

example, an *Amoeba*, or a single-celled plant), could never perform.

No sensible person supposes that carefully devised institutions, which have been established for the good of the whole, as well as for the individual, in every human state, are the results of the action of a personal and supernatural Creator, acting for a definite purpose. On the contrary, every one knows that these useful institutions of organization in the state are the consequences of the co-operation of the individual citizens and their common government, as well as of adaptation to the conditions of existence of the outer world. Just in the same way we must judge of the many-celled organism. In it also all the useful arrangements are solely the natural and necessary result of the co-operation, differentiation, and perfecting of the individual citizens—the cells—and by no means the artificial arrangements of a Creator acting for a definite purpose. If we rightly consider this comparison, and pursue it further, we can distinctly see the perversity of that dualistic conception of nature which discovers the action of a creative plan of construction in the various adaptations of the organization of living things.

Let us pursue the individual development of the vertebrate animal body a few stages further, and see what is next done by the citizens of this embryonic organism. In the central line of the violin-shaped disc, which is composed of the three cellular germ-layers, there arises a straight delicate furrow, the so-called "primitive streak," by which the violin-shaped body is divided into two equal lateral halves—a right and a left part or "antimer." On both sides of that streak or furrow, the upper or external germ-layer rises in