

case the dike stands prominently out in the face of precipices, or on the level surface of a country.

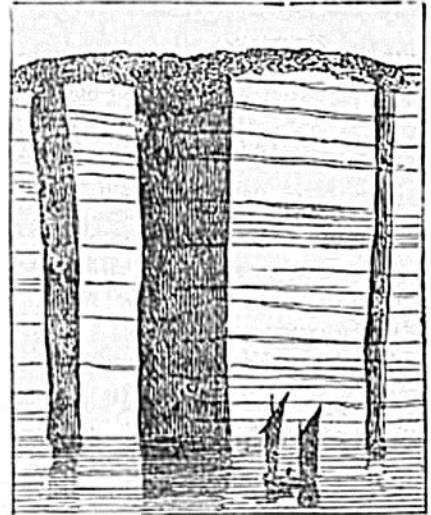
In the islands of Arran and Skye, and in other parts of Scotland, where sandstone, conglomerate, and other hard rocks are traversed by dikes of trap, the converse of the above phenomenon is seen. The dike, having decomposed more rapidly than the containing rock, has once more left open the original fissure, often for a distance of many yards inland from the sea-coast, as represented in the annexed view (fig. 625). In these instances, the greenstone of the dike is usually more tough and hard than the sandstone; but chemical action, and chiefly the oxidation of the iron, has given rise to the more rapid decay.

There is yet another case, by no means uncommon in Arran and other parts of Scotland, where the strata in contact with the dike, and for a certain distance from it, have been hardened, so as to resist the action of the weather more than the dike itself, or the surrounding rocks. When this happens, two parallel walls of indurated strata are seen protruding above the general level of the country and following the course of the dike.

As fissures sometimes send off branches, or divide into two or more fissures of equal size, so also we find trap dikes bifurcating and ramifying, and sometimes they are so tortuous as to be called veins, though this is more common in granite than in trap. The accompanying sketch (fig. 626) by Dr. MacCulloch represents part of a sea-cliff in Argyleshire, where an overlying mass of trap, *b*, sends out some veins which terminate downwards. Another trap vein, *a a*, cuts through both the limestone, *c*, and the trap, *b*.

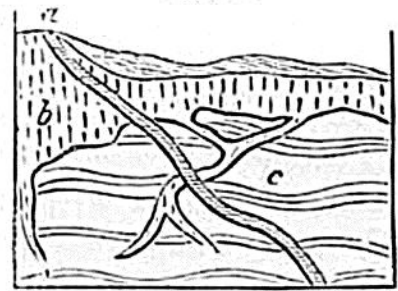
In fig. 627, a ground plan is given of a ramifying dike of greenstone, which I observed cutting through sandstone on the beach near Kildonan Castle, in Arran. The larger branch varies

Fig. 625.



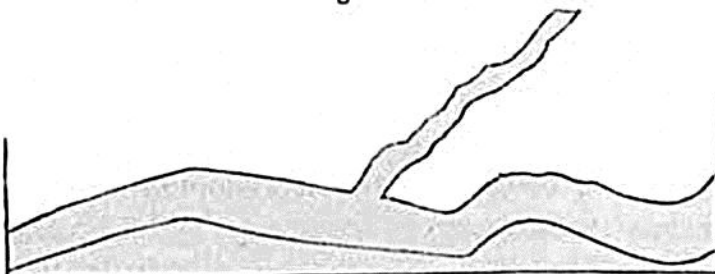
Fissures left vacant by decomposed trap. Strathaird, Skye. (MacCulloch.)

Fig. 626.



Trap veins in Airdnamurchan.

Fig. 627.



Ground plan of greenstone dike traversing sandstone. Arran.