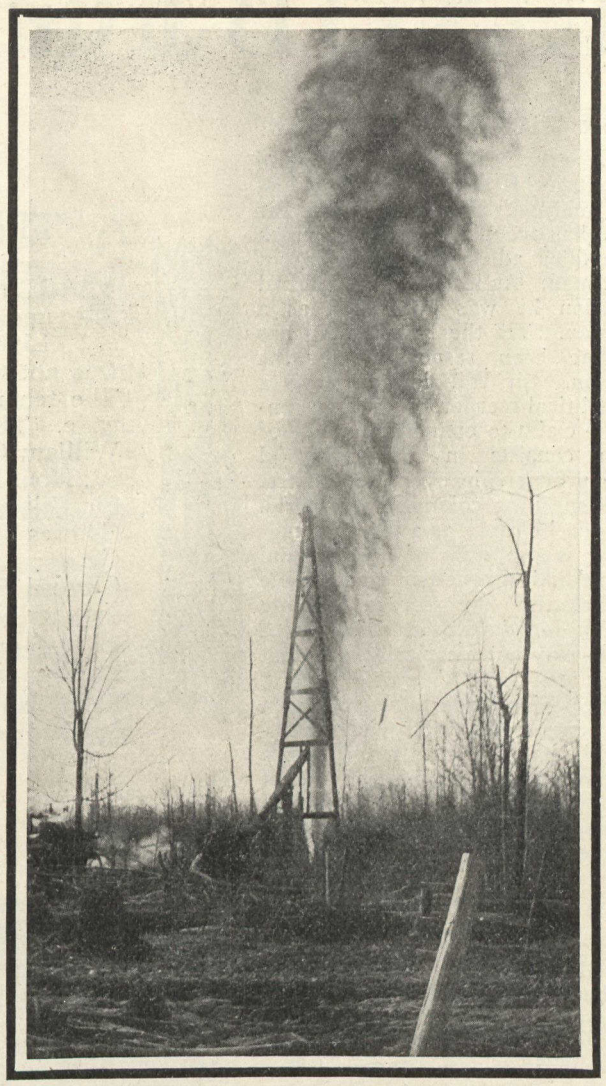
began to dream of great things, greater things even than they were realising. There was no limit to their possibilities. There would be other towns come to birth, of course. Why not, when such inducements were offered merchants. Couldn't they sell their cloth by the bale? Weren't the grocers selling sugar by the barrel and canned goods by the box? Hopeful souls even went so far as to christen three new towns in conception: "Paraffine," "Benzine" and "Nitro Glycerine."

