

already mentioned, more frequently happens, through a point a little in front of the exact centre. At the time when the hind foot which began the action is raised from the ground, the centre of gravity, having been by that action impelled forwards, still remains above the base formed by the other three feet, and which is now reduced to a triangle. That hind foot being set down, while the corresponding fore foot is raised, a new triangular base is formed by the same hind foot together with the two of the other side, which have not yet been raised. The centre of gravity is still situated above this new triangle, and the body is consequently still supported on these three feet. The fore foot may now be advanced without endangering the stability of the body; and by the time this foot is set down, and has thereby formed a new quadrilateral basis with the other feet, the centre of gravity has arrived above the centre of this new base. But at this moment the centre of gravity is again urged forwards by the other hind foot, which now comes into action, and repeats on the other side the same succession of actions, which are attended with the same consequences as before. Thus, during its whole progress, the animal is never for an instant in danger of falling; for whichever of the feet may be raised from the ground, the other three feet are always so placed as to form a stable base of support.

In quick walking it often happens, that quadrupeds raise their fore foot on either side a little before the hind foot comes to the ground. This is shown by the impression made by the latter being on the same spot, or even rather in advance of the impression made by the former. But the time during which the body is thus supported only by two feet is so short as not sensibly to influence the results.

In consequence of the obliquity of the alternate impulses given to the centre of gravity by the successive actions of both the hind legs, a slight degree of undulation is occasioned; but these undulations are only lateral. A trot may be considered as a succession of short leaps made by each set of feet taken diagonally; that is, by the right fore foot, and the left hind foot; or, vice versa, the one set being raised,