

affinity. Thus the leg of an insect, (Fig. 44,) and that of a lizard, (Fig. 45;) the wing of a butterfly and the wing of a bat, are quite similar in form, position, and use; but in the bat and the lizard, the organ has an internal bony support, which is a part of the skeleton; while the leg of the insect has merely a horny covering, proceeding from one of the rings of the body, and the wing of the butterfly is merely a fold of the skin, showing that the limbs of the *Articulata* are constructed upon a different plan, (157.) It is by ascertaining and regarding these real affinities, or the fundamental differences, existing between similar organs, that the true natural grouping of animals is to be attained.

2. *Of Standing, and the Modes of Progression.*

181. Standing, or the natural attitude of an animal, depends on the form and functions of the limbs. Most of the terrestrial mammals, and the reptiles, both of which employ all four limbs in walking, have the back-bone horizontal, and resting at the same time upon both the anterior and posterior extremities. Birds, whose anterior limbs are intended for a purpose very different from the posterior, stand upon the latter, when at rest, although the back-bone is still very nearly horizontal. Man alone is designed to stand upright, with his head supported on the summit of the vertebral column. Some monkeys can rise upon the hind legs into the erect posture; but it is evidently a constrained one, and not their habitual attitude.

182. That an animal may stand, it is requisite that the limbs should be so disposed that the centre of gravity, in other words, the point about which the body balances itself, should fall within the space included by the feet. If the centre of gravity is outside of these limits, the animal falls to the side to which the centre of gravity inclines. On this account, the albatross, and some other aquatic birds