

THE RIDDLE OF THE UNIVERSE

from this ontogenetic fact we confidently infer, in virtue of the great biogenetic law, the important phylogenetic proposition, that in the long historical evolution of our ancestors, likewise, the higher sense-organs with their specific energies were originally derived from the epidermis of lower animals, from a simple layer of cells which had no trace of such differentiated sensilla.

A particular importance attaches to the circumstance that different nerves are qualified to perceive different properties of the environment, and these only. The optic nerve accomplishes only the perception of light, the auditory nerve the perception of sound, the olfactory nerve the perception of smell, and so on. No matter what stimuli impinge on and irritate a given sense-organ, its reaction is always of the same character. From this specific energy of the sense-nerves, which was first fully appreciated by Johannes Müller, very erroneous inferences have been drawn, especially in favor of a dualistic and *à priori* theory of knowledge. It has been affirmed that the brain, or the soul, only perceives a certain condition of the stimulated nerve, and that, consequently, no conclusion can be drawn from the process as to the existence and nature of the stimulating environment. Sceptical philosophy concluded that the very existence of an outer world is doubtful, and extreme idealism went on positively to deny it, contending that things only exist in our impressions of them.

In opposition to these erroneous views, we must recall the fact that the "specific energy" was not originally an innate, special quality of the various nerves, but it has arisen by adaptation to the particular activity of the epidermic cells in which they terminate. In harmony with the great law of "division of labor"