

ZOOLOGY 101 SECTION 15 LECTURE NOTES

Birds

Phylum Chordata

Subphylum Vertebrata (Craniata)

Class Aves: birds

~ 9100 species

- Descendents of dinosaurs? Are they a Theropod or Crocodylia

Characteristics of the birds:

- Adaptations for flight (modified appendages)
- Feathers
- Endothermy
- High metabolic rate
- A vertebral column modified for flight
- A lightened skeleton
- Lack teeth, highly diversified, horny bill
- Fertilization internal

External Structure and Locomotion:

- Two types of feathers:
 - Pennaceous feathers (flight feathers)
 - Plumulaceous feathers (down feathers)
- Feather structure
 - Vane, rachis, barb, barbule
- Molting
- Skeleton
- Muscles
- Flight!!!

- Mechanics of airflow and the airfoil
- Drag, Lift, Pressure Zones and Turbulence

Nutrition and Digestion

- Esophagus → Crop → Proventriculus → Ventriculus (Gizzard) → Intestine → Cloaca
- Accessory organs: Liver and Pancreas

Circulation, Gas Exchange, and Temperature Regulation

- Gas Exchange!!!! Very unique.
 - Air flows through the parabronchi during both inspiration and expiration
 - Continuous air flow through lungs
- Thermoregulation

Nervous and Sensory Systems

Excretion and Water Regulation

Reproduction and Development

- Usually only one ovary develops (left one)
- Monogamy, Polygamy, Polyandry
- Clutch
- Altricial vs precocial development

Migration and Navigation