

biogenesis, that life arises from pre-existing life, was thoroughly established. At the same time, he expressed his *opinion* that if he could have been a witness of the beginning of organic evolution he would have seen the origin of protoplasm from not-living matter. The point is clear; on the one hand, the biologist makes the negative statement that so far as he is aware no form of life has ever been observed to arise except from a parent form of the same kind; on the other hand, he suggests the limitation that there may have been, or may still be, conditions in which not-living matter acquired the potentialities which we call life.

The conclusion, then, which most modern biologists accept is, that while there is no known evidence of not-living matter giving origin to living organisms, this does not necessarily exclude (a) the possibility that this once took place, (b) the possibility that it is taking place now, or (c) the possibility that it may be made to take place again. If any of these possibilities should express realities, then our estimate of the potentialities of not-living matter must be heightened. It should perhaps be noticed, as a sagacious friend has pointed out to me, that protoplasm or living matter may still be forming "in extremely small quantities, too small to be visible, and of simple or no structure, but yet sufficiently complex in composition to serve as food for organisms". It goes without saying, however, that possibilities do not enter into the solid framework of science.

Since our data are practically nil, the scientific attitude in regard to the problem of the origin of life must be agnostic. Yet many opinions on the subject have been ventured, and some of them are both interesting and stimulating.

Opinions as to Origin of Life upon the Earth.

Quite different from the others is that of Alfred Russel Wallace, who postulates a spiritual influx at the origin of life and in connection with some other great events of history.

In 1865 and afterwards H. E. Richter expounded his hypothesis that living germs might be eternal, *omne vivum ab æternitate e cellula*, and that they might drift through space from sphere to sphere, lodging and de-