

these laws are not limited by the artificial classification of naturalists. The principle on which Mr. Bakewell proceeded was this:—He first travelled over England, and part of the continent, to discover and select animals of different kinds, possessing certain peculiarities of form, and other qualities, which he was desirous to render permanent. By selecting two animals to breed from, which possessed the desired qualities in an eminent degree, and afterwards selecting from their offspring those in which these qualities were most conspicuous, and breeding again from these, the peculiarities were farther increased. By continuing the same selection through four or five generations, he obtained races that would transmit the same qualities permanently to succeeding generations.*

Some naturalists have maintained, that an additional vertebral bone was amply sufficient to establish a distinct species; but the number of vertebræ is not invariably the same even in man. In some of the negro tribes, an additional vertebral bone is not uncommon. To apply what has been said to fossil conchology:—The molluscous animals that inhabit and construct their shells, have no internal skeleton, and must, therefore, be susceptible of greater change, and possess greater power of adaptation to circumstances, than vertebrated animals, in which the solid bones present obstacles to any essential departure from their original form.

Let us, however, imagine what is very possible; that a number of individuals of one species of bivalve or univalve shell, were driven, during a violent storm, into a distant part of the ocean, where the animals could no longer obtain their accustomed food, but were still able to support life by aliment of a somewhat different kind. Let us suppose that the annoyances to which they had before been subject, from natural enemies or other causes, were changed for annoyances of another kind. Under these different circumstances, is it not probable that the animals themselves would undergo some change, and modify the construction of their shells in some degree, to render them better suited to the new conditions in which they were placed? Thus, in the course of a few generations, we should have a race which conchologists would call a distinct species.

Where a series of tertiary strata of great depth is exposed to observation, as in the case of the sub-Appennine strata, we have the

* Mr. Bakewell, of Dishley, was in a considerable degree self-educated, but he possessed a strong original mind, which was enlightened by study and meditation: he was also a man of great moral worth, and was intimately acquainted with Dr. Priestley, Dr. Darwin, and other eminent philosophers who inhabited the central parts of England, towards the close of the last century. The late Countess of Oxford once asked the author of the present work, *whether he was related to the Mr. Bakewell who invented sheep*. He replied that he was of the same Leicestershire or originally Derbyshire family, and that Mr. Bakewell the *inventor* of sheep said, that "he felt satisfaction, not in having provided for the tables of the rich, but for the families of the labouring classes, to whom a pound of his fat mutton over a dish of potatoes made a cheap and nutritious dinner."