

be irrational to suppose that these peculiar insects either still inhabit or did once inhabit some part of the continents, and may be portions of "ancient and wide-spread groups" once widely diffused, but now restricted to a few insular spots. Among the land snails, if anywhere, we should find evidence either of autochthonous evolution or of specific change. These animals have existed on the earth since the Carboniferous period, and, notwithstanding their proverbial slowness and sedentary habits, they have contrived to colonize every habitable spot of land on the globe—that is, unless in some of these places they have originated *de novo*. In the Azores there are sixty-nine species of land snails, of which no less than thirty-two, or nearly one half, are peculiar, tho nearly all are closely allied to European types. What, then, is the origin of these thirty-two species, admitting for the sake of argument that they are really distinct and not merely varietal forms, tho it is well known that in this group species are often unduly multiplied. Three suppositions are possible. (1) These snails may have originated in the islands themselves, either by creation or evolution from lower forms, say from sea snails. (2) They may have been modified from modern continental species. (3) They may be unmodified descendants of species of Miocene or Pliocene age now existing on the continents only as fossils. As the islands appear to have existed since Miocene times, it is no more improbable that species of that or the Pliocene age should have found their way to them than that modern species should; and as we know only a fraction of the Tertiary species of Europe or Africa, it is not likely that we shall be able to identify all of these early visitors. Unfortunately no Miocene or Pliocene deposits holding remains of land snails are known in the Azores themselves, so that this kind of evidence fails us. In Madeira and Porto Santo, however, where there are numerous modern snails, there are Pliocene beds holding remains of these animals. In Madeira there are, according to Lyell, 36 Pliocene species, and in Porto Santo 35, and of these only eight are extinct. Thus we can prove that many of the peculiar species of these islands have remained unchanged since Pliocene times. While differing from modern European shells, several of these species are very near to European Miocene species. Thus we seem to