

sected by the younger post-Huronian diabase. They are, therefore, either upper or post-Huronian in age and belong to the older gold formation.

3. Form and Composition.

The ore deposits seldom form simple veins with sharp contacts on the country rock, but rather form compound veins, sending out numerous stringers into the country rock. The strike and dip of the veins is very variable. Sometimes the veins are only a few centimeters across; on the other hand, they occasionally expand and form enormous quartz masses which, like domes, rise above the surrounding country. These vein formations seldom occur singly, but rather form series of veins and stringers approximately parallel, constituting a broad zone of veins. These extend for long distances in the direction of the strike and as they possess considerable width one is forced to assume for them great depth.

The veins usually strike west, southwest to east, northeast. In rare instances veins have been observed which strike south, southeast, to north, northwest, as may be seen at the East Dome mine.

The dip is often almost vertical. Frequently, however, the veins appear to be strongly faulted by later earth movements. Such a fault has been discovered in shaft No. 2 of the McIntyre mine.

The gangue consists for the most part of milky quartz and more or less silicified country rock. This quartz contains gas and liquid inclusions,** as well as feldspar crystals and fine needles of tourmaline. As a result of earth movements the quartz is much fissured and, consequently, easily broken. Along with the quartz, siderite and a brownish mineral with rhombohedral cleavage—ankerite ($\text{CaMgFe} \text{CO}_3$)—are fairly prominent. In a vein on the West Dome mine, ankerite is the chief mineral in which the quartz forms only slender stringers running across the vein. The vein body consisted therefore originally solely of carbonates and only after later movements in the old fissure did the introduction of the rising solutions carrying gold and silica become possible. A metasomatic replacement of the carbonate by quartz has been frequently observed. The ankerite sometimes carries a

**J. Stanford: Microscopic Examination of Some Typical Specimens of Porcupine Rocks and Vein Matter Canadian Mining Journal, 1911, p. 109.