http://www.geology.19thcenturyscience.org/books/1850-Lyell-Principles/README.htm

they are called, which form so striking a feature in the living creation, were not established at remote eras. Thus the plants of the Coal, the shells and trilobites of the Silurian rocks, and the ammonites of the Oolite, have been supposed to have a wider geographical range than any living species of trees, crustaceans, or mollusks. This opinion seems in certain cases to be well founded, especially in relation to the plants of the carboniferous epoch, owing probably to the more uniform temperature of the globe, at a time when the position of sea and land was less favourable to variations in climate, according to principles already explained in the seventh and eighth chapters. But a recent comparison of the Fossils of the North American Rocks, with those of corresponding ages in the European series, has convinced me that the terrestrial vegetation of the Carboniferous epoch is an exception to the general rule, and that the Fauna and Flora of the earth at successive periods, from the oldest Silurian to the newest Tertiary, was as diversified as now. The shells, corals, and other classes of organic remains show that the earth might then have been divided into separate zoological provinces, in a manner strictly analogous to that observed in the geographical distribution of species now living.

CHAPTER XI.

ON THE SUPPOSED FORMER INTENSITY OF THE IGNEOUS FORCES.

Volcanic action at successive geological periods.—Plutonic rocks of different ages —Gradual development of subterranean movements—Faults—Doctrine of the sudden upheaval of parallel mountain-chains—Objections to the proof of the suddenness of the upheaval, and the contemporaneousness of parallel chains—Trains of active volcanos not parallel.—As large tracts of land are rising or sinking slowly, so narrow zones of land may be pushed up gradually to great heights—Bending of strata by lateral pressure—Adequacy of the volcanic power to effect this without paroxysmal convulsions.

WHEN reasoning on the intensity of volcanic action at former periods, as well as on the power of moving water, already treated of, geologists have been ever prone to represent Nature as having been prodigal of violence and parsimonious of time. Now, although it is less easy to determine the relative ages of the volcanic than of the fossiliferous formations, it is undeniable that igneous rocks have been produced at all geological periods, or as often as we find distinct deposits marked by peculiar animal and vegetable remains. It can be shown that rocks commonly called trappean have been injected into fissures, and ejected at the surface, both before and during the deposition of the Carboniferous series, and at the time when the