

SOME ASPECTS OF BEGINNING
OIL INDUSTRY IN PENNSYLVANIA
& USA

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TOPIC -
" STILL INITIAL DRAFT ONLY "

“ SOME ASPECTS OF
BEGINNING OIL INDUSTRY IN
PENNSYLVANIA & USA “

SCIENCE, TECHNOLOGY & SOCIETY
{ “STS” }

BY
FRANK J. GADEK, PH.D.

**BENJAMIN SILLIMAN, JR, WELL RESPECTED
CHEMIST AT YALE UNIVERSITY 1850'S
DID RESEARCH PROJECT ON PA "ROCK
OIL" FOR GEORGE BISSLE, NEW YORK
LAWYER & JAMES TOWNSEND,
PRESIDENT OF BANK IN NEW HAVEN, CT?**

**BUT SILLIMAN WAS NOT PAID FEE \$526.08
EQUIVALENT IN 1991 TO \$5000]**

**SILLIMAN SON OF GREAT AMERICAN
CHEMIST**

[P#19, 21, "THE PRIZE," DANIEL YERGIN, 1991]

**“ROCK OIL” – NOT FROM VEGETABLE &
ANIMAL FATS – FOUND IN SALT
WELLS AROUND OIL CREEK, NW PA**

**ONLY A FEW BARRELS OBTAINED BY
PRIMITIVE MEANS – SKIMMING &
USE OF OIL SOAKED CLOTHS**

USE MEDICALLY

**COULD IT BE EXPLOITED IN LARGER
QUANTITIES FOR ILLUMINATION?**

[P#19, “THE PRIZE,” DANIEL YERGIN, 1991]

**IN 1850'S COAL OILS USED FOR
ILLUMINATION**

**ALSO COULD BE USED FOR LUBRICATION
OF MODERN MACHINERY OF NEW
MECHANICAL AGE – LARD NOT
SUFFICIENT**

**THEY BECAME PERSUADED BY THEIR OWN
DREAM & PROSPECT OF RICHES**

BASIS FOR “AGE OF OIL”

[P#19-20,23, “THE PRIZE,” DANIEL YERGIN, 1991]

**SILLIMAN'S REPORT DATED APRIL 16, 1855
FORMED BASIS FOR INVESTORS**

**A "TURNING POINT" FOR PETROLEUM
BUSINESS**

**DEMAND FOR ILLUMINATION INCREASED
DUE TO INDUSTRIAL REVOLUTION
INCREASED POPULATION &
ECONOMIC DEVELOPMENT**

[P#22, "THE PRIZE," DANIEL YERGIN, 1991]

ILLUMINATION FROM:

ANIMAL OR VEGETABLE OIL

**COAL GAS – “TOWN GAS” – DISTILLED FROM
COAL – BUT EXPENSIVE**

**SPERM WHALE OIL – BUT DECLINING DUE
TO OVERHARVEST – BUT EXPENSIVE**

**CAMPHENE – DERIVATIVE OF TERPENTINE –
BUT COULD EXPLODE**

[P#22, “THE PRIZE,” DANIEL YERGIN, 1991]

CANADIAN DR. ABRAHAM GESNER

WHO DEVELOPED “KEROSENE” =

KEROS & ELAION GREEK FOR WAX

& OIL – ELAION CHANGED TO ENE TO

SOUND MORE LIKE CAMPHENE

**1854 GESNER APPLIED FOR US PATENT FOR
KEROSENE FOR ILLUMINATION**

**1859 HE ESTABLISHED KEROSENE WORKS
IN NEW YORK CITY – PRODUCED
5000 GALLONS / DAY**

**1859 ABOUT 34 COMPANIES IN US PRODUCING
\$5 MILLION / YEAR OF KEROSENE**

[P#23, “THE PRIZE,” DANIEL YERGIN, 1991]

