

KNOWLEDGE AND BELIEF

All knowledge of the truth depends on two different, but intimately connected, groups of human physiological functions: firstly, on the *sense-impressions* of the object by means of sense-action, and, secondly, on the combination of these impressions by an association into *presentations* in the subject. The instruments of sensation are the sense-organs (*sensilla* or *aestheta*); the instruments which form and link together the presentations are the organs of thought (*phroneta*). The latter are part of the central, and the former part of the peripheral, nervous system—that important and elaborate system of organs in the higher animals which alone effects their entire psychic activity.

Man's sense-activity, which is the starting-point of all knowledge, has been slowly and gradually developed from that of his nearest mammal relatives, the primates. The sense-organs are of substantially the same construction throughout this highest animal group, and their function takes place always according to the same physical and chemical laws. They have had the same historical development in all cases. In the mammals, as in the case of all other animals, the *sensilla* were originally parts of the skin; the sensitive cells of the epidermis are the sources of all the different sense-organs, which have acquired their specific energy by adaptation to different stimuli (light, heat, sound, chemical action, etc.). The rod-cells in the retina of the eye, the auditory cells in the cochlea of the ear, the olfactory cells in the nose, and the taste-cells on the tongue, are all originally derived from the simple, indifferent cells of the epidermis, which cover the entire surface of the body. This significant fact can be directly proved by observation of the embryonic development of man or any of the higher animals. And