

## Lecture Outline

### EXTERNAL ANATOMY

#### I. The Integument

##### A. Structure

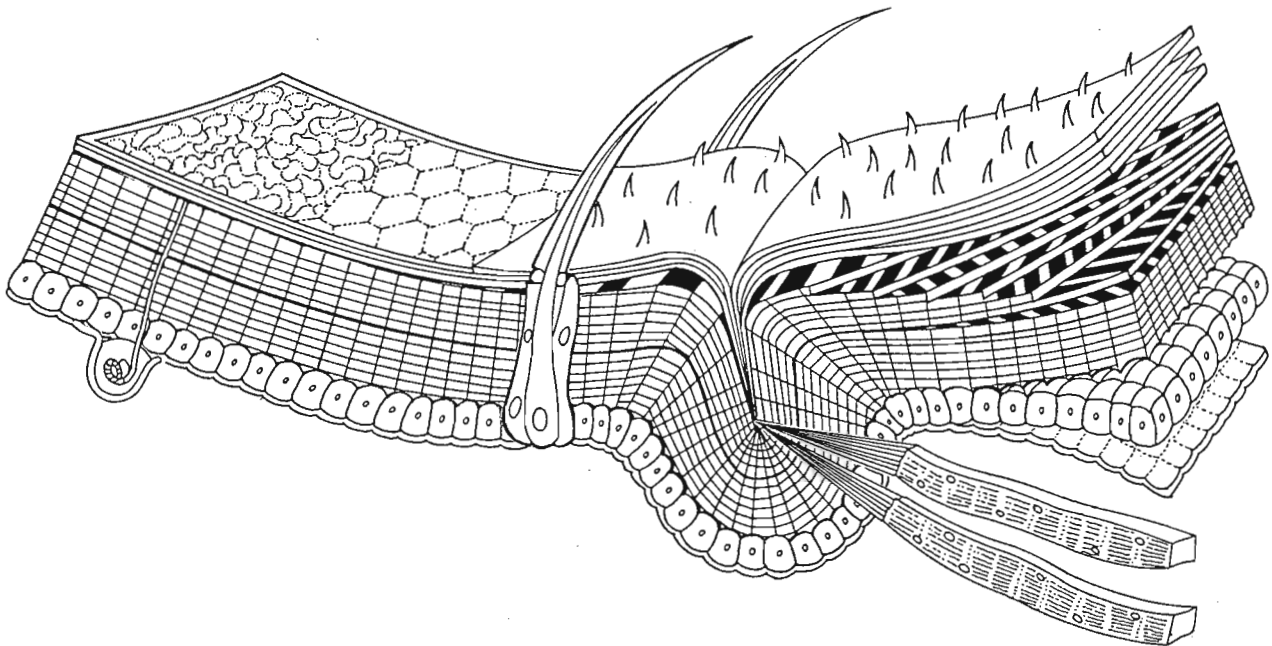
1. basement membrane
2. epidermis
3. procuticle -- endocuticle and exocuticle
4. epicuticle -- cuticulin, wax, and cement layers
5. sclerites and sutures
6. membranes
7. apodemes and apophyses
8. setae, scales, spines, spurs, and pile

##### B. Functions

1. containment
2. muscle support
3. water conservation
4. armor
5. sensation
6. excretion

