

THE OIL WELLS OF ALSACE

A DISCOVERY MADE MORE THAN A CENTURY AGO.

WHAT A PENNSYLVANIA OPERATOR SAW ABROAD—PRIMITIVE METHODS OF OBTAINING OIL—THE PROCESS SIMILAR TO THAT USED IN COAL MINING.

BRADFORD, Penn., Feb. 20.—It has been the general belief since petroleum was discovered by Col. Drake in Pennsylvania, in 1859, that his well was the first ever sunk in the search for oil, and that the Pennsylvania oil regions were the first where petroleum was sought. But the Hon. Lewis Emery, of this city, during his recent tour of investigation among European oil fields, found a territory where oil operations were begun 130 years before Drake's discovery revolutionized the industry of Western Pennsylvania. This ancient oil region is in Alsace, its centre being the town of Pechelbronn, about 50 miles north of Strasburg. Mr. Emery is the first American who ever visited the region, and the first outsider the owner ever permitted to examine the wells and the manner of sinking and operating them. A railroad runs to within three miles of the district, the nearest station being Sultz-unter'm-Wald. The oil territory is nine miles long, and is owned by a Frenchman named Jacques A. Le Bel, an ancestor of whom discovered the oil in 1735. Dr. Antoine Le Bel was a naturalist, and while making investigations in Alsace in the above year he came upon a small stream of a thick, oily substance exuding from the earth. By experimenting with it he found that it was an excellent lubricator. He at once began digging into the earth, believing that the oil existed in quantities beneath the surface. He sank a shaft, or rather a pit, to the depth of 50 feet, where he struck a sand rock rich with the oil. Dr. Le Bel was wealthy, and he purchased from the French Government, which then owned the land, 91,000 metressquare in the region. The property has continued in the possession of the Le Bel family from that day to this, and oil operations have never ceased. During the early years of the business the rock was quarried at a depth of 50 feet, taken out in blocks, and the oil extracted from it by a boiling process. That stratum of rock was long ago exhausted, and the oil is now found at a depth of 300 feet. The system of operating adopted by the pioneer operator in 1735 is the one still used, no improvement having suggested itself to the owners of the property in the century and a half of its history, except the substitution of steam-power for that of Alsatian peasants in hoisting buckets from the wells.

The sinking of an Alsatian oil well is more like the operation of opening a coal mine than of tapping the oil vein, as understood and practiced in the Pennsylvania and other American fields. When the oil operator in Alsace sets out to put down an oil well, he first erects a building 80 by 30 feet for his engine and boiler. Near by, an excavation 20 feet deep and 14 feet square is made in the ground. This is filled with solid stone masonry. Upon this foundation is erected a chimney 100 feet high, octagonal in shape, and 14 feet in diameter. The work of sinking the well is begun beneath the engine-house. As the well is to consist of a shaft and numerous drifts and galleries, its plan is first carefully laid out by an experienced engineer. The shaft is excavated entirely by workmen with the pick and shovel. The work goes on night and day, there being three sets of hands, three in a set, who work eight hours each. The shaft is 14 feet in length, and 6 feet wide. When it reaches a depth from which it is impossible to throw the dirt out with the shovels, a windlass with buckets attached is put in position, connected with the engine, and the dirt is then raised by them. These buckets have bottoms hung on hinges. When one is hoisted up, it is swung around over a small car and dumped. The car is trundled away by laborers, and in turn dumped on the outside of the building. From the time the engine starts, 17 men are engaged in the sinking of the well. The shaftmen, at all depths, receive 55 cents a day. The engineer, firemen, tubmen, and carman receive 40 cents a day, and work 12 hours. The pay-roll of these 17 men is \$9 05 a day—a sum two workmen in the Pennsylvania oil regions would think small enough to divide between them for a day's work at a well. As the shaft is sunk the walls are curbed with strong timbers in a secure and workmanlike manner. The average depth of a shaft when it reaches the oil-bearing sand is 300 feet. At the depth of 30 feet a drift is cut from the shaft at an angle that will bring its upper opening to the base of the stack, or chimney, mentioned, an opening in which, at that spot, makes of the drift and chimney an exit for the impure air of the shaft, the draft being sufficient to exhaust all the poisonous gases. The shaft is divided into three compartments, which are numbered 1, 2, and 3. No. 1 is 8 by 6 feet, and is the "well." No. 2 is 3 by 6 feet, and is made airtight at the top. This is the compartment up which the impure air is drawn by the drift and the chimney. No. 3 is also 3 by 6 feet, and is the shaft that gives to the workmen below the fresh air that enables them to carry on their arduous labor. The ventilation by this arrangement is said to be so perfect that there is no record of a death from suffocation having ever occurred among the workmen. Indeed, for a period of 30 years the death-rate at these wells has been marvelously low, only seven men having been killed in that time. Every one of these met his death by falling from the long ladders by which the miners go and come from their work in the fresh-air shaft. When the well has reached the oil-sand, and penetrated it to a sufficient depth, galleries are opened in various directions, with a slightly ascending grade. These galleries extend long distances in the surrounding stratum, and drain an area of several acres of its oil. The oil drips into the galleries, by which it is conducted to the bottom of the main shaft. There it is dipped up by the miners, poured into buckets—the same that raised the dirt and debris from the shaft—which, when full, are hoisted to the surface, and taken to the refinery. The miners—for they can be called nothing else—are lighted at their work by Davy lamps, which they strap to their breasts. Fortunately for these workmen, and for their employer, this Alsatian oil produces no gas like the American petroleum, or an entirely different system of operating would be necessary. To sink one of these wells to the depth of 300 feet occupies seven months, and costs, including machinery, \$14,000—about four times the cost of a "hole" in Pennsylvania. No water is encountered at that depth, but in attempting to sink one of the old shafts to another supposed stratum of oil-bearing rock, the workmen struck a vein of salt water, which drove them from the well. Having no pumping apparatus, the water was being taken out by means of the buckets when Mr. Emery visited the well, and it was expected that it would all be taken out in a week—a 24 hours' job with American machinery. Mr. Le Bel was incredulous when told how the American wells were operated, although Mr. Emery believes that the Alsatian oil is too thick and the rock too close to be worked by the Pennsylvania process. The refinery is primitive and rude, but Le Bel succeeds in getting 60 per cent. of good lubricating oil, no illuminating being obtained. The oil is sold by the pound, or, rather, in packages of 200 pounds, called kilos. The price received is from \$6 to \$10 a kilo, according to grade, equal to what would be from \$5 to \$8 a barrel in this country. Two wells that were in operation when Mr. Emery was in Alsace, were producing 12 tons of oil a day. The deposit of petroleum in this heretofore almost unknown region is evidently very extensive, but the field is one in which the American region will never find a formidable rival. The Alsations know nothing of any other oil region, and the statements of Mr. Emery in relation to the importance of the American oil territory were received there with great astonishment.