

stimulus other than that of the persistence of the essential conditions of life.

Slightly higher are the *simple reflexes* which may be performed without the co-operation of the higher brain-centres, and are also independent of conscious control. Swallowing and sneezing are familiar examples.

Higher still are *complex reflexes*, illustrated especially in often-repeated activities which were never under intelligent control. These are habitual, but they have a different origin from the habitual-intelligent activities above referred to. According to many, the instincts of ants and bees, for instance, are nothing more than very complex reflexes, but it is doubtful whether we ever get quite near enough to them to detect the individual variations which may give them intelligent (as well as instinctive) character.

In the middle of this inclined plane between habitual-intelligent activities and complex reflexes we may place instinctive activities. They differ from habitual-intelligent activities in being inborn or innate, requiring no experience nor education, though they are often perfected thereby. They are also shared by all the members of the species in almost the same degree, and biologically they are of critical moment in the struggle for existence. They differ from complex reflexes in involving the activity of the higher nerve-centres, and it is probable, though not exactly demonstrable, that they are associated with consciousness.

Our metaphor of the inclined plane emphasizes the probability that there are no hard-and-fast lines separating the different grades of activity from one another.

The theory of instinct which was dominant before Darwin's day may be conveniently termed Lamarckian.

Lamarckian  
Theory of  
Instinct.

It interpreted instincts as the outcrop of inherited habits. By "lapsing of intelligence", as G. H. Lewes termed it, activities which originally demanded intelligent control may become habitual, and it was supposed that in the course of generations these habits might become engrained in the constitution; in short, inheritable. Similarly, complex reflex actions becoming habitual might also give