

brals, and the hard parts are external, and include the muscles; in fact, the two classes are contrasts to each other, and it is difficult even to conceive a being half vertebral, half insect. In this direction, therefore, a transmutation of species cannot be looked for. To quote only one other example, the class of birds stand alone. They may be defined oviparous, warm-blooded bipeds, with anterior limbs for flying. What Cuvier said in a similar discussion respecting the cuttlefish, is equally true here: the birds lead to nothing, they graduate into no other class. They stand between mammifers and reptiles. To convert a bird into a mammifer, or even into something intermediate, is inconceivable, and the impossibility of such a physiological alchemy will appear strongest to those whose knowledge of organisation is most extensive. The idea of a mammiferous animal includes not one condition, but many, all inseparable, viz., utero gestation, mammary glands; and these again involve fleshy lips and tongue for suction, an epiglottis to protect the windpipe, a diaphragm and abdominal muscles, which are also necessary for the same ends. None of these conditions exist in birds, nor are they compatible with the structure of a vertebrate destined to fly, as we might clearly show by fuller illustration. On the other side of the birds we find the