

The term **ABDOMEN** is usually applied to the upper side of the third principal part of the insect, only; for the under side we use the term **VENTER**. At the terminal part of the male abdomen, are the sexual appendages, to which the name **HYPOPYGIIUM** is applied. In the female, the corresponding part is the **OVIPOSITOR**.

To understand the neuration of the wings, let the student select for comparison a common large horse-fly (*Tabanidæ*) and a common house or blue-bottle fly (*Muscidæ*). Observe in the former, near the middle of the wing, directed transversely, a large, oblong, five or six-sided cell, surrounded on all sides by other cells. This is the **DISCAL** cell, and is present in nearly all flies. Some, where on the vein (**FOURTH LONGITUDINAL**) that bounds this cell in front, will be seen a short connecting vein, directed anteriorly; this is the **ANTERIOR OF SMALL CROSS-VEIN**, and affords, in most cases, a key to the neuration, no matter how intricate. It always connects the fourth longitudinal vein behind with the third longitudinal in front; the cell behind it is the discal, in front the **SUBMARGINAL**, on the outer side the **FIRST POSTERIOR**, on the inner side the **FIRST BASAL**. Lying parallel with the first basal cell, and just behind it, is the **SECOND BASAL** cell; just behind the second basal cell is the **THIRD BASAL** or **ANAL** cell. In the horse-fly, the anal cell is seen to run back obliquely to near the posterior margin of the wing, where it terminates acutely, that is, the anal cell is said to be closed near the border of the wing; should the two veins that close it run separately into the wing's margin, then the cell is open. Now, counting outwardly along the posterior border to the third longitudinal vein (posterior branch), there will be seen five posterior cells, all open (except in a few species of our *Tabanidæ* the first posterior cell is closed), with their bases bordering on the discal and first and second basal cells. By following the third longitudinal vein outwardly from the anterior cross-vein, it is seen to give off an anterior branch, which runs to terminate in the front margin or **COSTA** of the wing; the third longitudinal vein is here furcate, and two submarginal cells are present. Compare now these same structures in the house-fly, and the discal is found much more elongated, the basal and anal cells small, the third longitudinal vein simple, not furcated, and only one submarginal and three posterior cells are present. Do not confound the obliquely placed vein that nearly closes the first posterior cell with the furcation of the third vein. The house-fly will also show clearly the six longitudinal veins, the last of which runs obliquely backward from the anal cell toward the margin, the fifth bordering the discal cell behind, the first and second running into the costa. The first vein that terminates in the costa (before the middle of the wing) is the **AUXILIARY**. The vein that closes the discal cell outwardly is the **POSTERIOR OR GREAT CROSS-VEIN**; the vein that closes the anal cell outwardly, the **POSTERIOR BASAL CROSS VEIN**.

By comparing the tip of the **TARSI** (feet) in the two above-mentioned flies, the student will immediately observe what is meant by the expression "empodia developed pulvilliform." The middle membranous appendage on the underside of the claws (**UNGUES**) in the horse-fly is the pulvilliform **EMPEDIUM**, while in the house-fly the