

THE RIDDLE OF THE UNIVERSE

taylor), published his dissertation for the degree at Halle, under the title, *Theoria Generationis*. Supported by a series of most laborious and painstaking observations, he proved the entire falsity of the dominant theories of preformation and scatology. In the hatched egg there is at first no trace of the coming chick and its organs; instead of it we find on top of the yolk a small, circular, white disk. This thin "germinal disk" becomes gradually round, and then breaks up into four folds, lying upon each other, which are the rudiments of the four chief systems of organs—the nervous system above, the muscular system underneath, the vascular system (with the heart), and, finally, the alimentary canal. Thus, as Wolff justly remarked, the embryonic development does not consist in an unfolding of the preformed organs, but in a series of new constructions; it is a true *epigenesis*. One part arises after another, and all make their appearance in a simple form, which is very different from the later structure. This only appears after a series of most remarkable formations. Although this great discovery—one of the most important of the eighteenth century—could be directly proved by a verification of the facts Wolff had observed, and although the "theory of generation" which was founded on it was in reality not a theory at all, but a simple fact, it met with no sympathy whatever for half a century. It was particularly retarded by the high authority of Haller, who fought it strenuously with the dogmatic assertion that "there is no such thing as development: no part of the animal body is formed before another; all were created together." Wolff, who had to go to St. Petersburg, was long in his grave before the forgotten facts he had observed were discovered afresh by Oken at Jena, in 1806.