

course, it effects its purpose very easily by striking the air with more force on one side than on the other; or, by employing certain muscles which bend the body to one side, it shifts the situation of the centre of gravity, so that the reaction of the air on the wings is exerted in a different direction to what it was before; and the motion of the body is modified accordingly.

By exerting with the wings a force just sufficient to balance that of gravity, insects can poise themselves in the air, and hover for a length of time over the same spot, without rising or falling, advancing or retreating; and the body may, all the while, be kept either in the horizontal, or in the erect position. In the latter case the motions are similar to those which take place in ordinary flying, only they are more feebly exerted, since all that is required is to sustain the weight of the body without urging it to a greater speed. *Libellulae*, *Sphinxes*, and a great number of Diptera, exhibit this kind of action: among the latter, the *Stratiomys* is most remarkable for its power of remaining long in the same fixed position.

The number, form, and structure of the wings of insects have furnished entomologists with very convenient characters for their classification: on these are founded the orders of the *Coleoptera*, *Orthoptera*, *Rhipiptera*, *Hemiptera*, *Neuroptera*, *Hymenoptera*, *Diptera*, and *Lepidoptera*. To enter into any detail in a field of such vast extent as is presented by the infinitely diversified mechanism of the insect creation, would, it is obvious, far exceed the proper limits of this treatise. I must, therefore, confine myself to a few leading points in their structure and modes of progression.

In the *Coleoptera*, an order which comprehends by far the largest number of genera of insects, the lower pair of wings (w, Fig. 150, p. 228) are light and membranous, and of a texture exceedingly fine and delicate. They are of great extent, compared with the size of the body, when fully expanded; and are curiously folded when not in use. For the protection of these delicate organs, the parts which correspond to the upper pair of wings of other insects, are here