

THE RIDDLE OF THE UNIVERSE

genetic change, on the other hand, by the laws of abbreviated and simplified heredity. That is clearly seen in the embryonic evolution of the psychic organs, the nervous system, the muscles, and the sense-organs. But it applies in just the same manner to the psychic functions, which are absolutely dependent on the normal construction of these organs. Their evolution is subject to great cenogenetic modification in man and all other viviporous animals, precisely because the complete development of the embryo occupies a longer time within the body of the mother. But we have to distinguish two periods of individual psychogeny: (1) the embryonic, and (2) the post-embryonic development of the soul.

I. *Embryonic Psychogeny*.—The human foetus, or embryo, normally takes nine months (or two hundred and seventy days) to develop in the uterus. During this time it is entirely cut off from the outer world, and protected, not only by the thick muscular wall of the womb, but also by the special foetal membranes (*embryolemmata*) which are common to all the three higher classes of vertebrates—reptiles, birds, and mammals. In all the classes of amniotes these membranes (the *amnion* and the *serolemma*) develop in just the same fashion. They represent the protective arrangements which were acquired by the earliest reptiles (*proreptilia*), the common parents of all the amniotes, in the Permian period (towards the end of the palæozoic age), when these higher vertebrates accustomed themselves to live on land and breathe the atmosphere. Their ancestors, the amphibia of the Carboniferous period, still lived and breathed in the water, like their earlier predecessors, the fishes.

In the case of these older and lower vertebrates that