

augite syenite and gabbro, are very suggestive. Like the intermediate rock of column 6, it departs most widely from both the syenites and the anorthosites in its magnesia percentage, the general Adirondack intrusives being abnormally low in that oxid. It occupies an intermediate position between syenite and gabbro, rather than between syenite and anorthosite, and as such is nearer syenite than gabbro chemically. Through the kindness of Professor Smyth, the writer is in possession of a slide and specimen of this rock. The analysis gives the iron as all in the ferrous condition, but there is quite a little magnetite in the rock, and a rough calculation indicates its approximate composition to be 21% orthoclase, 36.75% albite, 13.75% anorthite, 3% magnetite and 25% augite and hornblende. The feldspar content is quite like that of the preceding rock, the augen consisting of labradorite and the granular feldspar of microperthite and acid plagioclase.

The remaining seven analyses, no. 10 excepted, are all of unmistakable syenite and gave an excellent representation of its variation. The ferrous iron percentage is mostly high, and the results of some of the analyses tend to throw doubt on the reliability of the entire series of ferrous iron determinations, and hence to greatly complicate attempts to calculate the mineral percentages. The two most clearly abnormal results are those of analyses 9 and 13. In the former case the result of the ferrous iron determination exactly equaled the total iron in the rock, yet the thin section showed considerable magnetite present, and a rough separation by means of heavy solutions and a bar magnet proved the presence of at least 5% of that mineral. In the latter case the total iron present is 3.42%, yet the ferrous iron result exceeded 5%. While only these two were on their face erroneous, others, such as nos. 10 and 11, are quite suspicious. The disturbing cause can not be pyrite, since there is so little of it present that the sulfur percentage does not in general reach .01%. It is difficult to see how carbonaceous matter other than graphite can be present, and in an igneous rock any considerable amount of graphite would be surprising. The cause of the vitiation is as yet undetected.

The only analysis so far made of the augite syenite which occurs cutting the anorthosite, analysis 8, indicates that to be