to contain any ore, and often entirely disappears: on sinking through the toadstone to the second limestone, the ore is found again, but is cut off by a lower bed of toadstone, under which it appears again in the third limestone. In strong veins, particles of lead occur in the toadstone, but in very small quantities.

If mineral veins were filled from above by metallic solutions, it is impossible to conceive that the nature of the rock should change the quality of the ore; much less could the ore disappear in one stratum, and appear again in a stratum below it. Nor could the vein be filled with melted matter ejected from below; for in either case it would be equally impossible, to explain why the ore disappears in the toadstone, though the vein is continued through it. See Plate IV. fig. 5, where *b*, *b*, *b* are three beds of limestone divided by beds of toadstone *e e*, and covered by sandstone. When the vein descends to the first bed of toadstone *e*, the ore disappears; but on sinking through to the second bed of limestone, it is found again; it disappears a second time at the next bed of toadstone, and reappears in the lower limestone, 3. Another vein, *a a*, is supposed to penetrate the beds of toadstone *e e*, but contains little ore where it passes through them. The upper part of the vein *a*, is represented as penetrating the superincumbent sandstone, which is sometimes the case: in this upper part of the vein, the most curious productions of the Odin mine, near Castleton, are discovered. Such facts prove that these veins were not filled from above. Professor Jameson has conjectured that the beds of toadstone and limestone in Derbyshire, with the metallic veins, were all cotemporaneous, and that the toadstone crossed through the veins, at the time of their formation; but the different organic remains in the upper and lower beds of limestone preclude the possibility of their having been formed at the same time. The zoophytes in the lower bed of rock could not be living and co-existent with those in the upper, nor with the vegetable remains occasionally found in the sandstone, which frequently covers the whole, and into which the veins sometimes shoot. Cuvier has well observed, that the existence of different organic remains offers incontestable proofs, that the upper and lower strata in which they were found, were formed in succession. As a farther proof of the influence which the position of the rock has upon the vein which intersects it, the miners both in Wales and Derbyshire maintain, that wherever there is a depression in the strata, and they dip on both sides towards the vein, (see Plate VII. fig. 9;) in such situations, the richest veins occur.

If metallic matter were not poured in from above, nor ejected from below, in what manner did it come into the vein? The state of chemical science, and the facts at present known, are too limited to furnish a solution to this interesting question. There are, however, certain indications which may serve as a clue to future discovery. The variation of the mineral products in veins, as they pass through different strata, seems to prove, that the strata were efficient