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ny of it. To the amined skilfully The house fly e, comparatively head. Each eye of which is com- ry organs. Un- these remarkable ne or many ima- conveyed a dis- e, for although ere can be little eyed to the sen- of this principle, reflected on the Therefore the of vision, need

This consists of ap doors, or spi- branch in all di- from without en- e tubes, thereby microscope these language of Pro-

ibes of an insect al mechanics it whether we con- ctured employed. t on the slightest p to the passage ct had not some and at the same not easily solved. n the two thin ic thread (a wire d in close spirals, ve the air vessels ere with its flex- eae, even to their dily distinguish-

ring which lines membrane. One branches are (so

to speak) inserted in the trunk, the two wires uniting without leaving a blank. It is difficult to describe how this is done; but by tracing home one of the ramifications, one may see that it is performed most accurately—the circumvolutions of the trunk wire being crowded and bent round above and below the insertion (like the grain of timber round a knot), and the lowest turns of the branch wire being suitably dilated to fill up the hiatus. The chemical name of the substance forming this wire is *chiline*.

The tracheæ terminate outwardly, as we said before, in spiracles, or trap doors, arranged along the sides of the fly. They serve to allow the free entrance of air into the tracheæ, at the same time excluding dust and other foreign matter. These spiracles are narrow oval orifices, which are closed sufficiently by means of minute delicate hairs, which form a network over the entrance.

The feet of *Musca domestica* are also objects of interest. Each foot is furnished with two large moveable claws, which it can affix to any little inequalities of surface; but the great bulk is composed of two large cushions or pads, or *pulvilli*, as they are technically called. These pads are furnished with a great number of filaments, or soft hair-like bodies situated on the margins. Many explanations have been given of the manner in which flies walk on polished surfaces, especially if they are placed vertically. It was long supposed that the *pulvilli* were mere suckers, and that the fly sustained itself in unnatural positions by forming a vacuum between these and the surface of the object; in which case the atmosphere would press with sufficient force on the outside of the sucker to hold the weight of the fly. One writer and microscopist stated that the under portion of the pads were beset with numerous bristles, or tenters, working in an opposite direction to the large claws, thereby enabling the insect to take advantage of any slight irregularities of surface. In the case of polished bodies of glass and such substances, he gratuitously supposed it to be covered with a "smoky tarnish," into which these minute hairs might be fastened. However, the accepted explanation now is,—that the small filaments belonging to the *pulvilli* each terminate in a small fleshy bulb, which is kept moist by a viscid liquid: these constitute the organs of adhesion. Although they are very minute, yet their number is very great, and they expose considerable surface.

Towards the close of autumn vast numbers of flies fall victims to a curious disease, which is highly interesting to the microscopist. Occasionally there may be noticed numbers of dead flies adhering to the walls and windows, often so far retaining the attitude of life that it is difficult, without touching them, to assure one's self that they are not actually on the point of taking flight. Insects in dying usually draw up the legs and cross them on the body, but in this case the dead body is supported on the outstretched legs, whose feet seem still to retain their adhesive property. If the body be on a window a halo may be observed around it, nearly an inch in diameter, and composed of a whitish dust, which, on examination by the microscope, is found to consist of the spores of a fungus. The abdomen is much distended, and the rings composing it are separated from each other, the intervals being occupied by white prominent zones, constituted of a fungoid growth, proceeding from the interior of the body. Further examination will show that the whole of the contents of the body of the fly have been consumed by the parasitic growth, and that nothing remains but an empty shell, lined with a thin felt-like layer of the interlaced threads of this fungus, the name of which is *Empusa muscæ*.

In conclusion, we will say a few words in favour of our "household pest." Most of us have experienced in the summer time, during showery weather, the sharp bite of a fly, which is usually supposed by most people to be the common house fly; but, although their appearance may seem similar, the two are perfectly distinct. They differ so much in structure and habits that entomologists have placed them in separate genera. The proper name of the house fly is at the head of this article, while the bloodthirsty little creature we have referred to rejoices in the title of *Stomoxys calcitrans*.