

## KNOWLEDGE AND BELIEF

images, unites the isolated elements into a connected whole. Thus are produced new general presentative images, and these suffice to interpret the facts perceived and satisfy "reason's feeling of causality."

The presentations which fill up the gaps in our knowledge, or take its place, may be called, in a broad sense, "faith." That is what happens continually in daily life. When we are not sure about a thing we say, I *believe* it. In this sense we are compelled to make use of faith even in science itself; we conjecture or assume that a certain relation exists between two phenomena, though we do not know it for certain. If it is a question of a *cause*, we form a *hypothesis*; though in science only such hypotheses are admitted as lie within the sphere of human cognizance, and do not contradict known facts. Such hypotheses are, for instance—in physics the theory of the vibratory movement of ether, in chemistry the hypothesis of atoms and their affinity, in biology the theory of the molecular structure of living protoplasm, and so forth.

The explanation of a great number of connected phenomena by the assumption of a common cause is called a *theory*. Both in theory and hypothesis "faith" (in the scientific sense) is indispensable; for here again it is the imagination that fills up the gaps left by the intelligence in our knowledge of the connection of things. A theory, therefore, must always be regarded only as an approximation to the truth; it must be understood that it may be replaced in time by another and better-grounded theory. But, in spite of this admitted uncertainty, theory is indispensable for all true science; it elucidates facts by postulating a cause for them. The man who renounces theory altogether, and seeks to construct a pure science with certain facts alone (as