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Lansing Lead Mines

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LANSING LEAD MINES.

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The mine herein described is located in Allamakee county, about five miles northwest of Lansing (Tp. 99 N., R. IV. W., Sec. 10, Nw. qr.). It is owned and operated by the Lansing Mining and Smelting Company, of which Hon. J. H. Trewin is president.

The mine is of special interest on account of being located in the Oneota limestone. As is well known, the lead and zinc deposits of this state are confined almost wholly to the Galena formation, and moreover, the large ore bodies have occurred in the upper part of this limestone. Thus the Dubuque mines are, with few exceptions, within 100 feet of the overlying Maquoketa shale, many of the shafts passing through from ten to twenty feet of these beds. At Guttenberg, where at one time considerable lead was found, the productive openings are at the base of the Galena, at its juncture with the Trenton.

Previous to the discovery of the Lansing mine lead in paying quantity had not been found in Iowa below this horizon, and it was considered well nigh useless to look for ore in other formations. This mine is, so far as known, the only instance in the entire Upper Mississippi region where an extensive lead deposit occurs in the Oneota limestone, or anywhere below the Trenton.

Another remarkable fact in connection with this deposit is its occurrance as a vertical sheet in a north and south fissure. While these north and south crevices are not uncommon in the state, they are usually of limited extent, and do not contain large bodies of ore. But here the sheet is an extensive one, and does not as yet show any signs of giving out.

The deposits, as a rule, are confined to east and west crevices, where they occur in expansions or openings of the fissures.

The mine was discovered in January 1891, by Capt. Turner, who had reached the conclusion that lead was to be found in the Oneota, and had done considerable prospecting at various points along the Mississippi. This location is on a hillside that slopes to the north and east. While the general direction of the crevices is nearly north and south (S. 10° E. N. 10° W.), its course is not straight, but zig-zags back and forth within certain limits, so that a shaft sunk on the general line of the fissure may be several feet out of the way.

This sheet of mineral has been followed 1,000 feet, and its limits have not been reached, either to the north or south. At the north end of the present workings the fissure is interrupted by a ravine, and the sheet thus outcrops. There is good reason for supposing that this will be found again on the other side. The main body of the sheet has a vertical extent of from 25 to 30 feet, and a width of from 3 to 4 inches. A shaft was sunk 113 feet to the Saint Croix or Potsdam sandstone, and Galena was found in small quantities downward to within 4 or 5 feet of the latter. The bulk of the ore, however, is about 50 feet above the sandstone.

The sheet of lead is either imbedded in the crevice clay, or fills the entire space between the rock walls. Where it extends into the hill to the south, and has been little exposed to weathering agencies, the sides of the fissure have not undergone decomposition, and the sheet is in contact with the rock. In other places where examined an inch or two of clay was found between it and the limestone; the crevice in this case being from 6 to 8 inches wide. Again, the fissure may open out until it has a width of 3 or 4 feet, and is filled with clay and the sheet of ore. The latter lies up against the wall, and almost invariably against the east wall, or toward the lower side of the hill. The sheet does not extend vertically to the surface, but in the upper 8 or 10 feet, curves over toward the east, or down the slope. Evidently there has been a slipping of the hillside which has carried with it the top of the sheet, this bending being a result.

The mine has been worked by means of three or four shafts, from 30 to 60 feet deep. From these, drifts are run in each direction at various levels, and thus the ore is removed. At the north end of the present workings a tunnel has also been cut alongside of the mineral.

Most of the ore is taken out in pieces of considerable size. The Galena does not occur well crystalized, but in the form of

"chunk mineral," as it is called. It is filled with numerous cavities often lined with crystals of lead carbonate or cerussite, formed by the alteration of the sulphide. The ore is of excellent quality, one sample showing 80.55 per cent of lead.

Up to the month of April of this year the production had reached 400,000 pounds, with excellent prospects for the future.

There is another locality in Allamakee county where lead was formerly mined in the Oneota limestone, and a brief description of the mines will, perhaps, be in place in this connection. The diggings were on Mineral Creek (Tp. 99 N., R. VI. W., Sec. 13) about two and a half miles south of where it empties into the Oneota river. Near the junction of the two streams a small town, New Galena, sprang up, and during the year of 1856–57, was the scene of considerable activity.

The mines were in the upper part of the Oneota formation, not far from its juncture with the Saint Peter sandstone. Mineral Creek has cut its valley through this sandstone and well down into the underlying limestone, which here has a thickness of something over 100 feet. This latter rock shows evidence of considerable disturbance, being more or less brecciated, and re-cemented by siliceous material. It is full of cherty or flinty matter, and is very impure.

The mines were on a hillside and were worked by means of short drifts. Instead of being in crevices the ore occured scattered through the limestone, necessitating considerable blasting for its removal. None of the drifts extended more than 40 or 50 feet from the surface, as the mineral bearing rock did not reach a greater distance.

To separate the mineral great heaps were constructed with wood intermingled with rock. These piles were set on fire, and the heat was not sufficient to melt the Galena, but only cracked the rock into small pieces. Then this was washed and the mineral was separated. The latter was smelted in a furnace located at the mouth of Mineral Creek. During the two years that the mines were in operation 63 pigs were turned out, and this trifling return represents almost the entire product of the district.

When the locality was visited early in the present year, some prospecting was in progress, but with little chance of success.

Float lead is found quite abundantly in the county, and the Oneota contains more or less of this mineral, but it is doubtful whether as a rule the ore occurs in well defined crevices, and in amount sufficient to make its mining profitable.