

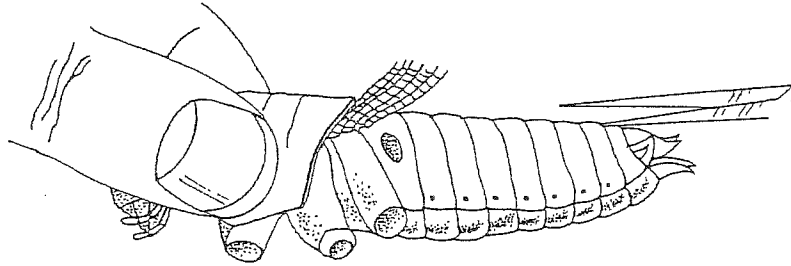
## Dissecting an Insect: the Grasshopper (Continued)

# 48

### PROCEDURE B

#### THE INTERNAL ANATOMY OF THE GRASSHOPPER

1. Cut off the legs and wings from the grasshopper. Use scissors to cut forward on the dorsal side from the last abdominal segment to the head as shown in **d**. Only cut through the exoskeleton and the skin. Pin the body open. To pin the body open you may have to cut some muscle attachments. Clean the body cavity of fat, membranes, and eggs (if eggs are present in the female). Provided that your grasshopper is well preserved, its internal anatomy should look like **e**.

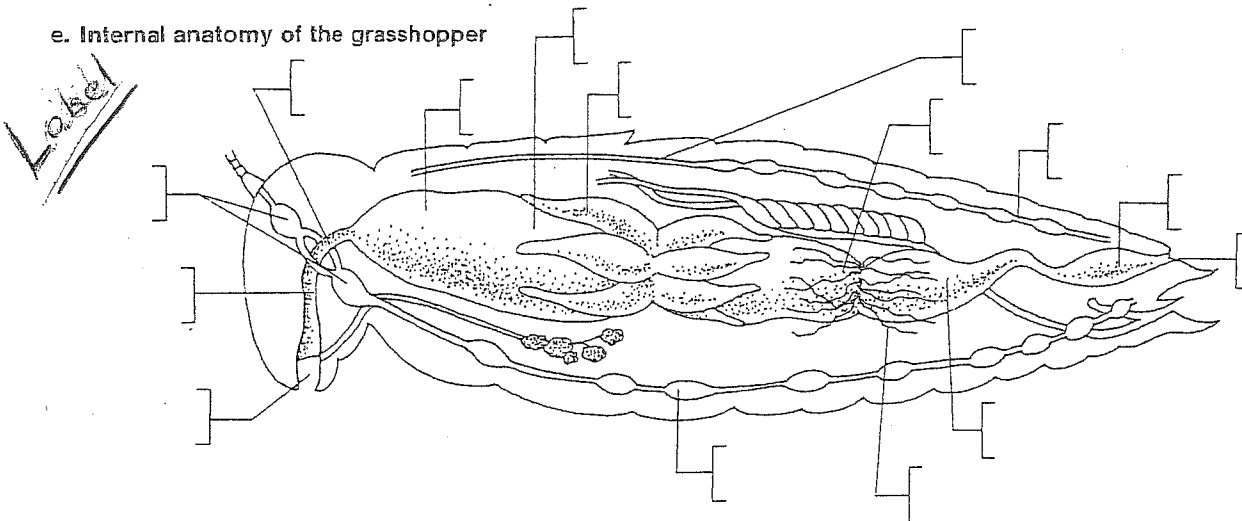


**d.** How to dissect the grasshopper

#### Digestive System and Excretory System

2. Trace the digestive system from the anterior to posterior organs. Food entering the *mouth* goes through the *pharynx* to the *esophagus* that leads to the *crop*. The *crop* flows into the *gizzard* that leads to the *stomach*. Attached to the stomach are six pairs of projecting *gastric ceca* encircling the digestive tube or *intestine*. In the area where the stomach joins the intestine is a mass of long strands called the *Malpighian tubules* that collect wastes from the body cavity and excrete the wastes into the intestine. The intestine continues posteriorly to the *rectum* that leads to the *anus*. Label all the structures listed above on **e**.

**e.** Internal anatomy of the grasshopper



#### Circulatory System

3. The circulatory and respiratory structures are very difficult to find in ordinary preserved specimens because the preservative does not penetrate the exoskeleton very well. The lack of preservative can cause the internal structures to decompose. If your specimen is well preserved, you should be able to find the *heart* which appears as a string of enlargements on the *dorsal blood vessel*. Some of the *tracheae* of the respiratory system may be seen on the surface of the *crop*.