

The acid porphyry which is found associated with the gold in the Porcupine country has generally been spoken of as a squeezed quartz porphyry. That on the McIntyre property, south of Pearl Lake and east of the Hollinger mine, was found to contain large phenocrysts of orthoclase and plagioclase in about equal proportions, imbedded in a fine grained ground-mass of feldspar, quartz and sericite. A very few phenocrysts of quartz were also observed in it. The plagioclase is a soda-lime feldspar with a large preponderance of lime. In this particular instance the porphyry had been much crushed; but a little further west, on the opposite side of the Hollinger mine, it was found in some drill-holes in a less altered condition, consisting of a holocrystalline rock with large phenocrysts of feldspar in a coarse matrix of feldspar, chlorite and sericite. A few of the phenocrysts are orthoclase, but most of them are plagioclase in which the lime preponderates over the soda.

In the vicinity of the Dome, the porphyry examined has a much larger percentage of quartz, though some of the phenocrysts are of soda-lime feldspar.

Thus it will be seen that in their mode of occurrence, associated with porphyries rich in soda lime feldspar, the gold-bearing veins of the Porcupine district fall in line with those described from Swastika and Kirkland Lake.

As stated in my paper, similar porphyries occur associated with the gold-bearing veins throughout the Pre-Cambrian areas of Canada. Among these Mr. A. L. Parsons has drawn attention to the fact that several of the gold-bearing veins on Lake of the Woods are definitely associated with dykes rich in plagioclase.

In answer to Mr. Lett's first question, whether it is true that the gold is commonly associated with 'much secondary quartz, calcite and sericite,' it is undoubtedly true that most of the primary quartz in the veins had been much fractured before the gold was introduced into it. In some places these quartz veins have numerous cross-veins of secondary quartz in them, but as far as I am aware this secondary quartz is not usually rich in gold.

Calcite is not a common constituent in the richer veins, though it is very common in the adjoining rocks, being probably derived in part from the decomposition of the plagioclase. Sericite is also often present near the walls of the veins, having probably been derived from the decomposition of some of the orthoclase present in the porphyry.

In regard to the character of the porphyry, I must take issue with Mr. Spearman's statement that orthoclase phenocrysts predominate. I have myself examined, or have had examined for me, a large