

to the margin of the lens. This feature is exceptionally well shown where the magnesite adjoins a crumpled lens of serpentine in sample areas Nos. 41 and 42, on the No. 1 outcrop on the Scottish Canadian property (Map 1679).

MINERALOGY.

The minerals observed to be present in the magnesite deposits, named in the order of their abundance, are as follows: magnesite, serpentine, dolomite, diopside, phlogopite, quartz, talc, pyrite, sphalerite, magnetite, and graphite. The character and mode of occurrence of each of these are briefly described in the following sections.

Magnesite (MgCO_3 : magnesia 47.6, carbon dioxide 52.4 per cent). Magnesite or magnesium carbonate as found in the Grenville district is a glistening cream white, snow white, milk white, or grey, fine-grained material having a specific gravity of 3.00 and a hardness of 3.5. The general character and mode of occurrence of the mineral have been described in previous sections.

Serpentine ($3\text{MgO} \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$: magnesia 43, silica 44.1, water 12.9 per cent). The serpentine found in the magnesite deposits occurs partly in masses or bands of various sizes up to several hundred feet in length and 50 feet in width and partly as round grains disseminated through the magnesite or magnesite-dolomite. It may be dark green or almost black, emerald green, blue green, yellow green, yellowish brown or wax yellow in colour, is exceedingly fine-grained, and possesses a waxy lustre. In the larger masses it commonly contains considerable finely disseminated amber brown mica.

Dolomite ($\text{CaCO}_3\text{MgCO}_3$: magnesia 21.7, lime 30.4, carbon dioxide 47.9 per cent). The dolomite associated with the Grenville magnesite occurs partly as small grains or aggregates of grains intimately disseminated through the magnesite, and partly as large irregular masses or lenses included in the magnesite. Corresponding to these two modes of occurrence there is a marked difference in the physical character of the mineral: for, while the disseminated dolomite is generally fine-grained and glistening and similar in appearance to the magnesite, the large masses are coarsely crystallized with a well developed rhombohedral cleavage.

Diopside ($\text{CaMg}(\text{SiO}_3)_2$: lime 25.9, magnesia 18.5, silica 55.6 per cent). Extensive masses of the variety of pyroxene known as diopside are included in the magnesite deposits in a number of localities, especially near the contact of the magnesite with the Grenville quartzite which adjoins the deposits in places. The mineral as found in these masses is not strikingly different in appearance from the magnesite. It can be distinguished, however, by its somewhat greater specific gravity, rectangular cleavage, vitreous lustre, light pale green colour, and sub-translucency.