

pushing ideas to their logical limits, who startled biologists by the conception of the immortality of the simplest organisms—the unicellular Protozoa and Protophytes.

It is not difficult to see that these cannot be subject to death in the same degree as higher animals are.

(1) In the first place, being single cells, without any "body", they are able to sustain the equation between waste and repair for an indefinitely long period. It is conceivable that some of the simplest may have been living on since life began. They make good their waste by continuous and perfect repair. This has been summed up in the epigram that death was the price paid for a body.

(2) In the second place, it is a well-known fact that among multicellular organisms reproduction is attended with loss of life. One of the simplest—an *Orthonectid*—dies in giving birth, and the same is true of some worms. Death follows close on the heels of reproduction in the case of animals so different as may-flies, butterflies, and lampreys. Everyone knows that flowering and fruiting exhaust the energies of annual plants. In the very morning of life immortality was pawned for love.

In the Protozoa and Protophytes, however, where the distinction between "body" and reproductive elements has not been differentiated, reproduction is a simpler, less expensive process. The *Amœba* divides into two, only a metaphysical individuality is lost. There is as little death as when two cells fuse into one, another familiar reproductive phenomenon. Similarly, with spore-formation and budding, we cannot speak of death when there is nothing—not even ashes—left to bury. More prosaically it may be said that the conception of natural death which applies to the multicellular organisms does not apply in the same degree to those which are unicellular.

Maupas has indeed pointed out that an isolated family of Infusorians, all descended by asexual multiplication from one cell, and therefore not coupling or conjugating with one another, will, after a certain number of genera-