

diversified forms of the present epoch. That is the conclusion toward which we are tending; and it is wiser to anticipate and welcome it than to turn our backs on it when we see it looming in sight.

Suppose then that animals have succeeded each other in nicely graduated series; that does not demonstrate any genealogical connection between them; it only permits us to accept a theory of such connection. Each separate form in the succession may have been a separate origination. I ask you then to turn to another set of facts—very remarkable and very suggestive. I refer to *comparative embryology*. A careful study of many developing embryos, amongst animals of all ranks, leads to the following conclusions: 1. Every embryo passes through the same identical series of stages, up to the point where it becomes adult. The higher embryos, therefore, pass through a longer series, the lower, a shorter series. 2. The embryonic gradations are the same as the gradations of the animal kingdom presented in a classification. One of the primitive states of the embryo corresponds to the lowest known type of animal; the next state, to the type next superior; and so on. The human embryo, in the progress of development, resembles an Amœba, a Brachiopod, a Worm, a Lancelet, a Shark, a Quadruped. These are not fancies, but solid facts; and it is our business to find out what they mean. 3. The succession of extinct animals presents a gradation which is closely analogous to that presented in the gradations of living animals, and again in the embryonic stages of every individual. We have thus the same succession of ideas three times repeated. Does that show any connection between the successions, so that one may have been derived from and caused by another? Or shall we say this is all coincidence? Believing in intelligible relationship of things, I choose to call this a case of that kind. That is, the gradation of living animals and the gradation of extinct forms result from the gradation of the embryonic series in the individual. It must be that; for the individual is the starting point of all organic phenomena. But, in the embryonic series, we *know* that each