phorus, such as the Lake Superior ores, should replace the local ores when improved transportation facilities permitted competition.

The mine operators also encountered difficulties in the profitable operation of their properties because of the increased cost of labor and the additional cost of pumping the water as the mines became deeper. The result was that many firms hesitated to open new mines when it became necessary to abandon their old ones and decided to disband. Conditions are not now sufficiently favorable to attract new capital to the iron-mining industry.

The future of the mining of brown iron ore in this region is problematic, yet there is reason to believe that at some time mining will be actively resumed, although this will be brought about only by the exhaustion of richer ore deposits of other regions which now supply the local demand. Thus the mining of brown iron ore will not be an important industry in this region for many years, as the Lake Superior, New Jersey, and foreign ores will long continue to replace the local ores. The local operations were necessarily small on account of the manner of occurrence of the ore and so could not compete with operations in those regions where mining can be done on a very extensive scale.

**Descriptions of Individual Limonite Iron Mines**

All of the iron mines of the county have long been closed and very little information can be obtained by visiting the localities. On the dumps and in the mud-clam deposits one can see the character of the matrix, generally varicolored clays, and occasional pieces of ore and associated rocks. In a few places the wall rocks are visible. Around most of the limonite ore mines in the Hardyston formation are numerous fragments, or even large masses, of taffy-yellow or brown ferruginous jasper or jasperoid.

In view of the frequent requests for information concerning individual mines, such data as could be secured is here given. Most of the mines were in operation when Prof. Frederick Prime worked in the region during the field seasons of 1874-1878 and in his reports he gave brief descriptions of certain mines. These are quoted here, together with occasional additional notes by the author. Numerous objections might be offered to some of Prof. Prime's statements but they are quoted as published. He commonly refers to the jasperoid rock associated with "mountain ores" as "flint" and also speaks about "Utica" shales as being the source of the black clays. Likewise he uses the term "Potsdam" for what we now term "Hardyston" and calls sericite, "damourite." He also believed that all the limonite ore bodies had been formed in the limestones.