

very extensive recrystallization ; (3) the frequent occurrence of graphite in all rocks of the class, and (4) the fact that the gneisses of this class have in many cases at least the composition not of igneous rocks but of sands and muds—combine to make it extremely probable that we have, in the case of many of these rocks at least, extremely altered forms of very ancient sediments.

Quartzite.

The quartzite occurs in well-defined bands, in the vicinity of the limestones. It is sometimes quite pure, consisting of translucent or transparent vitreous quartz, but frequently holds garnet, sillimanite or other minerals. It is well seen at Darwin's Falls and elsewhere, near the village of Rawdon, as well as all through the Laurentian district to the south of that place. Amphibolite is a common rock, occurring in association with the gneisses in all parts of the area, but usually in comparatively small amount. It is dark or nearly black in colour, and is seen under the microscope to be composed essentially of plagioclase feldspar and dark-green hornblende. The latter mineral occasionally holds a core of pyroxene, suggesting that the rock was originally a gabbro or diabase.

Amphibolite.

These amphibolites usually occur as bands in the gneiss and are not confined to the limestone districts, and where the gneiss can be seen to have been greatly stretched or rolled out under the influence of pressure, these amphibole bands can invariably be observed to have been pulled apart into separate pieces, showing that under such pressure they are less plastic than the orthoclase gneiss.

Limestone.

The limestones are coarsely crystalline marbles, white or nearly so in colour, sometimes nearly pure, as in portions of the band near St. Sauveur or the occurrence on lot 10 of range VII., of Kilkenny ; but at other times very impure, as in much of the New Glasgow band, the impurities consisting of grains of quartz, pyroxene, phlogopite, graphite and other minerals disseminated through them. So much of this area is occupied by anorthosite intrusions, that the limestones are less abundant than usual in districts underlain by the Grenville series.

As these limestones, however, are important members of the series on account of genetic considerations, as well as owing to the light they throw on the stratigraphical relations of the series as a whole, the several occurrences will be specified.

St. Sauveur.

Commencing on the west, there is limestone lying immediately to the west and north-west of the village of St. Sauveur. This is the most extensive development of Laurentian limestone in the area. It, for the most part, underlies a low, undulating drifted tract of country