

The great nickel bearing sulphide deposits of the Sudbury district—the largest and most important deposits of this kind known to exist—in mineralogical composition and mode of occurrences are remarkably similar to those just described in the several localities above mentioned.

The work of Mr. Barlow and Dr. Bell of the Geological Survey in the Sudbury district and the excellent geological map of the district which they have prepared present these remarkable resemblances in a striking manner. As in Norway, there are here a large number of igneous masses—some 60 in the 3,500 square miles embraced by the geological map above mentioned—composed of a rock, which, though it has been commonly called diorite, has proved in most of the cases where it has been carefully examined to be a gabbro more or less altered with the development of secondary hornblende, that is to say substantially the same rock as in Norway and elsewhere. These diorites cut through the clastic rocks of Huronian age, to whose strike they in most cases conform in a general way, but like these latter are in places cut by granites of later age. The ore, as has been mentioned, is a nickelliferous pyrrhotite associated in some cases with polydymite, pentlandite or millerite and mixed with copper pyrite. It occurs disseminated through this gabbro or diorite, sometimes in sufficient abundance to form deposits which can be worked, the large workable deposits usually being formed by a concentration of these ores near the edges of the gabbro masses or at the contact of these with the Huronian rocks or with the granites, but never extending into these to any considerable distance from the gabbro.

Such deposits have no well defined wall but merge into the gabbro, the wall so far as the miner is concerned being the limit of profitable working due to the fading away of the ore body into the gabbro, so that in underground work an abundant sprinkling of ore through the gabbro serves as an indication of the proximity of heavy ore bodies.

Furthermore, as in Norway, there seems to be in these deposits a certain relation between the size of the deposit and the area of the gabbro mass in which it occurs, since all the extensive mining operations are carried on in deposits associated with large gabbro masses, while in connection with many of the smaller masses, smaller deposits as yet unworked and in many cases unworkable are known to exist. It is also as has been mentioned, not unlikely that a relation between the per-