and not united by a continuous chain of effects flowing from some one primal condition toward a determinate and permanent state. It is certain, that the study of igneous rocks alone will never enable us to decide how far this speculation is well founded, since they are not characteristic of time, nor capable of giving the least information as to the organic enrichment and atmospheric investment of the globe, except by combination with the data afforded by a study of the stratified rocks. To these, therefore, we must immediately apply.

PRIMARY SYSTEMS OF STRATA.

Gneiss and Mica Schist System.

Composition. — It is a general truth, that to every principal mass of stratified rocks belong some remarkable mineral types of composition. The primary strata, viewed together, distinguish themselves by the superabundance of hard siliceous and argillaceous rocks, with crystallised or concretionary limestones; the secondary rocks have more variety of arenaceous and calcareous members; in the tertiary strata loose sands, marls, and clays abound remarkably, while these scarcely occur at all among the primary rocks.

The same truth is, perhaps, even more clearly perceived by comparing the successive systems and formations, and deserves more attention than has of late been given to it, since the study of organic remains has opened so many brilliant views of another kind, though equally related to, and characteristic of, geological time.

The materials of the rocks which enter into the composition of the gneiss and mica schist systems, are such as to form siliceous, argillaceous, and calcareous aggregates, somewhat resembling those of the later systems of rocks; but they are usually in a very different state of molecular aggregation. The siliceous strata of these ancient rocks (gneiss, mica schist, &c.) consist of the same minerals as those which abound in secondary sand-