

term, and at both sides of the deposits the enclosing rock is impregnated more or less with the pyritous matter. Though mining is thus rendered somewhat difficult and uncertain on account of the absence of the walls and irregularity in the distribution of the ore, so that there is no means of knowing in what direction to drive the levels, this uncertainty is more than compensated by the extent and massiveness of the deposit when found. The ore bodies like the masses of diabase with which they are so intimately associated are lens or pod-shaped and "pinch out" in both directions. This structure is also characteristic of their downward extension, and the deposits have been very truly likened to a string of sausages, so that when one lenticular body of ore gives out another commences close at hand, which in its turn gives place to another, and though at the Copper Cliff they are down about 600 feet on a slope of 45° , the quantity and quality of the ore shows no diminution. I have occasionally found true veins of quartz holding this pyrrhotite, but such evidences of secondary action are extremely rare and proves nothing in regard to the origin of the more massive deposits. The ores and the associated diabase were therefore in all probability simultaneously introduced in a molten condition, the particles of pyritous matter aggregating themselves together in obedience to the law of mutual attraction. The ore bodies were, therefore, not contemporaneous with the stratified Huronian, although there is nothing to prove that they do not belong to the close of the Huronian period. Mr. Ferrier of the Geological Survey has noticed the occurrence of this nickeliferous pyrrhotite in a specimen of chloritic schist and gneissic granite, which had been taken to show the contact between the two rocks. The pyrrhotite is disseminated through both rocks, and its occurrence here in the Township of Dill at the junction of what has been called Laurentian would seem to be another proof of the irruptive origin of this gneiss.

The ore itself is a mixture of pyrrhotite, a monosulphide of iron (Fe_7S_8) and chalcopyrite, a sulphide of copper and iron (Cu Fe S_2). The two minerals are not so intimately commingled as to form a perfect homogeneous mass, but one may be described as occurring in pockets, spots, bunches or threads in the other. The chalcopyrite is not so closely intermixed with the pyrrhotite, but isolates itself rather in spots