

*tion* would be greatly less wonderful than a sudden transmutative process such as this, restricted in its operation to groupes of English, Irish, and Manx plants, identical with groupes in Germany, when all the various organisms around them, such as our sea-shells, continued to be exactly what they had been for ages before. A process of development from the lowest to the highest forms, rigidly restricted to the flora of a country, would be simply the miracle of Jonah's gourd several thousand times repeated.

I must here indulge in a few remarks more, which, though they may seem of an incidental character, have a direct bearing on the general subject. The geologist infers, in all his reasonings founded on fossils, that a race or species has existed from some one certain point in the scale to some other certain point, if he find it occurring at both points together. He infers on this principle, for instance, that the boulder clay, which contains only *recent* shells, belongs to the *recent* or post-Tertiary period; and that the Oolite and Lias, which contain *no* recent shells, represent a period whose existences have all become extinct. And all experience serves to show that his principle is a sound one. In creation there are many species linked together, from their degree of similarity, by the *generic* tie; but no perfect verisimilitude obtains among them, unless hereditarily derived from the one, two, or more individuals, of contemporary origin, with which the race began. True, there are some races that have spread over very wide circles, — the circle of the human family has become identical with that of the globe; and there are certain plants and animals that, from peculiar powers of adaptation to the varieties of soil and climate, — mayhap also from the tenacious vitality of their seeds, and their facilities of transport by natural means, — are likewise diffused very widely. There