

still they produce some effect in flight, and they partake, in a reduced degree, of the motion of the wings, those of the cock-chafer\* describing an arc equal to only a fourth part of that of the latter organs.

M. Jurine, in which he is followed by M. Chabrier, has regarded the primary wing of insects as analogous to the wing of birds; but though this may hold good in some respects, it does not in its main feature. If we consider that the wing of birds is really the analogue of the fore-leg of quadrupeds, and replaces it; and also that insects have a representative of that leg fixed to the anterior segment of the trunk, thence called the *Manitrunk*, in contradistinction to the *Alitrunk*, which bears the wings; it seems not probable that the anterior leg and the anterior wing, which belong to *different* segments, should be analogues of the same organ. The first pair of wings, or their representatives, the elytra, are connected with the hip-joint,† by an intermediate piece called the scapular;‡ and the posterior wings are connected with the same joint of the posterior legs by the *parapleura*,§ so that, in some sort, the wings of insects may be regarded as appendages,—not of the *fore-legs*, or arms, which are the real analogues of the fore-leg of quadrupeds, and wing of birds,—but the first pair of the mid-legs, and the second of the hind-legs.

Some winged insects, especially the dragon-flies, like the crabs and spiders, can retrograde in their flight, and also move laterally, without turning; thus they can more readily pursue their prey, or escape from their enemies. The situation of their wings is usually so regulated in the majority with respect to their centre of gravity, as to enable them to maintain nearly a horizontal position in flight; but in some, as the stag-beetles,|| the elytra and wings have their attach-

\* *Melolontha vulgaris*.

† *Coxa*. See *Introd. to Ent.* iii. 661.

‡ *Scapulare*. *Ibid.* 561.

§ *Ibid.* 575.

|| *Lucanus*.