

forces of great intensity determined to a limited area. Fissures will in this case be formed so as to pass through the axis and radiate from the centre of the cone, as is observed to be the case in the Plomb du Cantal. If in addition to a general elevatory force, supposed to act in the production of longitudinal fissures, a partial force was simultaneously acting at a particular point, the fissures would deviate from parallelism to approach that point. An instance of this was observed by Hopkins, in connection with a limited elevation of millstone grit, through the coal strata of Derbyshire.

4. *Faults*.—The masses thus separated by fissures might, upon the weakening of the elevatory force, fall back in some confusion, so as to occasion *faults* of different kinds.

We shall only observe further on this subject, that a circumstance of importance in determining the direction of the lines of fissure is the weighting of the masses, which for many reasons must be supposed to have been often very unequal. The more general the mechanical agency, and the more uniform the resistance of the masses, so much the more perfectly straight and parallel the systems of simultaneous and successive fissures.

The conclusions thus obtained seem to apply with special accuracy to the veins and cross courses of Cornwall, Brittany, Cumberland, and Northumberland, the Hartz, the Erzgebirge, and other districts, and assist very much to strengthen the conviction derived from other phenomena, that the great faults and other forms of disturbance may have been occasioned by single continuous efforts of general subterranean forces. If so, it is difficult to believe they can have been due to such effects as these made by modern earthquakes.

Periods of Ordinary and Critical Action.

Whatever may be the fate of De Beaumont's speculation regarding the elevation of mountain groups, at particular geological æras, and in certain geographical parallels, the