

are in form the figures of Euclidian geometry. Our time flows ever in proportion to the swings of a pendulum, the propagation of light, and the progress of a chemical change. Time and space are thus bound to matter and energy by experience, and for practical purposes we accept all four as science at present knows them.¹ We cannot doubt that knowledge of them will increase and ideas of them change. But we can scarcely think that our present ideas are inadequate for our present purposes, or that, for life, matter will ever be other than the elements of the periodic classification, energy that set of quantities to which we apply the laws of thermodynamics, and time and space the concepts which were familiar to Galileo and Euclid.

IV

THE ORGANISM

Thus the growth of physical science has provided the speculative biologist with a very accurate and extensive description of the physico-chemical structure of the material universe and with a well-founded con-

¹ In the present work we need have no concern for the so-called principle of relativity.