

permit of the formulation of certain criteria useful in the search for ores. Evidence is accumulating to show that the silver-cobalt mineralizations in the Timiskaming region are connected with a late stage of differentiation in the magma which supplied the quartz diabase and aplite. It seems reasonable, therefore, to anticipate ore deposits in or near such bodies, especially if they are of large size and have undergone important chemical differentiation, that is, if they contain a varied and extensive association of basic and acid phases of the diabase. Pre-existing channels to receive the mineralizers are also necessary and their distribution a matter of vital importance, but in this region they appear to have been everywhere abundant.

These conditions appear to exist quite as fully at several other localities besides Gowganda. At Wapus creek they seem identical and, indeed, results obtained thus far indicate that some mineralization of the silver-cobalt type exists. Between Duncan lake and the West branch the conditions require further study, but, as now known, are not discouraging.

COPPER.

The chalcopyrite, which seems a much more constant constituent of the veins associated with the quartz diabase, is sometimes aggregated into bunches which yield ore specimens of such excellent appearance as to arouse interest. The ore is, however, confined to veins a few inches in width and so scattered as to render them valueless. Occurrences of this kind characterize most of the great diabase bodies, examples of which occur on Mosher lake, between the Northeast and North-west arms of Gowganda lake and elsewhere. The chalcopyrite is sometimes superficially altered to malachite and azurite.

IRON ORE.

Hematite.—Excellent specular and kidney ore is known to exist a short distance east of Nest lake, but the locality was not visited owing to the more urgent requirements of other portions of the district. Specimens of the ore obtained, however, proved to be of excellent character, with little admixture of silica or other foreign matter. The ore body is thought to be of vertical tabular form, occupying a fissure-like space. Its limits are not known, consequently nothing can be yet stated regarding the commercial possibility of the deposit.