

appear clearly to evince their aqueous origin, no other essential differences being discoverable between them, except the great thickness and extent of the ancient rocks ; and could we raise for examination the bed of the Atlantic or the Mediterranean, perhaps a part of this discrepancy might vanish ; for Donati's researches on the bed of the Adriatic show the great extent of the modern deposits in that sea.

The unstratified rocks tried by the same test, the form of their masses, can in no manner be paralleled to the productions of water. The dykes and veins which belong to the same class as the huge amorphous masses, and are often of the same kind of rock, do resemble in their forms, to a considerable degree, the known products of modern volcanoes : particular ancient unstratified rocks, as basalt, exist in forms, and under circumstances, very similar to analogous rocks, the fruit of volcanic fires.

The chemical composition of the two classes of rocks resembles in some points, and differs in others : they are in some points similar, for they contain some identical minerals, and many identical elementary substances ; but numerous minerals are found in the unstratified rocks which are not known among the others. Limestone, sandstone, and clay, which constitute so many of the stratified masses, are forms of mineral aggregations such as never occur among granites, basalts, porphyries, &c., which make up a large portion of the unstratified rocks.

But the difference in their mineral aggregation is yet more remarkable. The ingredients of the stratified rocks appear almost always in such a state, as to suggest to the observer their aggregation from a state of solution, suspension, or drifting in water : limestone rocks, for instance, appear to have been collected, as smaller quantities are at this day, from the decomposition of water by chemical and vital agencies ; clays were clearly collected from matter finely divided and diffused or suspended in water. Sandstones are as clearly the accumulation of grains of quartz, or other minerals worn and