

ience with the ordinary Adirondack anorthosites, white feldspar is rare and where occurring is due to local alteration, which is distinctly not the case in these "Whiteface" rocks. These are also much richer in hornblende and pyroxene than the ordinary anorthosites, though nearly pure feldspathic types have some small local development, as for example near the bridge at Franklin Falls. They differ also in the prevailing very gneissoid character, but occasional feldspar augen do occur and sometimes reach considerable number and size. A single hand specimen of the feldspathic rock from Franklin Falls which lies before me, shows three such augen which are more than an inch in length, besides several smaller ones. The structure is plainly cataclastic in these less gneissoid types.

The slides from the Clinton and Franklin county rocks show a general predominance of hornblende over pyroxene, though both occur in considerable amount. The pyroxene is a deep green augite, no hypersthene having been noted. The feldspar is mostly labradorite, as indicated by maximum extinctions of from  $22^{\circ}$  to  $27^{\circ}$  in the different slides. They show marked strain phenomena, such as undulatory extinction, bent twinning lamellae, and wedge-shaped or pinched out twinning lamellae. There is always some untwinned feldspar present, which is however thought to be labradorite. The accompanying minerals are the same as in the usual anorthosite, iron ores, zircon, apatite, titanite, garnet, and sometimes a little quartz, usually as a by-product of the garnet formation. The mineralogy of the rock, the local cataclastic structure, and the fact that it occurs in a considerable mass, surrounded on all sides by other rocks, seem to point to its igneous nature. The apparent interbanding with Grenville rocks at the edge of the mass gives that portion a sedimentary look, but all the other igneous rocks of the district show similar phenomena at their borders, and it would seem that the clues to the origin of these rocks must be sought in the least changed, most massive portions, rather than in their peripheral phases where metamorphism has been most excessive. The rock is therefore regarded as igneous and as belonging to the later intrusives. Its localized distribution would seem to indicate that it represents a separate intrusion rather