

themselves into the special structures of the organism to which they belong. . . . On the one hand, it cannot be in these proximate chemical compounds composing organic bodies that this specific polarity dwells; . . . the occurrence of such endlessly varied forms would be inexplicable. On the other hand, this property cannot reside in what may be roughly distinguished as the *morphological units*. The germ of every organism is a microscopic cell, or a structureless blastema which nevertheless exhibits vital activities. . . . If, then, this organic polarity can be possessed neither by the chemical units nor the morphological units, we must conceive it as possessed by certain intermediate units which we may term *physiological*. . . . We must conclude that in each case some slight difference of composition in these units . . . produces a difference in the form which the aggregate of them assumes."

51.  
Herbert  
Spencer's  
"physio-  
logical  
units."

Now, there are only two ways open to the purely scientific thinker by which he can reach these intermediate structures lying between the mathematical forms of crystals or the molecular arrangement of atoms, and the visible but apparently structureless forms of cells and protoplasm. One of these is the still more advanced analysis of these microscopic structures by still greater powers of magnifying instruments; the other is the mathematical method of calculating from simple beginnings the complex forms of equilibrium which atoms or molecules are capable of assuming under the action of known forces. It appears unlikely that the powers of the microscope can be much further extended; and the mathematical calculation of even the simplest configur-