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The Gas Wells near Letts, Iowa

F. M. Witter

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numerous flint chips, such as are supposed to have been struck from arrow and spear points, knives, etc.

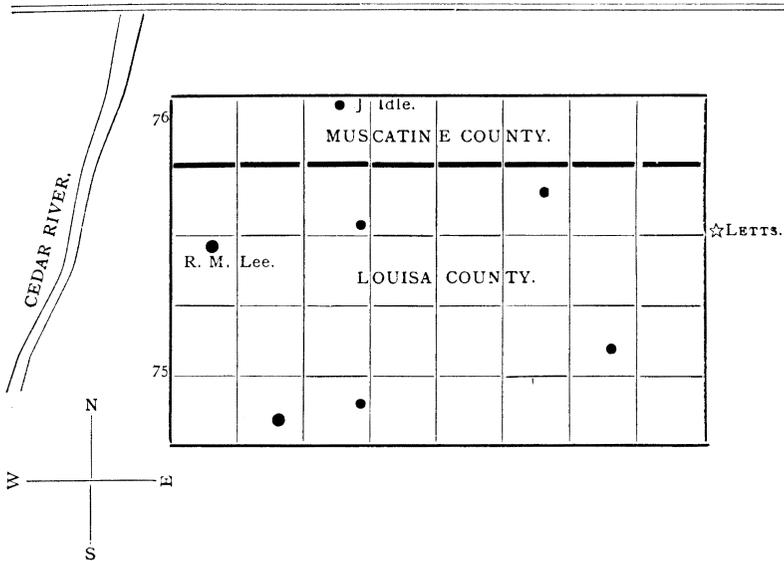
On both sides of our great river in this region, on the most commanding sites, are mounds of earth, the works of men. These mounds do not seem to be built on Loess. They are considered to be very ancient. Might it not be possible that the men who built these mounds were of the same race as those who pursued their game and lost their weapons by the shore of our ancient Loess lake?

THE GAS WELLS NEAR LETTS, IOWA.

READ BY F. M. WITTER AT THE SIXTH ANNUAL SESSION OF THE IOWA ACADEMY OF SCIENCE, IN DES MOINES.

In the early part of December, 1890, Mr. T. L. Estle, living in section 3, township 75, north, range 4, west 5th p. m., sunk a well on his farm for water. In drift at a depth of about one hundred feet he struck gas, which burned readily but in two or three days the gas ceased to flow. Between forty and eighty rods west of this place, about the same time Mr. R. M. Lee bored for water. At about one hundred feet he failed to get water and stopped boring. In the evening he commenced to pull out his casing, and succeeded in raising it perhaps eight or ten feet. During the night a great roaring was heard and on approaching the well with a lantern the gas took fire and a great flame shot several feet in the air with a frightful noise. In a few days the flame was extinguished and the gas piped into Mr. Lee's house a few rods away, where for over a year it has furnished him light and fuel. This well now furnishes Messrs. R. M. Lee, T. J. Estle, J. E. Lee and Robt. Lee with all their fuel and light. Robt. Lee is a little over one mile from the well.

It is carried in common gas pipe laid on top of the ground. This is two inches, one and one-half inches and the last half mile one inch in diameter.



GAS WELLS NEAR LETTS, IN MUSCATINE AND LOUISA COUNTIES, TOWNSHIPS 75 AND 76, N. R. 4 W, 5 P. M.

This well supplies twelve fires and sixteen lights. No estimate has been made as to how many more it might supply, but the number would certainly be quite large.

Mr. J. E. Lee stated that the opening admitting the gas from the casing of the well to the main was considerably less than the size of an ordinary lead pencil and that it flowed a half mile in the main in fourteen seconds. How this rate was satisfactorily ascertained we did not learn. The same gentlemen said the pressure at first was about five and one-half pounds, which has steadily risen till it is now twelve pounds. From a large stream issuing in our faces we could detect a faint odor of ether or chloroform. It gives a fine light and a most intense heat in the stoves and artistic grates. It seems in all respects to be equal or superior to the best artificial illuminating gas. The gas is used just as it is when it issues from the well.

Within a circle of about three miles in diameter in the townships named above from at least seven wells sunk for water, gas issued. The depth to the gas ranges from about ninety feet to one hundred and twenty-five feet. At a depth from six feet to twenty-five feet below the gas a good, constant supply of water is obtained.

It seemed to be very easy to shut off the gas by the rapid sinking of the casing in a soft blue clay with some sand in which the gas is thought to be stored. The clay seems to form a tube as the drill and casing descend and thus prevents the gas from getting into the well unless it is given a little time at the right place.

The country for miles around is full of wells which are all believed to reach the water below the gas without discovering the gas for reasons given above.

I made the following tests on the water from below the gas: With Potassium Ferrocyanide I observed no re-action. On evaporating perhaps fifty c. c. a considerable amount of solid matter was obtained. This was somewhat of a yellowish brown color and effervesced with Hydric Chloride.

This solution when tested with Potassium Ferrocyanide gave a deep blue. I was led to believe from these tests that the water contained a carbonate and some compound containing iron in solution. My stock of water would not admit of further tests.

At a depth of eighteen or twenty feet water has generally been found in this locality, but the supply is variable. Mr. Robt. Lee has a well which he dug several years ago, the water of which was excellent and in good quantity. This well is about eighteen feet deep and carefully walled. Last summer he bored for water about one hundred feet from this well. At a depth of a little over one hundred feet he found a little gas issuing at irregular intervals. Immediately after the appearance of the gas the water in the shallow well became muddy and unfit for use and has remained so, though the water seemed to be much worse at times, not periodic. It seems to me the gas rises outside of the casing to the porous bed holding the water of the shallow well and injures the water.

The country in which these wells are located is comparatively level. Indications are at hand everywhere of a boggy or peaty nature. There are but few low hills, and no ravines of any note. The soil is a rich, black loam and the whole region is said to be destitute of boulders, so common in many parts of Iowa and especially of Muscatine county.

Mr. J. E. Lee stated that wells in this region had been sunk two hundred and eighty feet and no rock had been reached. The well in Muscatine county from which gas is used is on the farm of Mr. John Idle, in section 35, township 76, range 4 west. The farmers in the neighborhood of these gas wells are about to complete an arrangement to put down a well two thousand to two thousand five hundred feet deep. This is to determine whether there is oil below the gas.

It is my own opinion that the gas comes from considerable beds of vegetable matter buried in this unusually heavy drift deposit in this region. The area, it seems to me, which is thus underlaid is six or eight miles long and three or four miles wide. I should expect to find the rocks here directly below the drift to be of Devonian age.

This locality is on the east side of the Cedar river. The nearest well to the Cedar river is about two miles distant. No gas has yet been found on the west of the Cedar. This region is directly on the edge of what I have considered the sub-carboniferous.

Some eight or ten miles to the south of these wells rock are exposed along the creeks and deep ravines. I have not seen these rocks, but I think Mr. Frank Springer reported several years ago that certain beds of these rocks were well filled with the remains of fish, especially their teeth.