

mission (which I first elaborated in the nineteenth chapter of my "General Morphology," and have briefly discussed here) interact with and through one another in the most diversified ways, and this accounts for their exceeding importance for transformations, and, at the same time, for the great difficulty in penetrating theoretically further into the nature of these physiological processes. Numerous endeavours have, indeed, been made since Darwin to set up molecular hypotheses in order to explain the processes, but none of these so-called "Theories of Heredity" have satisfactorily cleared up the obscurity that surrounds them, or received universal recognition.

If now, in conclusion, we take a glance at these *theories of heredity* which have recently been so much discussed, we must bear in mind that they all possess the value merely of *provisional molecular hypotheses*; they cannot be set up either *morphologically* by microscopic or anatomical observation, or *physiologically* by physical and chemical demonstration. The *plasma* or albuminous substance of the cells, by means of which alone transmission is accomplished (both the *karyo-plasm* of the cell-kernel, as well as *proto-plasm* of the cell-body), certainly possesses an extremely complex and fine *molecular structure*; that is, the smaller and smallest particles of which the plasma consists are arranged in groups, according to extremely complicate laws. But unfortunately our microscopic instruments are much too powerless to enable us to obtain any insight into this arrangement; and as little have physics and chemistry hitherto been able to obtain a satisfactory physiological idea of the molecular construction and transformation of the plasma. All the opinions that have been formed of