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PETROLEUM GAS.

The London *Times* roughly estimates that the quantity of Petroleum or Rock Oil which will be exported to Europe in 1863 will amount to fifty or sixty million gallons. Numerous uses for the different light and heavy oils, which can be procured from petroleum by distillation, are already known, and application is now made of this curious product in a great number of forms. But it is as an illuminator that it will find most favor with the public, where the supply is constant and cheap; and it is very probable that, as an economical source of gas for illuminating and heating purposes, it will rapidly come into general use.

The results of a series of experiments which have recently been made at the gas works from which the small towns of Homer and Courtland, in the State of New York, are supplied, are most satisfactory and encouraging, both with regard to the luminous qualities and the remarkable cheapness of petroleum gas.

The following details are the results of careful measurement in all particulars, from which information as to the economy of the manufacture of petroleum gas could be derived.

The process employed at Homer and Courtland is similar, in most respects, to that which enables the proprietor of the Stevenson House, St. Catharines, C.W., to light his establishment with 180 burners, at a cost of 86 cents a night, under what is known as Thomson's patent.

The retorts at Homer are two in number, and of the following dimensions:—

Length	7½ feet.
Breadth	16 inches.
Height	12 "

Two vertical tubes are cast on each retort for the purpose of supplying water and petroleum. The retorts are laid horizontally in an arch, exactly the same as ordinary coal gas retorts, for which they can be substituted without much trouble or expense. Each retort is divided into three chambers called the petroleum, the water and the coke chambers respectively.

Petroleum and water are introduced in continuous streams through the tubes before described, so that when once a barrel of petroleum is placed at a sufficient height to allow a pipe provided with a stop-cock to feed the retort, the fluid may be admitted and the process of conversion into gas goes on without further trouble, until the barrel is exhausted.

Two series of experiments were recently made at Homer, with the following results:—

FIRST TRIAL.

Quantity of gas made by each retort, per hour, 450 cubic feet.
Total quantity of gas made, 3,380 cubic feet.
Petroleum consumed, 38 wine gallons.
Condensed petroleum, capable of being used over again, 4 gallons.
Quantity of petroleum per 1,000 feet of gas, $10\frac{1}{7}$ gallons.
Time required to make 3,380 feet, 3 hours 45 min.
Time of heating the retorts; the same as for coal gas.
Quantity of fuel; same as for coal gas.

SECOND TRIAL.

	C. F.
Quantity of gas made by the two retorts in the first hour	1,080
Quantity of gas made in second hour, less 10 minutes	820
Proportionate quantity in second hour	984
Total quantity in two hours	2,064
Mean quantity per hour	1,032
" " for each retort per hour	516

Quantity of fuel; same as for coal gas.
Time of heating retorts; same as for coal gas.

Quantity of petroleum consumed	25	wine gals.
" condensed petroleum, capable of being used again	$1\frac{3}{4}$	"
Actual quantity of petroleum used	$23\frac{1}{4}$	"
Quantity per 1,000 feet	$11\frac{9}{7}$	"

MEAN OF THE TWO EXPERIMENTS.

Total quantity of gas made, 5,280 cubic feet.
Total time occupied in making the gas, 5 hours 35 minutes, or very nearly 1,000 feet per hour, or 500 feet for each retort.
Petroleum consumed; 11 gallons per 1,000 feet.

In the first hour of the second experiment, the quantity made was 1,080 cubic feet; and the condenser shewed that too much water was admitted, (about one-eighth of the whole quantity of petroleum.) This unnecessary quantity of water evidently cooled the retort, and prevented the gas from being formed so rapidly as during the first trial.

A one-foot burner, with this gas, gives as brilliant a light as a four-feet burner supplied with