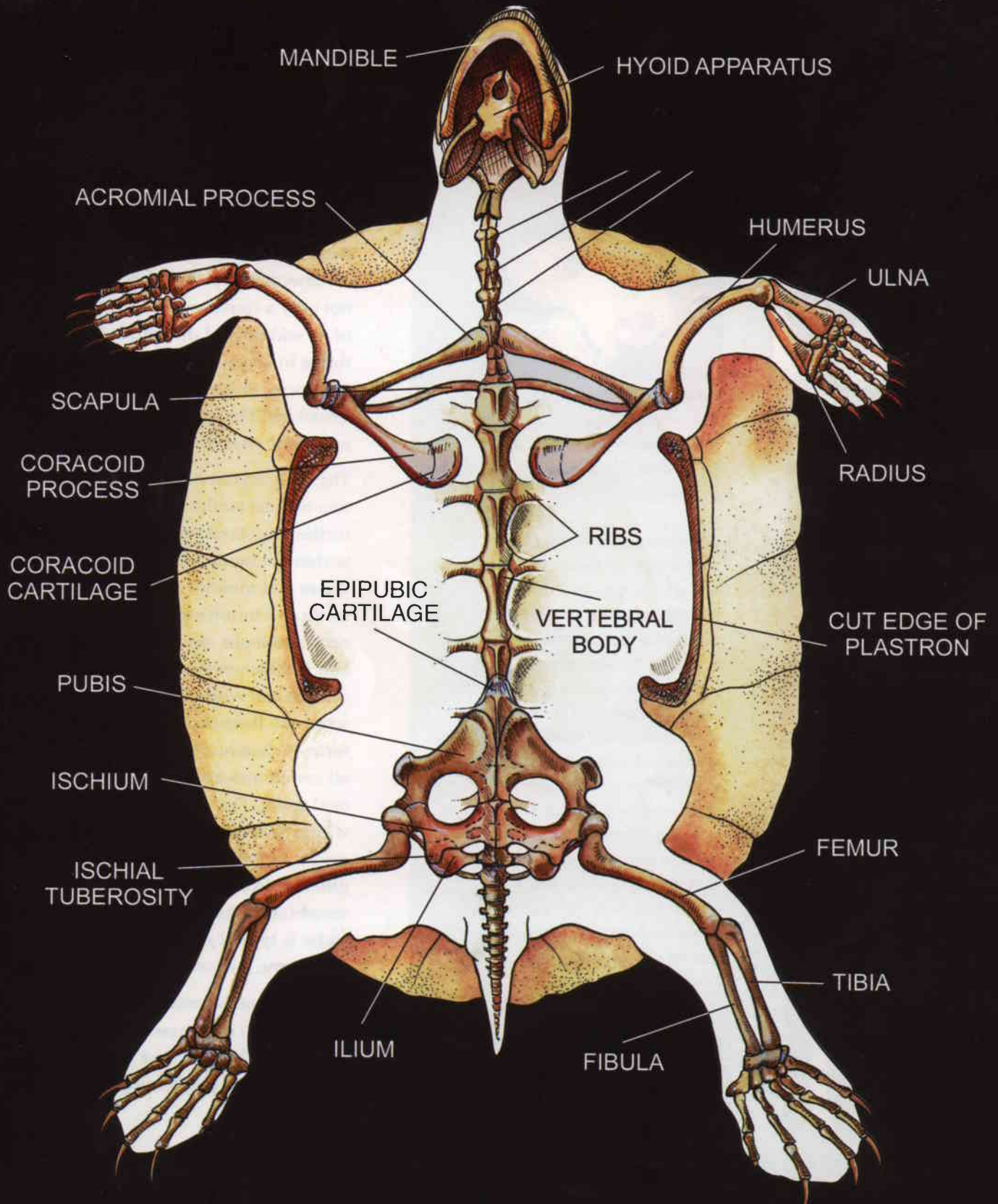
Acknowledgements

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Skeletal





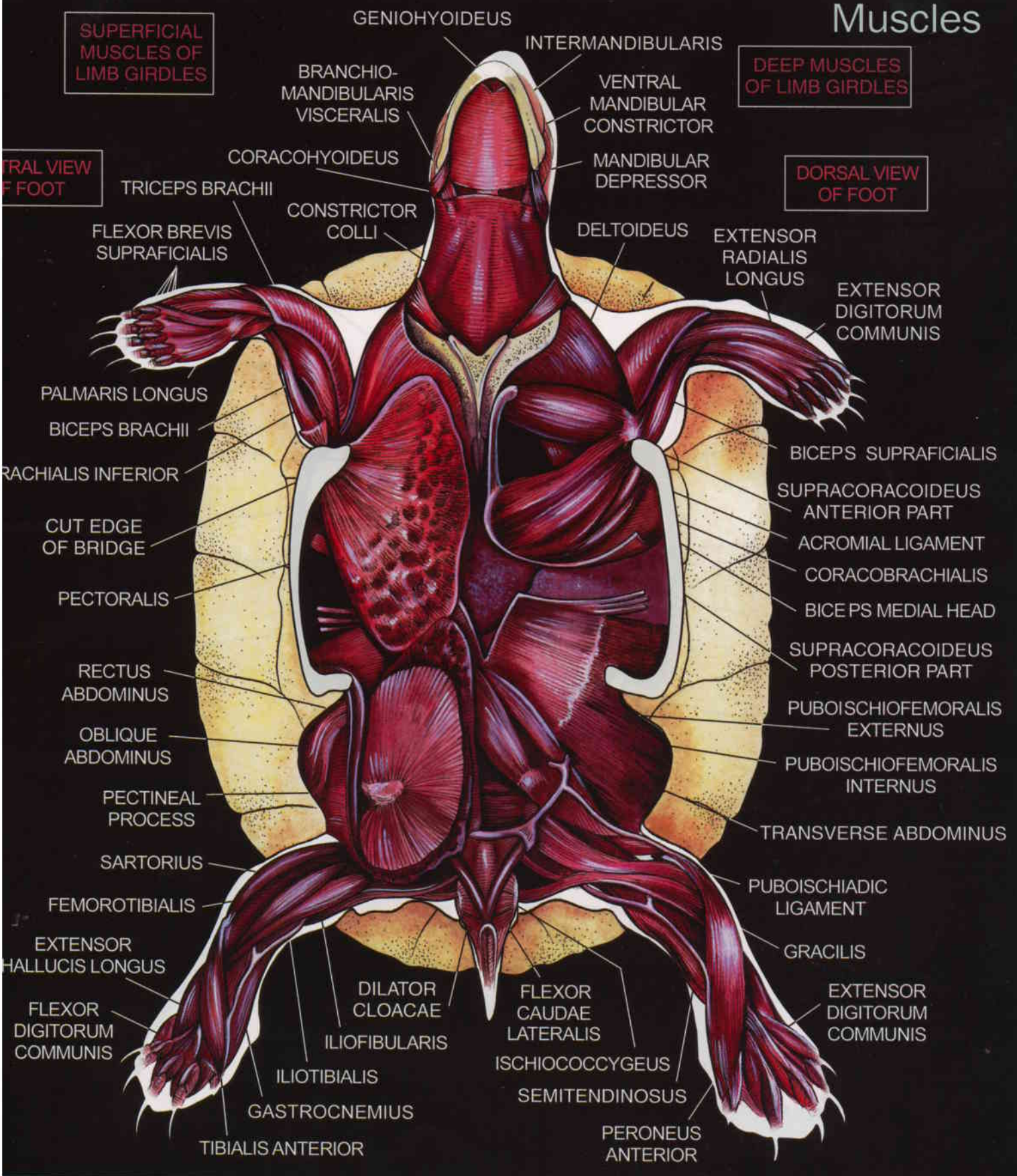
Muscles

**SUPERFICIAL
MUSCLES OF
LIMB GIRDLES**

**DEEP MUSCLES
OF LIMB GIRDLES**

**VENTRAL VIEW
OF FOOT**

**DORSAL VIEW
OF FOOT**



GENIOHYOIDEUS

INTERMANDIBULARIS

BRANCHIO-
MANDIBULARIS
VISCERALIS

VENTRAL
MANDIBULAR
CONSTRICTOR

CORACOHYOIDEUS

MANDIBULAR
DEPRESSOR

TRICEPS BRACHII

CONSTRICTOR
COLLI

DELTOIDEUS

EXTENSOR
RADIALIS
LONGUS

EXTENSOR
DIGITORUM
COMMUNIS

FLEXOR BREVIS
SUPRAFICIALIS

PALMARIS LONGUS

BICEPS BRACHII

BICEPS SUPRAFICIALIS

SUPRACORACOIDEUS
ANTERIOR PART

ACROMIAL LIGAMENT

CORACOBACHIALIS

BICEPS MEDIAL HEAD

SUPRACORACOIDEUS
POSTERIOR PART

PUBOISCHIOFEMORALIS
EXTERNUS

PUBOISCHIOFEMORALIS
INTERNUS

TRANSVERSE ABDOMINUS

CUT EDGE
OF BRIDGE

PECTORALIS

RECTUS
ABDOMINUS

OBLIQUE
ABDOMINUS

PECTINEAL
PROCESS

SARTORIUS

FEMOROTIBIALIS

PUBOISCHIADIC
LIGAMENT

GRACILIS

EXTENSOR
HALLUCIS LONGUS

FLEXOR
DIGITORUM
COMMUNIS

DILATOR
CLOACAE

ILIOFIBULARIS

ILIOTIBIALIS

GASTROCNEMIUS

TIBIALIS ANTERIOR

FLEXOR
CAUDAE
LATERALIS

ISCHIOCOCCYGEUS

SEMITENDINOSUS

PERONEUS
ANTERIOR

EXTENSOR
DIGITORUM
COMMUNIS