

scarcest, and others formerly scarce, are now most numerous represented. The variety-making force has been at work with such energy, — perhaps we ought to say, has had so much time for its development, — that almost every isolated rock within gun-shot of the shores has its peculiar living forms, or those very marked races to which Mr. Lowe, in his excellent description of the fauna, has given the name of ‘sub-species.’

Since the fossil shells were embedded in sand near the coast, these volcanic islands have undergone considerable alterations in size and shape by the wasting action of the waves of the Atlantic beating incessantly against the cliffs, so that the evidence of a vast lapse of time is derivable from inorganic as well as from organic phenomena.

During this period no mammalia, not even of small species, excepting bats, have made their appearance, whether in Madeira and Porto-Santo or in the larger and more numerous islands of the Canarian group. It might have been expected, from some expressions met with here and there in the ‘Origin of Species,’ though not perhaps from a fair interpretation of the whole tenor of the author’s reasoning, that this dearth of the highest class of vertebrata is inconsistent with the powers of mammalia to accommodate their habits and structures to new conditions. Why did not some of the bats, for example, after they had greatly multiplied, and were hard pressed by a scarcity of insects on the wing, betake themselves to the ground in search of prey, and, gradually losing their wings, become transformed into non-volant insectivora? Mr. Darwin tells me that he has learnt that there is a bat in India which has been known occasionally to devour frogs. One might also be tempted to ask, how it has happened that the seals which swarmed on the shores of Madeira and the Canaries, before the European colonists arrived there, were never induced, when food was scarce in the sea, to venture inland from the shores, and begin in Teneriffe, and the Grand Canary especially, and