

In others, they may represent cleavage, as pointed out by Sedgwick and Darwin. Or they may indicate the planes along which, under intense pressure, the longer axes of crystallizing minerals would naturally range themselves. In a rock, homogeneous in chemical composition and general texture, foliation might be induced along any dominant divisional planes. If these planes were those of cleavage or of shearing, the resultant foliation might not appreciably differ from that along original bedding planes.⁹⁷ But it may be doubted whether a cleavage foliation of clastic sedimentary strata could run over wide areas without sensible and even very serious interruptions. In most large masses of sedimentary matter, the usual alternations of different kinds of sediment could not but produce distinct kinds of rock under the influence of metamorphic change. Where foliation coincides with cleavage over large tracts, it will almost certainly be crossed by bands, more or less distinct, coincident with the original bedding whether of sedimentary or of eruptive rocks, and running oblique to the general foliation, as bedding and cleavage do, save where they may happen to coalesce. Where a massive rock of generally homogeneous composition, such as a felsite or granite, has been intensely sheared, a rearrangement or recrystallization of its minerals has taken place along the planes of shearing. Such a rock is thus transformed into a schist. Even rocks of much more varied structure, like Archæan gneisses, have been subjected to such changes from shearing as not only to lose entirely their original structure, but to acquire a new foliation parallel to the shearing planes.

⁹⁷ Jannettaz points out that the cleavage of the slates in the Grenoble Alps is parallel to the foliation of the mica-schists. Bull. Soc. Geol. France (3), ix. 1881, p. 649.