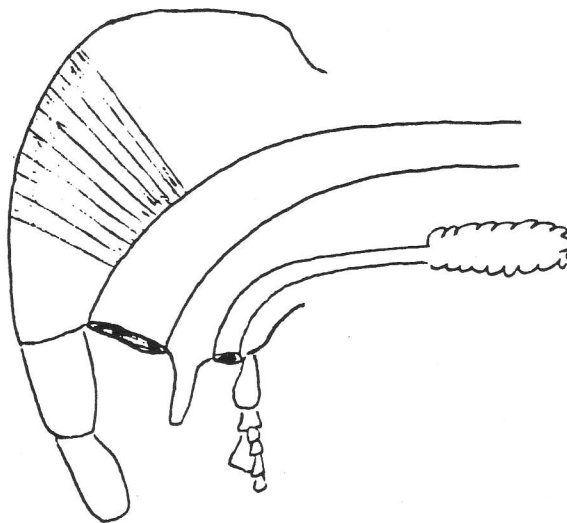
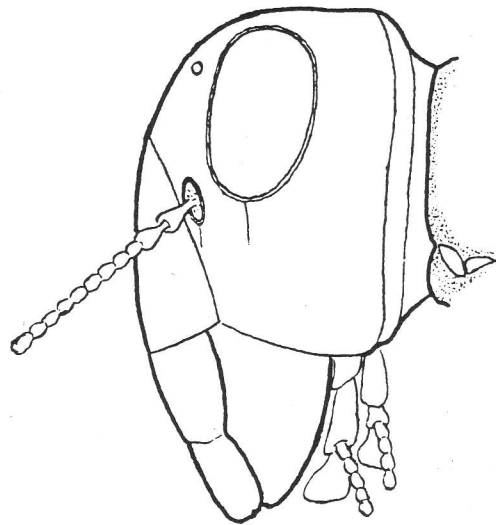
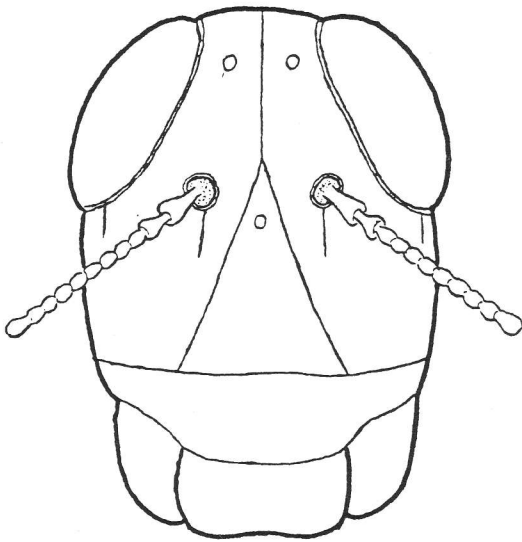
##### C. Tagmata

- A. head -- ingestion and sensation
- B. thorax -- locomotion
- C. abdomen -- homeostasis and reproduction



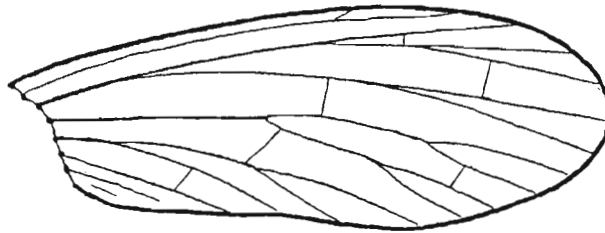
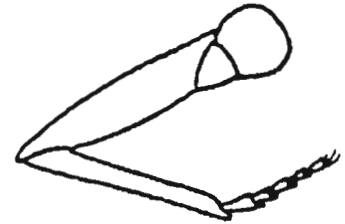
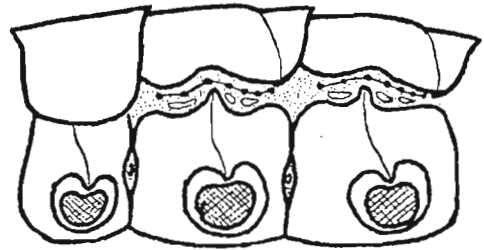
## II. The Head Capsule

- A. General Form -- sclerites and sutures
- B. Tentorium
- C. Mouthparts
  - 1. mandibulate type
  - 2. haustellate types
- D. Antennae
  - 1. scape, pedicel, flagellum
  - 2. modifications



### III. The Thorax

- A. Pro-, Meso-, Meta-
- B. Notum, Sternum, Pleuron
- C. Furca
- D. Legs
  - 1. structure
    - a. coxa
    - b. trochanter
    - c. femur
    - d. tibia
    - e. tarsus and pretarsus
  - 2. tripod gait
- E. Wings
  - 1. structure and venation
  - 2. mechanics of flight



### IV. The Abdomen

- A. Cerci
- B. Epiproct and paraprocts
- C. External genitalia
  - 1. Male -- aedeagus
  - 2. Female -- ovipositor

