gations in lines of particular rocks, and in closed cavities of rocks, the mixture of fusible and infusible substances, and the variation of the contents of veins according to *their directions*, and other characteristic facts.

All of these excepted facts, indeed, appear indicative of other agencies and polarities accompanying and governing the deposition of metallic ores. It is difficult to doubt the truth of the views which ascribe these peculiar and characteristic arrangements to electrical action, and perhaps the principal problem now remaining, is to determine whether, as Mr. Fox believes, the electrical currents were voltaic, generated by the chemical action of particular solutions on particular substances, or thermo-electric, depending on the application and conduction of heat. As far as experimental research goes, the labours of Becquerel, Crosse, Fox, and Bird appear at present to give the advantage to voltaic electricity as the agent of arrangement in metallic deposits. The other source of electrical power has been less inquired into in this respect; and yet, when we consider the facts of the communication established by metallic veins of different conducting power, from the cold surface to the hot interior of the globe, and recollect that permanent differences of subterranean temperature are commonly observed among contiguous rocks (as the killas and granite of Cornwall, which differ 3°), it is difficult to check the belief that thermo-electric currents, however weak in intensity, are *now* important in their agency, and may *formerly* have been much more so.

In these remarks we have chiefly in view the *arrangement* of the substances in a vein; the *accumulation* of these may be due to quite different causes. In some cases it really appears that a complete account of the accumulation of the substances is very difficult to collect, except we call in successively the solvent powers of water and heat. The formation of sulphurets is obviously one of the most important of all the facts requiring explanation in mineral veins, because a very large proportion of metallic ores (tin is the principal