

THE RIDDLE OF THE UNIVERSE

often happens with wrong-headed representatives of our "exact sciences"), must give up the hope of any knowledge of causes, and, consequently, of the satisfaction of reason's demand for causality.

The theory of gravitation in astronomy (Newton), the nebular theory in cosmogony (Kant and Laplace), the principle of energy in physics (Meyer and Helmholtz), the atomic theory in chemistry (Dalton), the vibratory theory in optics (Huyghens), the cellular theory in histology (Schleiden and Schwann), and the theory of descent in biology (Lamarck and Darwin), are all important theories of the first rank; they explain a whole world of natural phenomena by the assumption of a common cause for all the several facts of their respective provinces, and by showing that all the phenomena thereof are inter-connected and controlled by laws which issue from this common cause. Yet the cause itself may remain obscure in character, or be merely a "provisional hypothesis." The "force of gravity" in the theory of gravitation and in cosmogony, "energy" itself in its relation to matter, the "ether" of optics and electricity, the "atom" of the chemist, the living "protoplasm" of histology, the "heredity" of the evolutionist—these and similar conceptions of other great theories may be regarded by a sceptical philosophy as "mere hypotheses" and the outcome of scientific "faith," yet they are indispensable for us, until they are replaced by better hypotheses.

The dogmas which are used for the explanation of phenomena in the various religions, and which go by the name of "faith" (in the narrower sense), are of a very different character from the forms of scientific faith we have enumerated. The two types, however—the "natural" faith of science and the "supernatural"