a precisely similar red gneiss that is found showing the intrusive contacts against the anorthosite outlier in Litchfield park, and which is regarded as an unquestionable phase of the syenite. The rock here however is not so mashed as at Little Falls, many augen remaining which are only partially granulated. The color change makes it an easy matter to determine just how much granular material has been produced from the crushing of each large feldspar, and the whole forms a very striking and instructive rock.

Amount of differentiation of the syenite. The field evidence, both at Diana and at Tupper lake, seems conclusive that the syenite varies into a quite basic, gabbroic-appearing rock on the one hand and into red, granitic gneisses on the other, showing thus considerably more differentiation in place than the anorthosites exhibit. The writer is also of the opinion that certain magnetite deposits of the region have originated as extra basic segregations from the syenite magma, in strict parallelism with the similar development of the titaniferous magnetite ore bodies of the anorthosite. He has however yet to meet with a case where the evidence for this is decisive, so that there is no intention here to emphasize this view unduly.

It is not yet clear whether the differentiation shown by the syenite is wholly due to changes in the rock mass itself during cooling, after the ordinary manner of such changes in igneous rocks, or whether it is in part due to the incorporation in the igneous mass of material melted away from the inclosing rocks. If the latter process ever takes place on a large scale, we might expect to find it here, in connection with these very large, and very deep seated igneous masses. The general sharp and clear-cut character of the contacts between the intrusives and the various rocks which they cut, as well as the corresponding sharpness of the contacts against the various inclusions of these rocks in the intrusives, does not seem indicative of any incorporation. Nor does the character of the border portion of the intrusive mass vary from place to place, as it successively cuts rocks of different character, as would naturally be expected on this view. Yet it is difficult to bring certain features in harmony with the other view. The usual result of differentiation is to produce a rudely radial