

which has but a small wing, contains, according to Lewenhoeck, more than two hundred thousand of these scales in each wing.

These scales doubtless contribute to the protection of the wing; but they at the same time add considerably to their weight, and impede the velocity of their action. This inconvenience appears to have been in a great measure compensated by the greater size of the wings, and by the extent of the surface with which they strike the air. Still, however, it is sufficiently obvious that insects of this order fly with less rapidity and steadiness than most others. But this unsteadiness, again, is turned to good account; for the butterfly, by its irregular and apparently capricious movements, alternately dipping and rising in the air, so as to describe a series of zigzag lines, more easily eludes capture when pursued, not only by naturalists, but also by birds that are eagerly seeking to secure them. It is astonishing to what a distance the silk worm moths will fly; some have been known to travel more than a hundred miles in a short time. The *Papilio Iris* often rises to so great a height in the air as to be quite invisible.

A mechanical contrivance is adopted in many of the Lepidoptera for keeping their wings steady during flight, consisting of a hook covered with hair and scales attached to the under side of the upper wings near their base, and connected also by means of bristles to the base of the lower wing: by this attachment all the wings are locked together, and brought into action at the same time. Insects of the Sphinx tribe are also provided with a kind of rudder formed by the expansion of the tail, enabling them to steer their course with more certainty. The Lepidoptera in general fly with the body nearly upright, contrary to the habits of most other winged insects, whose bodies, while flying, are nearly in a horizontal position.

The feats of agility and strength exhibited by insects have often been the theme of admiration with writers on natural history; and have been considered as affording incontrovertible proofs of the enormous power with which their muscles