

genial environment. It is alive, it moves, it comes in contact with small particles of inorganic matter ; it shapes itself so as to surround them, and the little particles are absorbed into its organism and they become a part of the living cell. That function of the cell which enables it to absorb the latent forces of the inorganic matter unto itself, we call nutrition. If we watch it still further, we shall see that it increases in size, it grows. But this little cell we have been studying has yet a still brighter future: it has a latent force within that has thus far been unobserved. Growth is the balance of repair over waste, and when through assimilation of food into its substance, this cell reaches a certain size, the force of cohesion is overcome by the release of the energy derived from food, and the cell divides equally at the kernel or nucleus, the soft slimy protoplasm distributes itself around each nucleus as the two part company, to grow and divide again in like manner *ad infinitum*. You here see the function of perpetual existence has been added—the function of self-preservation, by making two living things out of one: the origin of parent and offspring, the beginning of reproduction.

The fundamental principles of life were embraced in these four functions: nutrition, growth, motion and reproduction. The living cell being completed, it has since been allowed to work out its own destiny. It began to unfold the mysterious possibilities that were concealed within its little structure, and the unnumbered ages have witnessed a mighty growth and development—a wonderful evolution of life.

Thus far we have learned four functions of the organic world—nutrition, growth, motion and reproduction. We find by experimentation that if we diminish the nutrition the growth diminishes and the motion lessens. If nutrition ceases, growth and motion both cease and the cell dies; the two factors that were combined to form the living cell dissolve, and the organism ceases to be. Let us consider the relation these four attributes of organic life bear to one another. Since living organisms can move, grow and reproduce only by means of nutrition, it is evident that they depend upon nutrition for their continued existence. Therefore nutrition is essential to the other three functions, for without it the others would cease to act and the organism would die.

But nutrition and growth cannot be acquired unless the organism exerts itself in selecting food, and subsequently in assimilating it. Thus we learn that without exercise, or the function of motion, the functions of nutrition and growth will cease. Exercise is, therefore, absolutely essential to nutrition and growth. Without the judicious exercise of each function of an organism the other functions will not be normal; with a little exercise of these functions it may simply continue to exist; but when they cease to act, the organism must die.