FASCINATING ANCIENT HISTORY OF OIL

SMALL OIL INDUSTRY DEVELOPED IN
EASERN EUROPE – FIRST IN GALICIA
CHEAP LAMP INVENTED THERE TO BURN
KEROSENE

1854 KEROSENE A STAPLE OF COMMERCE
IN VIENNA

1859 ABOUT **36,000 BARRELS** PRODUCED
MOSTLY FROM GALICIA & ROMANIA

[P#24,25, “THE PRIZE,” DANIEL YERGIN, 1991]

BUT IN 1850'S USA & KEROSENE:

**HAD NOT SUBSTANTIAL SOURCE OF
SUPPLY**

**NO CHEAP LAMP WELL SUITED
TO BURN IT**

**BISSEL & INVESTORS IN PA ROCK
OIL COMPANY – NEEDED SOURCE
& RIGHT PRICE**

**DRILLING BETTER / CHEAPER THAN
“DIGGING” FOR OIL**

[P#25, “THE PRIZE,” DANIEL YERGIN, 1991]

**ADAPT SALT BORING / DRILLING TO
OIL**

BUT MANY SKEPTICAL

**HIRED “COLONEL” EDWIN L. DRAKE
[TITLE NOT REAL! ONLY FOR PR]**

**1857 HE ARRIVED AT TITUSVILLE, PA
POPULATION 125, IMPOVERISHED
VILLAGE IN NW PA**

[P#26, “THE PRIZE,” DANIEL YERGIN, 1991]

**1858 DRAKE SET UP SENECA OIL
COMPANY NEAR TITUSVILLE, PA**

SENECA NAME OF LOCAL INDIAN TRIBE

**FARM HAD AN OIL SPRING & 3 – 6 GALLONS
OF OIL / DAY COLLECTED BY
TRADITIONAL METHODS [SKIM,
RAGS???)**

[P#27, 29, "THE PRIZE," DANIEL YERGIN, 1991]

**HE WAS PERSISTENT & FOUND OIL
AUGUST 27, 1859 AT 69 FEET**

**COULD EVEN PUMP IT OUT WITH COMMON
HAND PUMP**

**FINAL PAYMENT HAD BEEN SENT TO DRAKE
AT END OF AUGUST SINCE
ORGANIZATION OUT OF MONEY**

BUT HIS SUCCESS “JUST IN TIME!”

[P#27, “THE PRIZE,” DANIEL YERGIN, 1991]

**SUCCESS CAUSED MAD RUSH TO AREA,
POPULATION INCREASED & LAND
PRICES SHOT UP FAST**

**DRAKE GOT EVERY WHISKEY BARREL
COULD TO FILL WITH OIL**

BUILT WOODEN VATS TO HOLD OIL

BUT FIRE BURNED ALL!

**HOWEVER, PRICE PLUMMETED SINCE
SUPPLY OUTRAN DEMAND**

[P#28, "THE PRIZE," DANIEL YERGIN, 1991]

**NO SHORTAGE OF OIL DUE TO
EFFICIENCY OF DRILLING**

**ONLY SHORTAGE WAS WHISKEY
BARRELS TO STORE IT!!!**

**BARRELS SOON COST MORE THAN
TWICE THE VALUE OF OIL
IN THEM!!!**

[P#28, "THE PRIZE," DANIEL YERGIN, 1991]

ADVANTAGES OF KEROSENE FOR

ILLUMINATION:

DAINTY, BRIGHT, CLEAR,
BRILLIANT LIGHT OF DAY,
& CHEAP!

BISSEL BECAME VERY WEALTHY &
DONATED 6 BOWLING ALLEYS
TO HIS COLLEGE DARTMOUTH
SINCE HE GOT INTO DISCIPLINARY
TROUBLES INDULGING IN THIS
SINFUL SPORT & WHERE HE SAW
HIS FIRST BOTTLE OF “ROCK OIL”

[P#28, “THE PRIZE,” DANIEL YERGIN, 1991]

DRAKE DID NOT DO WELL:

NOT GOOD BUSINESS MAN

1866 LOST ALL HIS MONEY

SEMI-INVALID LIVING IN POVERTY

1873 STATE OF PA GAVE HIM SMALL
LIFETIME PENSION FOR HIS
SERVICE

**LIVED IN BETHLEHEM, PA & BURIED
NEARBY [REF???)**

[P#98, "THE PRIZE," DANIEL YERGIN, 1991]

