

Chapter 26
Animals: The Vertebrates
I. The Chordate Heritage

A. Chordates and deuterostomes

- 1. The phylum _____ consists of a majority of species that are vertebrates and a minority that are invertebrate chordates.
- 2. The phylum is divided into three subphyla;
- 3. All chordates at some time in their lives, have four distinctive features:
 - » a. A _____ is a _____ that supports the body; later it changes to bony units in vertebrates.
 - » b. A _____ lies above the notochord and gut.
 - » c. A muscular _____ with gill slits is positioned at the entrance to the digestive tract.
 - » d. A _____, or rudiment thereof, exists near the anus.

B. Subphylum Urochordata

■ 1. Tunicates or sea squirts, are

- a. The larval stage resembles a _____ and has a _____ in the tail.
- b. _____ to the adult results in a _____, a regression of the nerve cord, and an expansion of the pharynx for *filter feeding*.

- The adult is a _____ filter-feeder, maintaining a constant flow of water through the gill slits into the body to bring in food particles and oxygen and carry away wastes.

C. Subphylum Cephalochordata

- 1. _____ are small, fishlike animals with tapered bodies.

- a.

- 2. Lancelets display

II. Subphylum Vertebrata

■ A. Class Agnatha

- 1.

- 2. A notochord and cartilaginous skeleton are present.

(a) Examples

- 1. _____ – scavengers that look like large worms with “feelers” around the mouth.

-

- 2. _____-parasitic on other fish, attaching to them with an oral, suckerlike disk.

B. Class Chondrichthyes

- 1. _____ possess a streamlined body with a cartilaginous endoskeleton, gill slits, fins and small scales on the body surface.

(a) Examples

C. Class Osteichthyes

- 1. Most bony fishes are _____.
 - The highly maneuverable fins are supported by rays that originate from the dermis.

D. Class Amphibia

- 1. All have _____ and usually four legs
- 2. Most _____, which is also home to a free swimming larval stage.
- 3. Depending on their habitat, amphibians can _____, lungs, skin, and pharyngeal lining.
- 4. Their skin is usually _____ and sometimes supplied with glands that produce toxins.

(a) Examples

- 1. _____ – excellent prey-grasping capability of the tongue
- Distinctive long _____ with powerful muscles.
- 2.
- Adults may retain _____ including gills and tail.

E. Class Reptilia

- 1. Produce _____ with covering membranes and a shell, which allow the eggs to be laid in dry habitats.
- 2. Possess a _____ or scaly skin that is resistant to drying
-
- 3. Possess a copulatory organ that permits internal fertilization
- 4. Their kidneys are
-
- (a) Examples
- 1.
- Distinctive shell offers and body heat.
- Lay their eggs _____, where predation is high.
- 2.
- Most are small-bodied insect eaters.
- Have unique
-
- 3. _____ – limbless, swallow prey larger than they are due to flexible skull and jaw bones.
- 4. _____ – long snout, body temperature is regulated behaviorally (ectothermic)

F. Class Aves

- 1. Birds apparently evolved from _____.

– Birds still resemble _____: horny beaks, scaly legs, and egg-laying

■ 2. Body Plan

- Covered with feathers—helpful in flight and insulation
- Bones are lightweight because of air cavities

G. Class Mammalia

■ 1. Brain capacity is

■ 2.

■ 3. Hair covers at least part of the body

■ 4. Dentition is extensive and specialized to meet dietary habits.

H. Portfolio of Existing Mammals

■ A. The lineages of mammals are examples of convergent evolution.

– 1. The _____, which survive today in Australia, differ from other mammals in these ways:

- » They are practically toothless
- » Metabolic rates are lower

»

■ 2. The _____ found in Australia and in North America are distinctive in that they young are born tiny, blind and hairless but find their way to the mother's pouch where they are suckled and finish their development.

■ 3. _____ are found in virtually every aquatic and terrestrial environment.

– The _____ by the placenta—a composite of maternal and fetal tissue

