

come of causes at present operative, evolution was an unscientific hypothesis rightly rejected by leading comparative anatomists such as Cuvier. Darwin, however, showed (1) that every species tends to multiply at such a rate as would, if unchecked, completely fill the world in a short space of time; and that so long as the relative numbers of members of the various species inhabiting the globe remained about the same, on an average only two of the young produced by a pair of parents survived; (2) that no two of any brood or litter were ever exactly the same, and that these individual peculiarities were often inheritable; (3) that in the struggle for existence which must necessarily ensue between the too numerous progeny of every species some of these slight individual peculiarities would often determine the survival of their possessors and so be handed on to posterity, and in this way the whole species would slowly change its character. If the species were to spread into two localities where the conditions were dissimilar, different peculiarities would be advantageous in the two cases, and the species would split into two divergent groups or new species. Three main objections had been made to Darwin's view—(1) that species were separated from one another by a barrier of mutual infertility, whereas the breeds of domestic animals produced by artificial selection were all mutually fertile; (2) that geological evidence afforded no evidence of gradual transitions such as he postulated, and (3) that if organs were derived originally from small rudiments, such rudiments must have been at first useless, and therefore could not have determined the survival of their possessors. All three difficulties had been completely cleared away by subsequent investigations; in answer to the first, it had been shown that two extreme varieties of the common European frog refused to breed together though each would breed with intermediate types, so that infertility was of various grades and that no sharp line could be drawn between races and species; with regard to the second difficulty, continued investigation was continually bringing to light series of fossils which exactly agreed with Darwin's postulates, and lastly, it had been shown that organs were never developed out of useless rudiments but out of simple organs and ultimately out of undifferentiated protoplasm in which all the