

existing species, vegetable and animal, been derived from other species of the earlier periods, it would have been equally possible to demonstrate, by a series of specimens, *their* relationship. Let us again instance the British shells. Losing certain species in each of the older and yet older deposits at which we successively arrive, we at length reach the Red and Coraline Crags, where we find, mingled with the familiar forms, a large per centage of forms now extinct ; then going on to the shells of the Lower Miocene, more than six hundred species appear, almost all of which are strange to us ; and then, passing to the Eocene shells of the *Calcaire grossier*, we find ourselves among well nigh as large a group of yet other and older strangers, not one of which we are able to identify with any shell now living in the British area. There would be thus no lack of materials for forming such a genealogy of the British shells, had they been gradually developed out of the extinct species, as that which M. Barrande has formed of the trilobites. But no such genealogy can be formed. We cannot link on a single recent shell to a single extinct one. *Up* to a certain point we find the recent shells exhibiting all their present specific peculiarities, and beyond that point they cease to appear. *Down* to a certain point the extinct shells also exhibit all *their* specific peculiarities, and then they disappear for ever. There are no intermediate species,—no connecting links,—no such connected series of specimens to be found as enables us to trace a trilobite through all its metamorphoses from youth to age. All geologic history is full of the beginnings and the ends of species,—of their first and their last days ; but it exhibits no genealogies of development. The Lamarckian sets himself to grapple, in his dream, with the history of all creation : we awaken him, and ask him to grapple, instead, with the history of but a few individual species,—with that of the mussel or the whelk, the clam or the oyster ; and we find from his