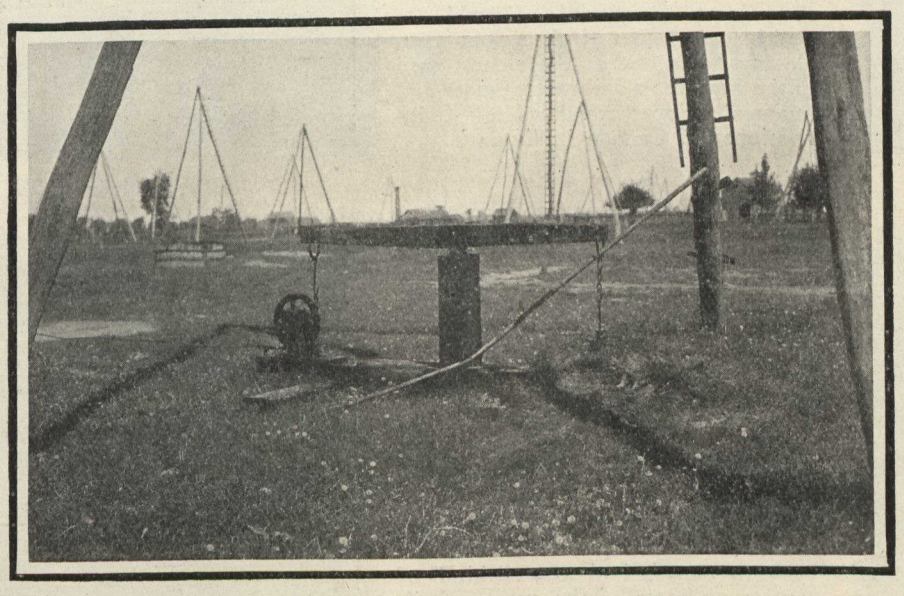
But after all a boom is but a boom and always his its after effects. There came a day when the wells ceased to produce their usual amount of the fluid. In a sense this was a great disappointment, but largely, it should be stated, one without pecuniary loss. The harvest had been more than bountiful, the oil-belt was below and there must always be oil there and in paying quantities. So that we have in Canada's first industrial history of crude oil, the breathing spell that inevitably follows unreasoning pursuance of something half mythical. And in that breathing spell men found themselves and became rational beings. This epoch marked the gauging of the great Petrolia field, according to its possibilities. That field covers an area of over twelve square miles. In the year 1865 its first well was drilled. To-day there are over 12,000 wells in the field. Each year these wells produce 500,000 barrels of crude petroleum. The product sells for about $1.65 per barrel. The fluid, in its crude state, varies in colour according to its quality. That of the Petrolia fields, and other fields in Ontario, of which we will speak later, is of a dark green colour with a yellowish tinge, with a gravity varying from 32 to 37 degrees. It has a pungent but not displeasing odour. It contains scarcely any waste element. In refining it gives 45 per cent. illuminating oil and 5 per cent. benzine. The remaining parts consist pretty much of paraffine from which is manufactured the finest grades of wax and lubricating oils. The residue obtained in the operation of the latter is rich in carbon and is used as a fuel.

There are no refineries in the Petrolia field. At one time there were no less than seven, but the Imperial Oil Company extended a long arm and gripped them, laid pipes to its own monster refinery at Sarnia and piped the entire product there. A few years ago, local capitalists established a refinery to compete with the Imperial, but it is an uneven battle. The wells of this great field are called "shallow wells," meaning that drillers only have to drill a matter of some 400 feet to strike the oil-vein. In other Ontario fields it is necessary to go much deeper, consequently the cost of sinking a well in the latter territories is much greater. It costs $500 to complete a well in the Petrolia field. The oil-bearing stratum lies at a depth of between 400 and 500 feet below the earth's surface, and by working night and day operators may complete a well in less than a week. The process of drilling an oil-well is interesting to the onlooker, while that of "shooting" a well is something to be remembered. The work of drilling, for the first hundred feet or more, is comparatively easy going, an auger bit being used and capable of boring five feet through the earth, before being lifted to be emptied. Steam has supplanted the old horse-power system of boring, so that it requires but one day to drill through the clay to bed rock. Here the real work starts; here the novice learns to know why the drilling-expert was born. When the top of the rock is struck, an eight-sided casing of inch pine, eight inches in diameter, is inserted into the hole. This is to prevent caving. When the casing, which is called a conductor, is in place, the "bit" is brought into play. A bar of iron 36 inches long and 3½ inches in diameter, tipped with highly-tempered steel capable of biting its way through rock, is lowered, by means of a rope, pulley and derrick, into the hole. To wear its way through the rock, this sinker-iron, or drill, must be lifted and dropped with the persistency of clockwork. This, of course, is done by steam, the driller's work being to cleverly manipulate the contrivance, attached to the working-beam, so as to give, by a half turn, the drill a boring as well as a wearing effect. When the "bit" attached to the bar gets dull, the heavy drill is raised and a new one is attached. One man, by a forge, is kept busy sharpening bits. When necessary to remove the cuttings from the hole, a hollow tube with a valve opening inwards at the bottom, is lowered into the well, its weight being sufficient to force the cuttings into it. The weight of the cuttings closes the valve,



"Shooting" a Well in Tilbury Oil Field.

after which the tube is hoisted and emptied. When the driller has passed through the top rock of limestone, a thickness usually of between 40 and 50 feet, he encounters a strata of "soap-stone," varying in thickness from 135 to 150 feet; an iron casing five feet eight inches in diameter is inserted to prevent "caving," soap-stone being liable to cave, at times. Below the soap-stone is a layer of limestone some 125 feet in thickness, immediately beneath which is the oil-bearing rock. This is drilled through and beyond to a depth of 10 to 20 feet. The well is now completed, except for the shooting. In