**BY 1860 15 REFINERIES OPERATING
IN PA OIL REGION & 5 IN PITTSBURGH**

**NOW MANY COAL-OIL REFINERS WOULD
BE PUT OUT OF BUSINESS**

**APRIL 1861 FIRST “FLOWING WELL” –
OIL GUSHED OUT AT 3000 BARRELS
/ DAY**

PRODUCTION INCREASED:

**1860 450 BARRELS, 1862 3 MILLION
BARRELS**

[P#29, 30, “THE PRIZE,” DANIEL YERGIN, 1991]

BUT DEMAND DID NOT KEEP UP WITH SUPPLY

SO PRICES DROPPED:

JANUARY 1861 \$10 / BARREL

JUNE 1861 50 CENTS / BARREL

MAY 1861 10 CENTS / BARREL

& MANY PRODUCERS RUINED

BUT DEMAND INCREASED:

END 1862 ROSE TO \$4 / BARREL

SEPTEMBER 1863 \$7.25 / BARREL

[P#30, "THE PRIZE," DANIEL YERGIN, 1991]

**IN LESS THAN 2 YEARS, ONE WELL
GENERATED \$15,000 PROFIT
FOR EVERY DOLLAR INVESTED**

**ENTHUSIASM FOR OIL ENTERED
POPULAR CULTURE – MUSIC – MANY
SONGS WRITTEN ABOUT OIL**

MUCH “BOOM & BUST” EVENTS!

[P#30,31, “THE PRIZE,” DANIEL YERGIN, 1991]

PA TIDEWATER OIL PIPELINE END OF 1870'S

WORLD'S FIRST ATTEMPT AT

LONG-DISTANCE PIPELINE

NO PRECEDENT & NO GUARANTEES

TECHNICALLY POSSIBLE

110 MILES FROM PA OIL REGIONS TO

READING RAILROAD

MAY 1879 OIL FLOWING IN PIPELINE!

COMPARABLE TO BROOKLYN BRIDGE'

