gone such an energetic metamorphism without the beds of sandstone and clay, associated with them, having also undergone some modification of the same kind. The siliceous beds accompanying the saccharoid limestone have, in short, a character of their own. They are formed of small grains of transparent quartz more or less cemented one to the other in a manner strongly resembling those of the saccharoid limestone. Between these grains are usually developed some lamellæ of mica of brilliant and silky lustre, of which the colour is white, red, or green ; in a word, it has produced a *quartzite.* Some veins of quartz frequently traverse this quartzite in all directions. Independent of the mica, it may contain, besides, the different minerals already mentioned as occurring in the limestone, and particularly silicates—such as disthene, andalusite, staurotide, garnet, and hornblende.

The argillaceous beds present a series of metamorphisms analogous to the preceding. We can follow them readily through all their gradations when we direct our attention towards such granitic masses as those which constitute the Alps, Pyrenees, the Bretagne Mountains, or our own Grampians. The schists may perhaps be considered the first step towards the metamorphism of certain argillaceous rocks ; in fact, the schists are not susceptible of mixing with water like clay; they become stony, and acquire a much greater density, but their chief characteristic is a foliated structure.

Experiment proves that when we subject a substance to a great pressure a foliated structure is produced in a direction perpendicular to that in which the pressure is exercised. Everything leads us, therefore, to believe that pressure is the principal cause of the schistous texture, and of the foliation of clay-slates, the most characteristic variety of which is the roofing-slate which is quarried so extensively in North Wales, in Cumberland, and various parts of Scotland in the British Islands; in the Ardennes; and in the neighbourhood of Angers, in France.

In some localities the slate becomes siliceous and is charged with crystals of felspar. Nevertheless, it still presents itself in parallel beds, and contains the same fossil remains still in a recognisable state. For example, in the neighbourhood of Thann, in the Vosges, certain vegetable imprints are perfectly preserved in the metamorphic schist, and in their midst are developed some crystals of felspar.

Mica-schist, which is formed of layers of quartz and mica, is found habitually associated with rocks which have taken a crystalline structure, proceeding evidently from an energetic metamorphism of beds originally argillaceous. Chiastolite, disthene, staurotide, horn-