

This may seem by no means extraordinary to some, but it is the *beginning* of a physiology of reproduction in plants.

Chapter VIII.

The Conditions of Life and Death.

Three Periods of Opinion—The Organism and the Inorganic World—The Quick and the Dead—Characteristics of Living Organisms—"Vital Force"—The Kinds of Death—Organic Immortality—General Conditions of Life—Origin of Life—Ancient Belief in Spontaneous Generation—Mediæval Beliefs—Redi's Experiments—Slow Death of the Theory of Spontaneous Generation—Pouchet and Pasteur—Tyndall—The Fact of Biogenesis—Opinions as to the Origin of Life upon the Earth.

All vital activity implies interaction between the living creature and its surroundings, between the organism and its environment, and the most general problems of physiology have to do with this relation.

Three
Periods of
Opinion.

(1.) In ancient times the relation of dependence in which an organism stands to its environment was not perceived, except in an occasional prophetic flash of insight. Nor could it be otherwise until the advance of chemistry and physics made an analysis of function possible. It was also characteristic of the old days that the contrast between the living and the not-living was made little of; for the doctrine of the spontaneous generation of even highly organized animals met with general acceptance from Aristotle to Harvey.

(2.) A second period, which we may date from the discovery of oxygen, shows the growth of a conviction that the organism is in part dependent upon its surroundings. But this conviction was inhibited by the theory of a special vital force, supposed to dominate the chemical and physical processes which occur in a living body. This theory was probably strengthened