

ONTARIO PETROLEUM
COAL OIL IN THE FRONT RANK OF
CANADIAN INDUSTRIES.

Process of Pumping and Refining Crude
Petroleum—its Many and Useful Pro-
cesses—History of the Coal Oil Field at
Petrolia and Oil Springs.

The study of the petroleum industry
of Ontario is a study of small begin-
nings which are rapidly developing
into great enterprises. From being a
small and very unimportant branch
of Canadian activity, it has advanced
into the front rank of Ontario indus-
tries.

The first attempt to utilize Cana-
dian petroleum was made about the
year 1833. At that time liquid oil was
extracted by rude processes from "gum
oil," a thick, black substance which
found its way to the surface of the
ground in the neighborhood of Oil
Springs, County of Lambton. The next
step was to dig surface wells from 40
to 60 feet deep, and having a shaft
of from four to six feet in diameter,
into which the oil oozed up through the
porous soil. This crude oil was then
pumped to the surface by hand power
and taken to the refinery, where it was
partially refined and made ready for
shipment. In 1861 an attempt was
made to drill in the rock at Oil Springs.
This new departure was highly suc-
cessful, and flowing wells were struck
which produced large quantities of
oil. Owing to the fact that drilling tools
often dropped through and were lost
it was inferred that these wells tapped
some large crevice filled with oil and
gas, and when this crevice was com-
pletely the well was either abandoned or
pumping resorted to. The greater part
of the overflow from these early wells
was lost during the interval between
the striking and the controlling of the
flowing oil. In 1869 similar wells were
struck at Petrolia, but in no case did
the flow continue for any length of
time, and at present all the oil pro-
duced in Ontario has to be pumped.

In the old days the process of drill-
ing a well was slow and expensive,
and with modern machinery and
better methods a well can be drilled
in from three to six days, and \$150 to
\$200 is sufficient to cover the cost. The
first drilling was done with cable
tools, but this method has been en-
tirely done away with, and at present
cable tools are used. The engine and
the beam with the drill—a steel bar
three and one-half inches in diameter
and from 25 to 30 feet in length. The
well is drilled out to a diameter of
about 4 1/2 inches and casing is put
down as the boring progresses to keep
water from interfering with the action
of the drill.

After the oil is struck a pump of
1 1/4 to 1 1/2 inch tubing is put down
and the well is ready for operation.
Formerly much of the pumping was
done by hand, but steam engines have
taken the place of manual labor, thus
largely increasing the output of the
wells. One engine furnishes power
sufficient to pump from six to ninety
wells, by means of a combination of
pump rods working on a horizontal
wheel so arranged that their weight
balances one another, and minimizes
the power required.

The petroleum after being pumped
from the wells, is run into large un-
derground tanks, each holding about
8,000 barrels. These tanks are built
by boring up an excavation and cov-
ering it over, and they are a sure
protection against fire. The well about
Petrolia is an absolutely impervious
clay, and the oil is held without the
slightest loss. These tanks are always
kept filled with oil or water, otherwise
the sides would cave in.

Canadian petroleum in the crude
state is not so pure as the American
variety. It is more largely tainted
with sulphur, and the most difficult
part in the process of refinement is
to eliminate this noxious ingredient.
Moreover, Canadian crude oil con-
tains less illuminating oil than the Penn-
sylvania product, but yields more
heavy lubricating oils and paraffin.
The crude oil is distilled in large
sheet iron retorts. The necessary heat
is furnished by means of a spray of
mixed petroleum and steam injected
beneath the retort into the fire-cham-
ber, which is lined with fire brick.
The distillate is carried in tubes im-
mersed in long vats of water. As the
different distillates appear at various
stages of the process they are led off
into different troughs, and flow into
separate tanks. The first that appear
are the incombustible gases—gasoline
and naphtha. The gasoline is used to
dissolve rubber for waterproof cloth-
ing, to remove grease from wool and
to separate flax oil from flax seed. The
best brands of gasoline deodorized are
used for the intense clear flame in
which the bamboo filament of an in-
candescent bulb units with the plas-
tinum wire to lead in the electric cur-
rent. Other brands are used to melt
the solder in canning machines. De-
odorized naphtha are useful in the
manufacture of paints, varnishes and
lacquers. They make a good wood
stain, and, with resin and metallic
oxides, make a good paint for barrels
and casks. The next products which appear
are illuminating and wool oils, and, finally,
heavy lubricating oils, while an in-
crustation of carbonaceous matter or
cake is left in the retort. This cake
makes good fuel, and is largely used
in the vicinity of Petrolia and Oil
Springs.

