beginning of our century, did, indeed, recognize the immense importance of this interaction, but they were unable to penetrate further into the mysterious character of the two "*constructive forces.*" However, the grand advances in morphology and physiology, in histology and ontogeny, have now furnished us with a far deeper insight into their true nature, and we know them to be genuine *physiology functions*, i.e. *universal vital forces* in organisms themselves; and like other vital processes these two fundamental constructive forces proceed primarily from physical and chemical relations. They certainly at times appear extremely complicate, but can nevertheless be traced back to simple, mechanical causes, to the *attraction and repulsion of particles of matter, of molecules and of atoms.*

As I endeavoured to show in my "General Morphology" (in 1866), we arrive at an understanding of *Inheritance* from the complicate phenomena of *propagation,* whereas the phenomena of *Adaptation* are explained by the elementary conditions of *nutrition,* more especially by the trophic irritation exercised on the one hand by the direct influence of the external conditions of life, on the other by the peculiar activity of the organs and of the cells of which they are composed.

In my last chapter I endeavoured to show that in the case of all the different forms of propagation (and also of inheritance) the most essential point is invariably a detachment from the parental organism of a portion possessing the faculty of leading an individual, independent existence. We may, therefore, in all cases expect that the produced individuals—which are, in fact, as is commonly said, "the flesh and blood of the parents"— will receive the