

*Relation of Faults, Mineral Veins, Dykes, &c., to
the great Lines of disturbed Rocks.*

It is noticed, as a circumstance of common occurrence, that mineral veins are no otherwise different from faults than by reason of the fissures which these have opened in the rocks being filled by sparry and metallic matters. This filling of a fissure constitutes a mineral vein; a similar fissure filled by basaltic or other rocks would be called a rock dyke; if occupied by clay and soft materials, a clay dyke. The point of importance in each of these cases is the mechanical formation of a fissure of the rocks along the plane of the fault; and it is to be determined by further inquiry, what was the cause of this particular line being followed by the disturbing force, and how the fissure, when made, came to be filled with its sparry, rocky, or soft argillaceous contents.

There appears to be some general relation observable between the lines of fault and the axes of great subterranean movement: that a "master fault" swallows up the smaller ones, or ramifies into them near the surface, has long been believed by the colliers of Somersetshire (as we learn from Dr. W. Smith). It appears, from our own and other researches, that the fissures accompanying mineral veins in the north of England, in the Penine Chain, and on the side of the Vale of Clwydd, terminate in such master faults; it also appears, by a careful analysis of phenomena, that mineral veins are so related to axes of disturbed strata, (like the Stiperstones, Greenhow hill, &c.), that they spring out from such, or tend to cross them at right angles, and scarcely appear anywhere abundant except in the vicinity of points or lines of great disruption of the rocks. Faults, dykes, and veins must, therefore, be referred, as to the origin of the fractures, to the same general cause which placed the strata of the mountains in their disturbed and inclined positions.