

masses of similar cherts were found on the east shore of Mistinikon lake, one in Yarrow township at the north contact of the northernmost body of granite, the other in Powell township at the narrows one-half mile north of Bell Island. A small body of rhyolite tuffs is also found in the middle of Powell township, on claims 5379 and 5380 of the Matschewan Gold Mines Company.

The remainder of the area underlain by the basement volcanics is occupied by andesites and basalts, with some admixture of tuffs of corresponding composition. These were not separated in the mapping.

LITHOLOGICAL CHARACTERS.

Peridotites.

The peridotites are of possible commercial importance, since asbestos of good quality has been found in some of them. Those in Midlothian township in particular were carefully studied with a view to gaining some information as to their size, relations, and alteration. They are black, grayish-black, and greenish-black rocks, frequently having the appearance of a badly altered gabbro on the weathered surface. They are quite soft, crumbling away under the hammer and easily scratched with a knife. This is due to the fact that they are now completely altered to secondary minerals. It was found possible at one or two places only, to obtain a specimen which under the microscope showed even a trace remaining of any primary constituent. The original constitution, which is concluded to have been that of a basic gabbro, pyroxenite, or peridotite, is inferred largely from the texture and appearance of clean weathered surfaces and from the nature of the secondary minerals formed. Fortunately the original textures have been preserved in great part in spite of the alteration, and stand out clearly on clean weathered surfaces.

Some of the sections of the altered basic rock show nothing but kaolin, sericite or talc, and leucoxene. Most of them contain in addition calcite, which may vary from 1 or 2 per cent to 50 per cent, more or less serpentine, and some chlorite. In one section pyroxene appears to have altered to kaolin and talc, in others to serpentine. Feldspar appears to have altered to sericite and kaolin. Occasionally a feature is seen which suggests that the alteration to serpentine may in some cases have succeeded the alteration to calcite, kaolin, talc, etc. Such was the occurrence in one section of serpentine in a vein-like mass cutting the mass of other alteration products.

Although the great body of the basic rocks has suffered the alterations described, in places there is an alteration to masses of serpentine, either pure or mixed with varying quantities of calcite, with occasionally a little chlorite. Unfortunately there was no place found where outcrops were sufficiently numerous to permit the collection of suites of specimens to show the change from one type of alteration to the other.

Here and there veinlets of asbestos cut the rocks. In one outcrop on the north arm of Lloyd lake the alteration has been of the first type described, not the alteration to pure serpentine; the veinlets of asbestos are not over a twentieth of an inch in width, and form an anastomosing