oil is ready to be barreled for ship-
ment.
The tar or residue remaining after
the illuminating oil has come off is re-
distilled, resulting in a yield of 70 per
cent. gas-oil, used in the manufacture
of illuminating gas, and 30 per cent. of
paraffine oil. This paraffine oil is put
into a freezing vat, and from 8 to 10 per
cent. of paraffine wax crystallizes out
from it. This wax has all the oil
squeezed out of it by pressure, and is
then refined by chemicals, one part of
the result being made in used in
candles, while the smaller portion is
used in the manufacture of artificial flow-
ers and fruits and chewing gum. The
remaining oils, after the paraffine has
been crystallized, are mixed into lubri-
cating oils, such as paraffine oil, cylin-
der oil, mineral lard, mineral seal, an-
tiseptic, and vaseline.

It is easy to see that but little waste
is incurred in the manufacture of pe-
troleum products, for science is ran-
dily opening up new avenues for use-
fulness, even in the case of the most
worthless residuum of distillation and
refining, and Canadian illuminating and
lubricating oils are competing on al-
most equal terms in the markets with
the best brands of American manu-
facture.—The Canadian Magazine.

Holmes Ran a Glass Factory
Chicago, Aug. 23.—Another of H. H.
Holmes' mysterious buildings has been
discovered. The building is boarded up
and the residents of the vicinity say
nothing has been done there for a
long time. Two weeks ago, they say,
a man, whom they identify as Pat Quin-
lan, carried away most of the furniture
and other stuff that was in the build-
ing. It was here that Holmes carried on
his glass-making business, and it is
in this place for which the police have
been looking for more than a month
and never found it, being discovered
by an amateur detective. Inside there
is now nothing but scraps of iron and
shavings, and the remains of the furnaces
which ran the entire length of the
building. Pat Quinlan seems to have
been the presiding genius of the place.

The Coming Show
Sells' Brothers' astonishing aggregation
and their city of white tents, which will
visit Toronto on Aug. 29, is said to be
the largest show that has ever exhibited
in this city. Magnificent three-story
five-continent menagerie, 50 cages of rare
wild animals; the only pair of giant hip-
popotami, obtained in Asia and Bora; the
only flock of full-grown ostriches ever
exhibited in public. There are among the
many features of Sells' Brothers' Big
Show of the World. Remember, the only
big show that will exhibit in Toronto this
year. Come to town early. See the great
free street parade at 10 o'clock on the
morning of the exhibition.

Bradstreet's Decree Manitoba
New York, Aug. 23.—Bradstreet's
says Montreal and Toronto jobbers
anticipate a sharp improvement in
trade in the fall. The millinery open-
ings and Industrial Exposition at Mon-
treal, which is expected to open on
latter city will tend to stimulate trade.
In Nova Scotia rain has helped the
harvesting interests, but on Prince Ed-
ward Island it has injured the grain
crop. Quite cold weather in Manitoba
causes anxiety as to the crops there.
Bank clearings at Winnipeg, Toronto,
Montreal, Hamilton and Halifax ag-
gregate \$18,553,000 this week, against
\$19,245,000 last week, \$18,800,000 in
the week a year ago and \$16,228,000 two
years ago. There are 37 business fail-
tures reported from the Dominion of
Canada this week. Last week the total
was 29, one year ago 30 and two years
ago 47.

E. A. Patents Issued
The following is a list of United States
patents issued this week to Canadians, as
reported by Mr. Charles E. Hedges, solici-
tor of patents, Canada Life building, Tor-
onto: Joseph Nicholson and William H.
Ferguson, vacuum gas; John Maw, chain
leader; Robert Bustin, life-saving apparat-
us; Walter H. Avis, cordage machine.