4 YEARS LATER

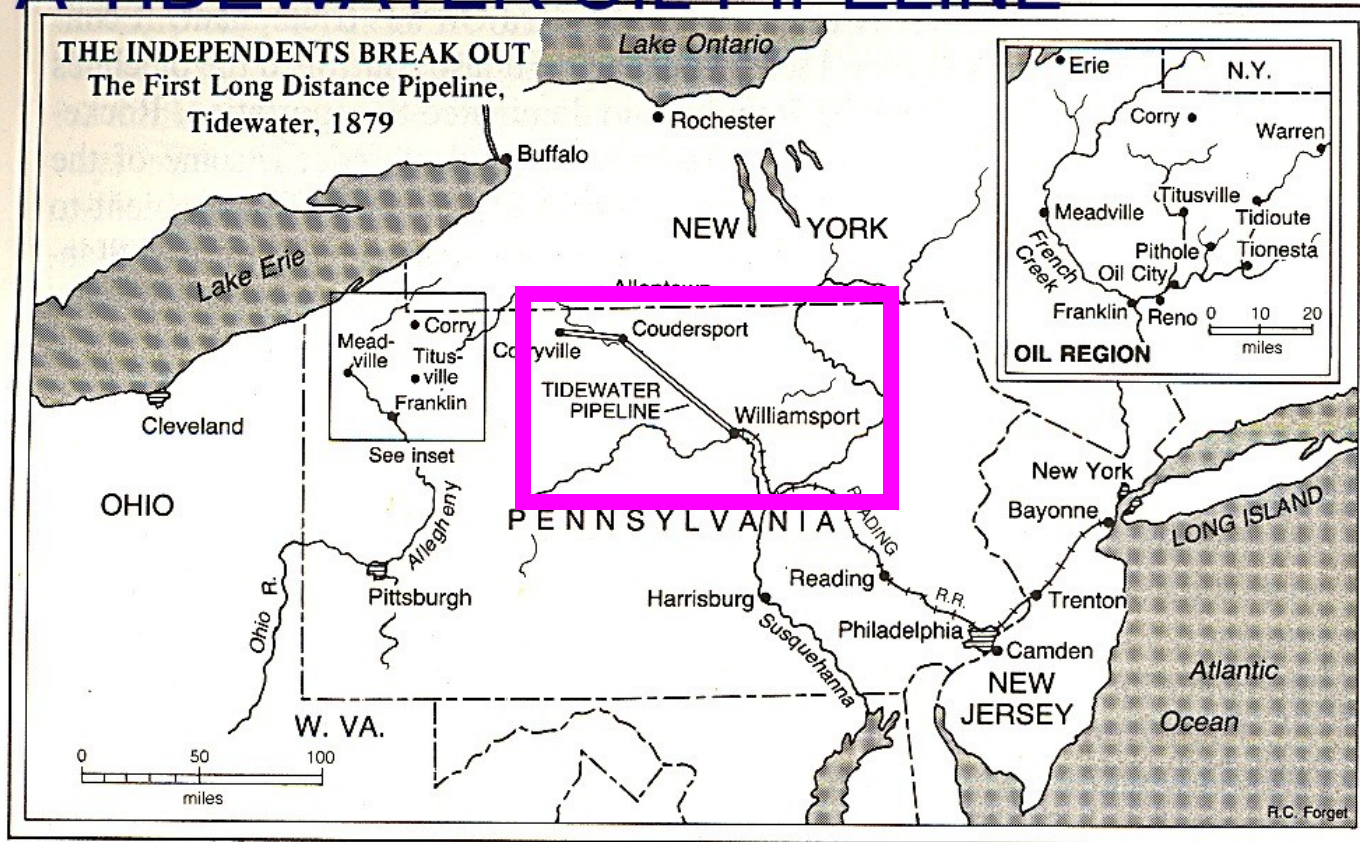
BECAME **MAJOR COMPETITOR** WITH

RAILROAD FOR LONG DISTANCE

TRANSPORTATION

[P#43, "THE PRIZE," DANIEL YERGIN, 1991]

PA TIDEWATER OIL PIPELINE



P#44, "THE PRIZE," DANIEL YERGIN, 1991

Oil, its reach and extent, and its manipulation of rebates and drawbacks. A

**WAY TO BREAKOUT OF STANDARD
OIL'S CONTROL**

**BUT STANDARD OIL EVENTUALLY
CONTROLLED EVERY INCH OF
PIPELINE INTO & OUT OF
PA OIL REGIONS, EXCEPT
SOME OF TIDEWATER**

[P#43, "THE PRIZE," DANIEL YERGIN, 1991]

**ONLY POLITICAL SYSTEM & COURTS
COULD HOLD GIANT STANDARD
OIL IN CHECK + PUBLIC OPINION**

THAT IS ANOTHER “STORY”

[P#43, “THE PRIZE,” DANIEL YERGIN, 1991]

JOHN D. ROCKEFELLER

BOUGHT OIL REFINERY IN 1865

FOR \$72,500 ON A HANDSHAKE!

PROVIDED ORDER OUT OF CHAOS

OF WILD PA OIL BOOM

RISE OF STANDARD OIL CO.

OPERATED USING MERCILESS

METHODS & UNBRIDLED

LUST OF LATE 19TH CENTURY

CAPITALISM

NEW ERA – BECAME ONE OF FIRST &

BIGGEST MULTINATIONAL COPORATIONS

[P#35, "THE PRIZE," DANIEL YERGIN, 1991]

DON'T KNOW REFERENCE

**WHEN ROCKEFELLER IN HIS 90'S
& IN FAILING HEALTH –**

**HIS “NURSE” LET HIM HAVE A COOKIE
& SOME MILK**

**THE MOST POWERFUL BUSINESS
PERSON IN THE WORLD???**

AND SO IT
ALL BEGAN!!!!

TO BE CONTINUED AS

INTEREST &

RESOURCES PERMIT

JUST LET ME KNOW !

