

## LABORATORY EXERCISE 6: Integument and Head

### Ingrowths of the Integument

#### A) Tentorium:

Hold a specimen of *Romalea*, *Periplaneta*, *Blaberus* or *Gromphadorhina* firmly with one hand and cut away the integument of the front of the head, as shown in Imms (figure 3) or Gillott (fig. 3.5). Lift off the piece of integument with forceps and carefully remove muscle and nerve tissue from the cranium exposing the **tentorium** -- the internal "endoskeleton" of the head, shaped like a slightly reflexed (bent) "H". Make a sketch (**Drawing #8**) (diagrammatic) of this as you see it in *Romalea*, *Periplaneta*, *Blaberus* or *Gromphadorhina* labeling the anterior and posterior tentorial arms (these are apophyses), the tentorial body (corporotentorium), the occipital foramen, and (if you are lucky and a skilled dissector) the dorsal tentorial arms (additional apophyses). A demonstration dissection of the tentorium is set up under a scope.

#### B) Endoskeleton of Thorax:

If you feel you have time: using a newly-killed or preserved specimen of *Periplaneta americana* (the American cockroach), *Gromphadorhina portentosa* (the Madagascar hissing cockroach), or other roach, cut away the dorsal integument of the meso- and metathorax of the insect and remove this piece by pulling it away from the body. In most flying insects the intersegmental fold has been extended and thickened to form a powerful **phragma**, to which the large dorsal longitudinal muscles (associated with powers of flight) are attached; however these are poorly developed in roaches, which are generally weak fliers. Removal from the thoracic cavity of the muscles and other soft tissues will expose the **sternal apophyses** and **spinae** (Imms, fig. 14-15; Romoser, fig. 2-17; Gillott, fig. 3.19 and 3.20), together with the laterally located **pleural ridges**. These will be seen clearly during later dissections of the nervous and digestive systems.

### The Insect Head -- Part 1.

#### General Structure:

Compare the shape of the head and its position with respect to the body in a cockroach (**hypognathous**) with that of a ground beetle (**prognathous** for predation -- family Carabidae, order Coleoptera) and a bug (**opisthognathous** for sucking -- family Cicadidae, suborder Homoptera, order Hemiptera). Also see the demonstration specimens of various insect head types.