An old Well in the Oldest Ontario Field—Petrolia.

order to allow the oil to flow more freely into the well, it is necessary to shatter the rock at its bottom. This is done by the lowering and exploding of nitro-glycerine, and is called "shooting" a well. A cylindrical tube, filled with the deadly explosive, is lowered into the well and by a cap contrivance exploded. The force of the concussion is so terrific that a great area of rock is shattered and a pool of oil is formed at the well's bottom. Frequently, derrick, tool-house and a considerable extent of earth about the well is deluged with the thick green-black fluid, and often—if the well be a gusher—barrels of crude oil are lost before the well can be properly capped.

Because not every man can "shoot" a well successfully, and, perhaps, because not every man would care to, if he could, the oil-fields have their expert "shooters" as well as their expert tool-dressers and drillers.

East of Petrolia field lies the Bothwell oil-field. Never, at any time, a great producer, for years this field has added its quota to the crude oil output of our province. Thirty-five years ago, much was expected of this field. A boom, short-lived though lively while it lasted, struck the place and the little town swelled from a few hundred to 4,000 people. Oil had been discovered in paying quantities, south of the town. Oil kings poured in to discover that but little oil was pouring out. There was a reaction, of course, and Bothwell went to sleep again. In the year 1896 oil was again located some three miles west of the village, at a depth of 380 feet. There are some eighty wells pumping night and day where this well was discovered. Altogether there are several hundred wells in the Bothwell field that are paying propositions. Other wells are being drilled. The approximate production of the field is 5,000 barrels a month.

A few years ago, indications of gas along the brooks in Tilbury township, Kent County, led oil-speculators to investigate and as a result we have the already famous Tilbury gas and oil field. Its discovery has been marked by no feverish activity on the part of its promoters, marred by no rainbow-tinted boom, but rather has the bringing to light of the field's vast possibilities been marked by the cheerful persistence of men who had confidence.

The wells of the Tilbury field are "deep" wells. In many instances they are over 2,000 feet deep. The regulation depth is 1,400 feet. The average output of the wells is twenty barrels per day, a conservative estimate. In this field are a number of natural gas wells with a pressure of 600 pounds to the inch. The city of Chatham now uses the product of one of these wells for heating and lighting purposes, and arrangements are now being completed to supply the other towns in Western Kent. The gas is purified before it enters the city and gives a soft, clear light, equal, if not superior, to artificial gas, and is much more economical.

The Romney oil field, a continuance of the Tilbury field, lies south-west of the latter, and promises, at no distant day, to rival her sister as a producer. The field possesses some excellent wells already and is rapidly extending. To-day, Ontario furnishes practically the total Canadian oil production, and her fields are largely new fields.

The Old Canoe

My seams gape wide so I'm tossed aside
To rot on a lonely shore
While the leaves and mold like a shroud enfold
For the last of my trails are o'er;
But I float in dreams on Northland streams
That never again I'll see,
As I lie on the marge of the old *portage*
With grief for company.

* * * *

Do the cow-moose call on the Montreal
When the first frost bites the air,
And the mists unfold from the red and gold
That the autumn ridges wear?
When the white falls roar as they did of yore
On the Lady Evelyn,
Do the square-tail leap from the black pools deep
Where the pictured rocks begin?

Oh! the fur-fleets sing on Timiskaming
As the ashen paddles bend, [House
And the crews carouse at Rupert
At the sullen winter's end;
But my days are done where the lean wolves run,
And I ripple no more the path
Where the gray geese race 'cross the red moon's face
From the white wind's Arctic wrath.

Though the death'fraught way from the Saguenay
To the storied Nipigon
Once knew me well, now a crumbling shell
I watch the years roll on,
While in memory's haze I live the days
That forever are gone from me,
As I rot on the marge of the old *portage*
With grief for company.

—GEORGE T. MARSH, in *Scribner's Magazine*.