

ous veins has been given by professor Jameson: they may also be called veins of segregation.

But the veins to which attention is now directed had a different origin, and disclose a different history. They sometimes may appear insulated in a mass of quite different rock, but there is little or no gradation of mineral character at the common surface, and, when carefully traced, the veins are found connected with larger masses of their own substance at no great distance. (See diagram No. 84. p. 76.) Recollecting that all the igneous rocks, found intermixed with the strata, have been pressed by considerable mechanical force, it is an unexpected fact that veins, such as are now described, branching off into the minute cracks and fissures of the stratified masses, should be witnessed almost exclusively in granitic and sienitic compounds. Nor is our surprise lessened, when we find the lava of existing volcanoes occasionally assuming the shape of veins, as well as of dykes, in the fissured substance of the crater and sides of the mountain.

Why, for example, should it almost never occur that the substance of porphyritic and basaltic dykes, whether they pass through slate, coal, sandstone, or limestone, is extended from the main body into the numerous small cracks and fissures which margin the dyke; while, on the other hand, there are few situations where granite comes in contact with gneiss, clay slate, limestone, mica slate, or hornblende slate, without throwing off many branches into those rocks?

One reason may be, that the porphyritic and other 'trappean' dykes, injected among the strata while they were cold, lost, like lava at the surface, their heat and fluidity too rapidly to penetrate the small fissures; while the enormous masses of granite in contact with the strata which they penetrate, may have retained their fluidity through a considerable period. But this is probably not the whole truth. One effect of the igneous rocks is to produce fissures in the stratified masses; and it is very conceivable that the small lateral fissures