

Many insects are provided with cushions at the extremity of the feet, evidently for the purpose of breaking the force of falls, and preventing the jar which the frame would otherwise have to sustain. These cushions are formed of dense velvety tufts of hair, lining the underside of the tarsi, but leaving the claw uncovered; and the filaments, by insinuating themselves among the irregularities of the surfaces to which they are applied, produce a considerable degree of adhesion. Cushions are met with chiefly in large insects which suddenly alight on the ground after having leaped from a considerable height: in the smaller species they appear to be unnecessary, because the lightness of their bodies sufficiently secures them from any danger arising from falls.

Some insects are furnished with a still more refined and effectual apparatus for adhesion, and one which even enables them to suspend themselves in an inverted position from the under surfaces of bodies. It consists of suckers, the arrangement and construction of which are exceedingly beautiful; and of which the common house-fly presents us with an example. In this insect that part of the last joint of the tarsus which is immediately under the root of the claw, has two suckers appended to it by a narrow funnel-shaped neck, moveable by muscles in all directions. These suckers are shown in Fig. 152, which represents the under side of the foot of *Musca vomitoria*, or blue-bottle fly, with the suckers expanded. The sucking part of the apparatus consists of a membrane, capable of contraction and extension, and the edges of which are serrated, so as to fit them for the closest application to any kind of surface. In the *Tabanus*, or



horse-fly, each foot is furnished with three suckers. In the *Cimbex lutea*, or yellow saw-fly, there are four, of which