**Practical 3**

**Anatomy of the Domestic Chicken**

**Objectives**

Be able to:

1. Identify the external parts of the bird
2. Identify the internal parts of the bird

**Activities**

1. Examine adult male / female bird for general description of surfaces
2. Sacrifice and dissect male /female bird
3. Examine internal organs and systems.

**Equipment required**

Dissecting tray, blunt tip forceps, fine point forceps, flexible probe, dissecting needles, scissors.

General points

1. Pay attention to other students dissections as they may show variance or structural anomalies compared to your specimen.
2. Check with instructor if uncertain of what you have found.
3. General description of the surfaces.

**External Anatomy**

Body is divided into 3 main regions

1. Head:

The head is attached to the trunk by a long flexible neck.

Major features: beak, external nares, comb, eyes and eyelids, wattles, ear lobes, external and auditory meatus (ear openings).

1. Trunk:

Divided into two main regions thorax (chest, and abdomen. Each of thes regions bears appendages:

Thorax: pectoral girdle and wings

Abdomen: pelvic girdle and legs

1. Tail:

On anterior dorsal surface find the small oil secreting gland (uropygial gland).

On ventral surface find transverse slit- inside the slit is a cavity called the cloaca into which opens the large intestine and reproductive tubes.

1. Integument:

The integument is the body covering and consist of the skin and its derivatives- scales, feathers, claws and beak covering.

The basic skin cover is thin and loose; and has no glands except for the uropyial gland.

Except for the legs and feet, which have scales the body is covered in feathers. There are three main types of feathers:

1. Large contour feathers- common type.
2. Fluffy down feathers or plumules.
3. Hair like filo plumes.

Contour feathers consist of a central shaft and lateral vanes.

Bird feathers occur in definite tracts or pterylae on the skin.

Student Work:

1. Wet carcass and feathers
2. Remove feathers from one side of the carcass.
3. Draw a diagram of you carcass shading in main feather tracts (shown by pits in skin called follicles from which feathers grow).

**Skeletal System**:

 The skeletal system of the bird is light and many of its bones are hollow. Some of the bones are fused which increases the skeletal strength.

 There are two main groups of bones:

1. Axial skeleton: skull, vertebrae, ribs, sternum, and hyoid apparatus.
2. Appendicular skeleton: pectoral girdle and anterior limbs, pelvic girdle, posterior limb.

Student work:

1. Examine bird skeleton and your carcass to identify where major joints occur.
2. Identify position of keel bone, clavicles, femur, and humerus.

**Muscular System**:

Muscles are modified for both flight and bipedal locomotion on the ground. Most of the muscles are enclosed in a sheath of connective tissue called fascia and can be separated as complete units.

Students work:

1. Remove carefully all the skin from one side of the body wing and legs.
2. Examine muscles and attachment to skeleton.

**Digestive System:**

1. Head and Neck- hard palate, internal nares, pharynx, esophagus, crop
2. Abdominal cavity, digestive tract and glands: Liver, gall bladder, proventriculus, gizzard, duodenum, pancreas, ileum, large intestine, colio caeca, cloaca, spleen.

Student work:

1. Remove rest of the skin from neck.
2. Cut through angle of the jaw to open it.
3. Examine and identify parts in the mouth.
4. Examine and identify structures in neck.
5. Cut through pectoral muscles along one side of the midline and continue through the abdominal wall to the anus. Cut through the sternum.
6. Separate out the digestive system, identify parts and draw a labeled diagram.
7. Remove gizzard and cut it in half to examine internal aspects.
8. Dissect cloaca and identify openings.

**Respiratory System**:

This is composed of those organs which deal with breathing. It is made of two related organ system:

1. Respiratory structures and accessory organs: External nares, internal nares, pharynx, larynx, trachea, bronchi, lungs.
2. Air sacs: cervical sac, intraclavicular sac, anterior intermediate sac, posterior intermediate sac, abdominal sac.

Student work:

1. Try and identify air sacs.
2. Identify major respiratory structures and draw a labeled diagram.

**Uro-genital System**:

Kidneys, ureters, and cloaca.

Reproductive System:

Male: Testes, vasa deferentia.

Female: Left ovary, left oviduct: infundibulum, magnum, isthmus, uterus (shell gland), and vagina, cloaca, vent.

Student Work:

Identify and examine the reproductive structures.

**LAB REPORT** **3**

**Anatomy of the Domestic Chicken**

Name: …………………………………….

ID NO: ……………………………………

Section: …………..

**ANSWER THE FOLLOWING QUESTIONS:**

1. Draw a diagram of a bird's head and label parts.
2. Draw a labeled diagram of the chicken's digestive system.
3. Draw a labeled diagram of the major bones of the bird's skeletal system.
4. Draw a labeled diagram of the reproductive system of the laying hen. State one function for each segment. How long an egg stays in each segment?
5. Draw a labeled diagram respiratory structures.

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