

may be found productive. First, it is chiefly in the limestone district that the veins are productive, though the fissures traverse a vast thickness of superincumbent shales, grits, and coal. Secondly, in a series of limestones, gritstones, and shales, which margin a vein, it will happen that, when inclosed between walls or cheeks which are both argillaceous, the vein will be unproductive, and generally "nipped," or reduced in width; with argillaceous beds on one side, and gritstones or limestones on the other, the same effects appear, but in an inferior degree; gritstone opposing gritstone yields irregular results, according to the mass and quality of the gritstone, so that in several districts (Grassington, Allenhead, &c.) much lead ore has been found in such situations; but when limestone is opposite to limestone, the vein is always most productive. Now, if we consider that, in the many displacements of veins, a thick limestone rock will be less frequently carried altogether away from its fellow beds than a thinner one, we see at once a reason why the "main limestone" of Swaledale (or "twelve fathom" limestone of Aldstone) is by far the most productive among the "bearing beds" of those counties; for *it is the thickest limestone* there known. There may be other reasons in addition; but this is obvious and important, and agrees with an opinion of those countries, which affirms that veins of small amount of dislocation (or "throw" as it is called) are, on the whole, more regularly productive than those attended by enormous displacement. (See Forster and Sopwith on the Veins of Aldstone Moer; and Geology of Yorkshire, vol. ii.)

In Cornwall, some veins bear tin or copper both in granite and killas; others yield more in one of these rocks; the veins are also very unequal in their produce in relation to depth from the surface; yet, as a general result, it seems to be admitted by all writers, that the contents of the veins undergo real and decided variations wherever the bounding rocks (or "country," as the miners term the mass of rocks adjoining a vein) experience