ism, or a structure of parts through the intervention of which their effects become sensible to us. Thus, in the delicate and curious electro-dynamic theory of Ampere, the mutual attraction or repulsion of two magnets is referred to a more universal phenomenon, the mutual action of electric currents, according to a certain fundamental law. But in order to bring the case of a magnet within the range of this law, he is obliged to make a supposition of a peculiar structure or mechanism, which constitutes a body a magnet, viz. that around each particle of the body there shall be constantly circulating, in a certain stated direction, a small current of electric fluid.

(215.) This, we may say, is too complex; it is artificial, and cannot be granted: yet, if the admission of this or any other structure tenfold more artificial and complicated will enable any one to present in a general point of view a great number of particular facts,—to make them a part of one system, and enable us to reason from the known to the unknown, and actually to *predict facts before trial*,—we would ask, why should it *not* be granted? When we examine those instances of nature's workmanship which we can take to pieces and understand, we find them in the highest degree artificial in our own sense of the word. Take, for example, the structure of an eye, or of the skeleton of an animal,—what complexity and what artifice! In the one, a *pellucid muscle;* a lens formed with elliptical surfaces; a circular aperture capable of enlargement or contraction without loss of form: in the other, a framework of the most curious carpentry; in which occurs not a single straight line, nor any known geometrical curve, yet all evidently systematic, and constructed by rules which defy our research. Or examine a crystallized mineral, which we can in some measure dissect, and thus obtain direct evidence of an internal structure. Neither artifice nor complication are here wanting; and though it is easy to assert that these appearances are, after all, produced by something which would be very simple, if we did but know it, it is plain that the same might be *said* of a steam-engine executing the most complicated