

THE RIDDLE OF THE UNIVERSE

atic zoology distinguishes in the class of mammals had been arranged in 1816 (by Blainville) in three natural groups, which still hold good as sub-classes: (1) the monotrema, (2) the marsupialia, and (3) the placentalia. These three sub-classes not only differ in the important respect of bodily structure and development, but they correspond, also, to three different historical stages in the formation of the class, as we shall see later on. The monotremes of the Triassic period were followed by the marsupials of the Jurassic, and these by the placentals of the Cretaceous. Man belongs to this, the youngest, sub-class; for he presents in his organization all the features which distinguish the placentals from the marsupials and the still older monotremes. First of all, there is the peculiar organ which gives a name to the placentals—the *placenta*. It serves the purpose of nourishing the young mammal embryo for a long time during its enclosure in the mother's womb; it consists of blood-bearing tufts which grow out of the chorion surrounding the embryo, and penetrate corresponding cavities in the mucous membrane of the maternal uterus; the delicate skin between the two structures is so attenuated in this spot that the nutriment in the mother's blood can pass directly into the blood of the child. This excellent contrivance for nourishing the embryo, which makes its first appearance at a somewhat late date, gives the fœtus the opportunity of a longer maintenance and a higher development in the protecting womb; it is wanting in the *implacentalia*, the two older sub-classes of the marsupials and the monotremes. There are, likewise, other anatomical features, particularly the higher development of the brain and the absence of the marsupial bone, which raise the placentals above all their implacental ances-