hovering, as we term it in birds, but one of these insects can stand so still in the air that it is possible to examine it with a reading glass, and thus decipher the antennae and other minute features, if one has the good fortune not to frighten the insect away, or has it in captivity as I had. I mention this reading-glass observation to give an idea of the steadiness of the insect as it stands still in the air. Needless to say its wings are all the time vibrating several hundred times a second .

The tip of a fly-wing seven millimeters long probably travels at the rate of 5 to 10 meters per second when the wings are vibrating at the rate of two to four hundred times per second. I am assuming that the "figure eight" described by the wing-tip in one vibration is equal in length to the circumference of a circle of seven millimeters radius. Of course this is only an approximation, but it serves to bring out the fact that the rate of motion of the parts of an insect wing are in some instances comparable with those of the propellers now being used in flying machines, at any rate when the latter are being used at their lower speeds.

One conception of the fly when poised in the air is that of a partial vacuum of which the fly is the "nucleus". Of course this partial vacuum, together with its insect nucleus has the same specific gravity as the surrounding air.

In form this vacuum is what would be expected from the action of the wings, i.e., it has a bilateral symmetry. From observations I have made, and speaking from recollection, it