

history provinces existed at those very remote times in Scandinavia, Bohemia, England, and the United States.

Of Trilobites, 27 species have been found in Bohemia in these "primordial" beds, 71 in Scandinavia, 12 in America, and 10 in England, all referable to the same group of genera, but not one in a hundred of the species being common to the different areas. The doctrine of the universality of a primeval fauna, once so popular, is thus completely and forever overthrown. If it still lingers in the minds of some paleontologists, it is probably because of the wide range of certain plants of the carboniferous era. But besides that every day demonstrates this case to be exceptional, it has also become more and more evident that the apparent anomaly is caused partly by the predominance in that ancient flora of ferns and Lycopodiaceæ, orders of which the living species are diffused over as wide a space, and partly by the abundance of plants like the Sigillariæ, of which there are no living analogues. There is no proof that the coniferæ of the carboniferous era had a more extensive range than the living species of the same class.

Not only in the earliest known paleozoic epoch has M. Barrande now shown that distinct assemblages of species inhabited separate regions, but also that the same law prevailed in as marked a degree during the times of his second and third faunas, or when rocks of the age of the Lower and Upper Silurian of England were formed. At these periods, not only peculiar species of Crustaceans, but Cephalopods also, and other mollusks, as well as corals, flourished; one set in Bohemia, another in Scandinavia, and others in the several great regions before enumerated; in a word, wherever these ancient strata have been carefully studied.

But if separate portions of the earth have at every former era been simultaneously peopled by distinct sets of marine species, owing to variations in climate, in the depth of the sea, the mineral nature of its bottom, or by reason of the position of continents and the larger islands, and many other conditions in the organic and inorganic worlds, there must at every former period have been points where distinct zoological provinces were parted from each other by abrupt and narrow barriers, resembling the Isthmus of Suez or the Isthmus of Panama. It is well known that a distinct marine fauna now prevails on each side of those narrow belts of land, and it is evident that a slight subsidence of the earth's crust, to the amount of only a few hundred feet, could cause one host of species to invade the territory of another; and it might, therefore, have naturally been asked, whether there are any signs of such invasions having been effected during those reiterated upheavals and subsidences to which geology bears testimony. M. Barrande has furnished us with a distinct and satisfactory answer to this question, for he has detected near the upper limits of the Lower Silurian strata of Bohemia (in his *étage D.*) an intercalated and lenticular-shaped mass of fossiliferous rock, containing organic remains, almost all of them specifically identical with fossils found in the overlying Upper Silurian