PROPPED UP BY PILLOWS FOR 18
MONTHS.
A Terrible Experience With Heart
Disease, Yet Cured by Dr.
Agnew's Cure for the
Heart.
Do not our largest sympathies well
out to those who suffer from heart dis-
ease? It comes so suddenly and its
symptoms are usually so distressing
that the direct agony is experienced
by the patient. The case of Mr. L. W.
Law of Toronto Junction, Ont., who
was unable to lie down in bed for eigh-
teen months owing to smothering spells
and palpitation, is by no means ex-
ceptional. Who would have thought
the case so happily cured, and yet one
bottle of Dr. Agnew's Cure for the
Heart removed trouble in this case. It
gives such speedy relief that even
where the symptoms are less danger-
ous it ought at once to be taken as a
means of driving this terrible disease
from the system.

NO EQUAL IN THE WORLD.
Rev. W. H. Withrow, D.D., Now
Touring Europe With a Cana-
dian Patriotic One of Many to
Talk Favorably of Dr. Ag-
new's Catarrhal Powder.
There are few more noted travelers
than the Rev. W. H. Withrow, D.D., edi-
tor of The Canadian Methodist Maga-
zine, and one of the publications of the
great Methodist Church of this country.
He is a wide traveler and enjoys the
opportunities that travel gives, judg-
ing broadly the merits of any article.
He has expressed the written opinion
that Dr. Agnew's Catarrhal Powder is a
most excellent remedy for cold in the
head and various catarrhal troubles.
One short puff of the breath through
the Blower, supplied with each bottle
of Dr. Agnew's Catarrhal Powder, dis-
cusses this Powder over the surface of
the nasal passages. Painless and de-
lightful to use, it relieves instantly, and
permanently cures Catarrh, Hay Fever,
Colds, Headache, Sore Throat, Ton-
sillitis and Deafness. 50 cents.

TERRIBLE RHEUMATIC PAINS.
Lose Their Sway After Using South
American Rheumatic Cure.
The pain and suffering caused by
rheumatism is indescribable in lan-
guage. The best back, the crippled limbs,
the intense neuralgia pains that are
caused by this trouble almost drive the
victim to despair. The blessing comes
to those who have learned of South
American Rheumatic Cure, which is
simply marvelous in its effects, curing
desperate cases in from one to three
days. About some things there is no
certainty, but of one certain cure that
comes from South American Rheumatic
Cure there is no doubt.

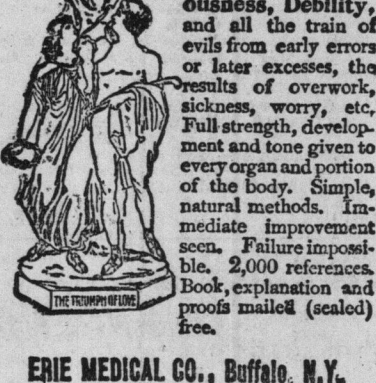
Dread Kidney Disease Quickly Re-
moved.
To even bunch the many words of
praise written of South American Kid-
ney Cure would consume large news-
paper space. But take at random a
few: Adam Soper, Burk's Falls, Ont.,
"One bottle of South American Kidney
Cure convinced me of its great worth."
Michael McMullen, Chesley, Ont.: "I
procure one bottle of South American
Kidney Cure, and taking it according
to directions got immediate relief." D.
Locke, Sherbrooke, Que.: "I spent
over \$100 for treatment, but never re-
ceived marked relief until I began the
use of South American Kidney Cure."
Rev. James Murdoch, St. John, N.B.:
"I have received one hundred dollars
worth of good from one bottle of South
American Kidney Cure."



AYER'S
Hair
VIGOR
Restores natural
color to the hair,
and also prevents
it falling out. Mrs.
H. W. Fenwick, of
Digby, N. S., says:
"A little more
than two years ago
my hair began to
fall out. After the
use of
one bottle of Ayer's Hair Vigor my
hair was restored to its original
color and ceased falling out. An
occasional application has since kept
the hair in good condition."—Mrs.
H. F. Fenwick, Digby, N. S.
"I have used Ayer's Hair Vigor
for three years, and it has restored
hair, which was fast becoming gray,
back to its natural color."—H. W.
HASELHOFF, Paterson, N. J.

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results from early
errors or later excess,
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Full strength, develop-
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every organ and por-
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Best Hardwood, long.....5.00 per cord Slabs, long, good and dry.....3.50 "
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