QUEEN'S UNIVERSITY JOURNAL

VOL. XXXVIII. FEBRUARY 22nd, 1911. No. 17.

# Some Conditions Affecting Organic Progress.

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THERE is not unanimity as to the meaning of the term progress, but I shall use it in the ordinary sense of—change from simplicity of structure to complexity, that is from uniformity of parts to specialization of parts, from every part doing all kinds of work to complete division of labor. (It will be interesting to consider whether progress in this sense is an inherent quality of matter or of life, and whether living matter yields itself an easy victim to circumstances which threaten its existence.)

I shall ask you to imagine first a lifeless world in which the only changes were physical and chemical. Condensation, solution, diffusion, combinations and decompositions all went on vigorously in warm, moist surroundings. This may have gone on for ages, but finally in all probability as the climax of a long series of combinations and rearrangements some of these chemical changes resulted in the formation of an unstable, gelatinous substance which we call Protoplasm. In spite of much serious study and long continued experimentation man has not yet quite mastered the chemical processes involved in the building up of Protoplasm. We do know that it is made of carbon, hydrogen, oxygen, nitrogen, phosphorus and sulphur,—"the dust of the earth." Well this translucent semifluid substance Protoplasm was siezed upon by a new force which gave the protoplasm qualities in which it differed in a marked way from any other chemical compound. One of these qualities is the ability of protoplasm to change many other substances into its own substance, thus increasing the quantity of protoplasm. This power is not possessed by any other kind of matter known to man. We call this new force life, and one of the notable powers of life is this of giving to protoplasm the power to assimilate food, to grow thereby and also to divide itself into two or even many parts, each of which retains all the distinguishing qualities of the parent mass. Unless we are advanced students of physical research we will agree that the force called life manifests itself only through the medium of matter. Protoplasm has the distinction of being the only kind of matter, in which life makes itself evident. We cannot avoid desiring to know what is the real nature of this vital force, and what is its origin. These questions are yet to be answered to the satisfaction of all. Those who desire to reduce all phenomena to known chemical and physical changes, reason as follows—Life is made evident by the production of