

one is placed upon the under surface of each of the first four joints of the toes, (Fig. 153 :) and all the six feet are provided with these suckers. In the *Dytiscus marginalis*, suckers are furnished to the feet of the male insect only. The first three joints of the feet of the fore-legs of that insect have the form of a shield, the under surface of which is covered with suckers having long tubular necks: there is one of these suckers very large, another of a smaller size, and a great number of others exceedingly small. A few of the latter kind are represented highly magnified in Fig. 154. In the second pair of feet, the corresponding joints are proportionally much narrower, and are covered on their under surface with a multitude of very minute suckers. The *Acridium biguttulum*, which is a species of grasshopper, has one large oval sucker, under the last joint of the foot, immediately between the claws. On the under surface of the first joint are three pairs of globular cushions, and another pair under the second joint. Fig. 155 shows these parts. The cushions are filled with an elastic fibrous substance; which, in order to increase the elasticity of the whole structure, is looser in its texture towards the circumference.\*

The mode in which these suckers operate may be distinctly seen, by observing with a magnifying glass the actions of a large blue-bottle fly in the inside of a glass tumbler. A fly will, by the application of this apparatus, remain suspended from the ceiling for any length of time without the least exertion; for the weight of the body pulling against the suckers serves but to strengthen their adhesion: hence, we find flies preferring the ceiling to the floor, as a place of rest.

Insects which, like the gnat, walk much upon the surface of water, have at the ends of their feet a brush of fine hair, the dry points of which appear to repel the fluid, and prevent the leg from being wetted. If these brushes be moistened with spirit of wine, this apparent repulsion no longer takes place; and the insect immediately sinks and is drowned.

\* Philosophical Transactions for 1826, p. 524.