

the distribution of, at least, the crystallised materials. The more closely the investigation is made, the less certain appears the connection *in time* between the production of the fissure and its repletion. If the relative ages of *vein fissures* may be known by their intersections, this does not so clearly apply to *their contents*; and thus we find it quite possible that no long geological period, such as Werner contemplated, may have intervened between the older and the younger vein-fissures of a given district.

It certainly appears at present unsafe to adopt any one of the views here noticed *exclusively*. Sublimation and re-crystallisation of metallic matters (whether pure metals, sulphurets, or oxides) are common phenomena; and the passage of veins downwards to heated regions is too probable to render it doubtful that such operations have sometimes contributed to fill the fissures of rocks. Mr. Patterson's experiment of the influence of steam in causing the *sublimation of galena* in an earthen tube heated in the middle (*Phil. Journal*, 1829), is an important illustration.

The deposition of blende, sulphuret of iron, carbonate of lime, sulphate of barytes, quartz, &c. in cavities of organic bodies, and in other situations, by the agency of water, must exempt Werner from the charge of *absurdity* in attributing to aqueous solution some of the phenomena of the repletion of mineral veins; but, as a general explanation, his system is of no value.

Nor does it appear, at present, just to attribute a much larger measure of success to Playfair's application of the Huttonian hypothesis. It is, indeed, certain, in many instances, that metallic impregnations are mixed with rock dykes, or lie in veins by the side of them. Some veins may have been filled by injection, especially such as appear very simple in their structure, uniform in their composition, and wholly independent of the neighbouring rocks in the distribution of their contents. Such veins there are; but this speculation does not *well* meet the cases of many parallel bands in a vein, segre-