

the gneissic granite generally graduates into gneiss, yet in some places, there is a hard boundary between them.

If the rocks, however, are followed westward along the strike of the rocks, the change is not so gradual, as there are rather sudden jumps from granitic to schistose rocks; while in the latter are found outliers, either having a nucleus of porphyritic oligoclasic granite, or being entirely gneissic granite. These usually are suddenly replaced by schists, as if they were small tracts which had been subjected to an extra action, prior to the time of the regional metamorphism.

But if we go southward from the mass of the porphyritic oligoclasic granite, there is a complete change in the character of the metamorphism; as here in places margining it are gneissic granites often orthoclasic and fine-grained, but having associated, and alternating with them, coarse-grained and oligoclasic beds. While to the S.E., at Galway town, there is a complete change of rocks, principally hornblendites, that come in against the granite, and in a few small patches on it. This small area of schist apparently in such close proximity to the mass of the oligoclasic porphyritic granite seems peculiar. This, however, might perhaps be explained by phenomena that can be studied to the westward near Roundstone and Slynce Head; but as it would take some time, and the rocks are not of interest in the present inquiry, it appears sufficient to have recorded their presence.

In the Co. Galway the oligoclasic porphyritic gneissic granite, especially across the strike of the rocks, is a portion of the general graduation from the oligoclasic porphyritic granite into the schists and unaltered rocks: but in the Castlebar district, Co. Mayo, there are courses and masses of it that evidently were intruded into their present positions. These Mayo rocks are very interesting, because among the Laurentians of Canada we find somewhat similar gneissic granite as intruded masses (called Labradorians and Norians by the Canadian geologists and marked La on Selwyn's map).

From the published writing in connection with the oligoclasic granite and associated rocks of the Co. Donegal, it is evident that the sequences are somewhat similar to those in the Counties Galway and Wexford; there being granite that in places graduates through gneiss into schist; while in other places, as at the south of the Galway, porphyritic granite, different groups of gneissic rocks, comes in. At the same time, however, as a general rule, the margin of the granitoid rocks is here more marked than in either Galway or Wexford.

It is unnecessary to further individualize the Irish localities; but to certain traits of metamorphism I would draw attention. Years ago I pointed out<sup>1</sup> that in the West Galway and Mayo districts, rocks in the "Second Stage"<sup>2</sup> of metamorphism followed the planes of the most conspicuous structures in the original rocks; let this structure be lamination, cleavage, fine jointing, oblique lamination, spheroidal structure, concretionary structure, or any of the wavy

GEOL. MAG. 1871, Vol. VIII. pp. 263-268.    <sup>2</sup> Geology of Ireland, chapter x.