

bedded and like an integral part of the series. But their composition and character seem to point to the igneous origin of a large part, if not the whole, and they likely represent dikes, sheets and small intrusive masses, somewhat later than the sediments.

All these rocks are often cut by rusty looking amphibolite dikes which cut across the foliation, and represent somewhat later intrusions, likely of diabase, but so old and profoundly altered as to present little resemblance to the original rock except in composition.

These gneisses are further cut by yet later granites and gabbros, rocks which have not been so profoundly metamorphosed, but which still retain sufficient traces of their original structures as to render their origin certain. The finding of these is quite what should be expected, since all younger igneous rocks must have cut their way through these gneisses in working their way toward the surface.

At the present day the Grenville rocks are found in numerous long, narrow belts around the borders of the Adirondacks, but mostly only in small, disconnected patches in the heart of the region. The reasons for this will appear later, but in a word it seems due in large measure to the greater amount of erosion which the Precambrian rocks have undergone in the latter situation. The belts are larger and more numerous on the south and west sides, and are infrequent on the north, except at the extreme northwest. Kemp has emphasized the greater abundance of limestone in the belts on the west and the greater quantity of quartzose gneisses on the east. In the large way this is the case, though both rocks are found in each locality. Both are also found in the scattered patches which extend through the heart of the region.

The base and summit of the Grenville are both unknown, and the thickness of the series is therefore purely a matter of guesswork. The rocks were deposited all over the region, but erosion has removed all but the present belts and patches. The lack of