

a tendency which is required to be counteracted by the actions of the muscles which are situated on the external side of each of those angles. These muscles are the *extensors* of the joints; that is, the muscles which tend to bring their parts into a straight line. It is, in fact, by this muscular action, much more than by simple rigidity, that the limb supports the superincumbent weight of the body. It is evident that greater muscular force is necessary for this purpose when the joints are bent, than when they are already extended; and the portions of the fore legs being naturally in this condition, require less power than those of the hinder legs to retain them in their proper relative positions.

The most complete instance of a vertical arrangement of the bones of the extremities is seen in the *Elephant*; where, in order to sustain the enormous weight of the body, the limbs are shaped into four massive columns, of which the several bones are disposed nearly in perpendicular lines. By this means, the body is supported with scarcely any muscular effort, and the attitude of standing is, in this animal, a state of such complete repose, that it often sleeps in that position. The elephant which was kept some years ago at the Menagerie at Paris, although much enfeebled by a lingering disorder, was never seen to lie down till the day on which he died. When he was in the last stage of debility, what seemed to give him most distress was the effort requisite to support his head: and, in order to relieve the muscles of the neck, which were strained in that exertion, he was in the habit of extending his trunk perpendicularly to the ground, by contracting all the muscular fibres which run transversely in that organ, and of thus forming a vertical prop for the head. But in almost all other quadrupeds, the mere act of standing, though a state of comparative rest, implies, for the reasons already given, a degree of muscular exertion; and they can enjoy complete repose only by letting the body recline upon the ground.

The conformation of the hind extremities, which, as we have seen, is not so well calculated for the simple support of