

ments in sensory nerves, the following important observation has been made—viz. that there is a constant ratio between the amount of agitation produced in a sensory nerve, and the intensity of the corresponding sensation. This ratio is not a direct one. As Fechner states it, 'Sensation varies, not as the stimulus, but as the logarithm of the stimulus.' Thus, for instance, if 1,000 candles are all throwing their light upon the same screen, we should require ten more candles to be added before our eyes could perceive any difference in the amount of illumination. But if we begin with only 100 candles shining upon the screen, we should perceive an increase in the illumination by adding a single candle. And what is true of sight is equally true of all the other senses: if any stimulus is increased, the smallest increase of sensation first occurs when the stimulus rises one per cent. above its original intensity. Such being the law on the side of sensation, suppose that we place upon the optic nerve of an animal the wires proceeding from a delicate galvanometer, we find that every time we stimulate the eye with light, the needle of the galvanometer moves, showing electrical changes going on in the nerve, caused by the molecular agitations. Now these electrical changes are found to vary in intensity with the intensity of the light used as a stimulus, and they do so very nearly in accordance with the law of sensation just mentioned. So we say that in sensation the cerebral hemispheres are, as it were, acting the