

ing apprized, by the increasing loudness of the sound of falling waters, as he advances in a particular direction, that he is coming nearer and nearer to the cataract. Yet how much is really implied in all these apparently simple phenomena! Science has taught us that these perceptions of external objects, far from being direct or intuitive, are only the final results of a long series of operations, produced by agents of a most subtle nature, which act by curious and complicated laws, upon a refined organization, disposed in particular situations in our bodies, and adjusted with admirable art to receive their impressions, to modify and combine them in a certain order, and to convey them in regular succession, and without confusion, to the immediate seat of sensation.

Yet this process, complicated as it may appear, constitutes but the first stage of the entire function of *perception*; for before the mind can arrive at a distinct knowledge of the presence and peculiar qualities of the external object which gives rise to the sensation, a long series of mental changes must intervene, and many intellectual operations must be performed. All these take place in such rapid succession, that even when we include the movement of the limb, which is consequent upon the perception, and which we naturally consider as part of the same continuous action, the whole appears to occupy but a single instant. Upon a careful analysis of the phenomena, however, as I shall afterwards attempt to show, we find that no less than twelve distinguishable kinds of changes, or rather processes, some of which imply many changes, must always intervene, in regular succession, between the action of the external object on the organ of sense, and the voluntary movement of the limb which it excites.

The external agents, which are capable of affecting the different parts of the nervous system, so as to produce sensation, are of different kinds, and are governed by laws peculiar to themselves. The structure of the organs must, accordingly, be adapted, in each particular case, to receive