

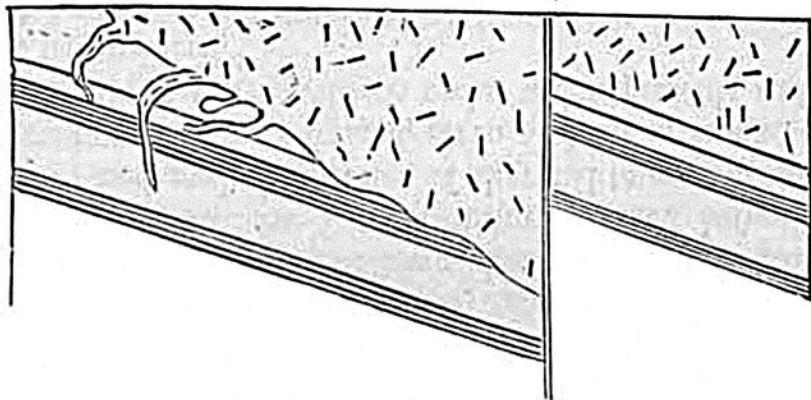
ing, are of modern origin, in which crystals, not only of mica, but of quartz, are common, together with felspar and hornblende. It is easy to conceive how such volcanic masses may, at a certain depth from the

surface, pass downwards into granite.

I have already hinted at the close analogy in the forms of certain granitic and trapped veins; and it will be found that strata penetrated by plutonic rocks have suffered changes very similar to those exhibited near the contact of volcanic dikes. Thus, in Glen Tilt, in Scotland, alternating strata of limestone and argillaceous schist come in contact with a mass of granite. The contact does not take place as might have been looked for, if the granite had been formed there before the strata were deposited, in which case the section would have appeared as in fig. 686; but the union is as represented in fig. 687, the undulating outline of the

Fig. 686.

Fig. 687.



Junction of granite and argillaceous schist in Glen Tilt. (MacCulloch,*)

granite intersecting different strata, and occasionally intruding itself in tortuous veins into the beds of clay-slate and limestone, from which it differs so remarkably in composition. The limestone is sometimes changed in character by the proximity of the granitic mass or its veins, and acquires a more compact texture, like that of hornstone or chert, with a splintery fracture, and effervesces feebly with acids.

The annexed diagram (fig. 688) represents another junction, in the same district, where the granite sends forth so many veins as to retain late the limestone and schist, the veins diminishing towards their termination to the thickness of a leaf of paper or a thread. In some places fragments of granite appear entangled, as it were, in the limestone, and are not visibly connected with any larger mass; while sometimes, on the other hand, a lump of the limestone is found in the midst of the granite. The ordinary colour of the limestone of Glen Tilt is lead blue, and its texture large-grained and highly crystalline; but where it approximates to the granite, particularly where it is penetrated by the smaller veins, the crystalline texture disappears, and it assumes an appearance exactly resembling that of hornstone. The associated argillaceous schist often passes into hornblende slate, where it approaches very near to the granite.†

* Geol. Trans., 1st series, vol. iii. pl. 21.
† MacCulloch, Geol. Trans., vol. iii. p. 259.