

to be derived through the alternation of the chert, that is, that ferric-oxide was produced before the trap overflow occurred and that this oxide was then also converted into magnetite; but what I am claiming with the above is that the carbonate of iron did not only exist as a mixture with the chert, but that also pure carbonate of iron deposits of a small extent were formed at the same time with the formation of the chert and jasper. We have now to answer the question, how was the carbonate of iron changed into a magnetite? Simply through the heat of the trap lava which flowed over the chert in considerable thickness, and also through its hot floor, the granite; in other words, through the heating of the iron with the exclusion of air, the carbonate was converted into a ferro ferric oxide.

We find these conditions, as I mentioned above, only at the northern margin of the chert, that is, where the slates have been thin, while towards the thicker portion of these rocks the iron retained its original state as a carbonate, that is, of course, as far as the just described phenomenon has influenced the conversion of the siderite into a magnetite. Other conditions have prevailed, but I shall speak of these another time. I have also postponed mentioning to you the occurrence of hematite ores, which doubtless exist in considerable quantities in this country, but, strange to say, nobody seems to have observed "the signs on the walls."

If this paper had not already reached too great a volume, and our hustling secretary had not been too anxious to have the manuscripts for printing in his possession as early as possible, I should have dealt with the description of all the different iron occurrences in our western districts.

Those which I have had to leave for the next meeting are the most interesting and are likely to prove for the future iron industry of Canada of the greatest importance.