have been changed in character for a short distance from the agent that has been employed in effecting that minor kind of metamorphism (figs. 4 and 9).

On a much larger scale, the phenomena we meet with in a truly metamorphic region are as follows. In the midst of a tract of mica-schist, gneiss, or other altered rocks, a boss of granite (or one of its allies) rises, like those for instance of Dartmoor and Cornwall or of the north end of the Island of Arran. At a distance from the granite the beds may consist, perhaps, of unaltered shale, or of slate, sandstone, and limestone. As we approach the granite, the limestones become crystalline, and often lose all traces of their fossils; the sandstones harden and pass into quartz-rocks, and the shales or slates, or sandy beds and shales, lose their ordinary bedded texture, and pass by degrees into mica-schist, or perhaps gneiss, in which we find rudely alternating laminæ of quartz, felspar, and mica, often arranged in gnarled or wavy lines (foliation, figs. 10 and 11). As we approach the granite still more closely, we find possibly that, in addition to the layers of mica, quartz, and felspar, distinct crystals, such as garnets, staurolites, schorl, &c., are developed near the points of contact, both in the gneissic rock and in the granite itself.

It is not necessary for my argument that I should describe these minerals. It is sufficient at present to state the fact that such minerals are developed under these circumstances, and this is due to the influence of metamorphism.

Furthermore in some cases, as in the Laurentian rocks of Canada, great thicknesses of *interstratified* gneiss are so crystalline that, when a hand specimen or even a small part of the country is examined, they