



ARCHIVES

Newsletter of the Petroleum History Society

November 2017; Volume XXVIII, Number 8

P.H.S. Lunch and Learn Meeting – Wednesday, November 29, 2017

“Pipelines in Canada: Past, Present and Future”

by Brenda Kenny – Engineer and Executive

Our speaker was for seven years the President of C.E.P.A. - the Canadian Energy Pipeline Association. She is an engineer and a onetime National Energy Board employee who brings a lifetime of perspective to the story of Canadian pipelines. When she retired from C.E.P.A. in early 2016 she stated that Canadians need to regain trust in industry. Her talk will build upon this theme and we will hopefully hear her views on the road ahead for the major pipeline projects that are still under consideration, as well as those that have fallen by the wayside.

Please see page 2 for Ms. Kenny's biography.

Time: 12 noon, Wednesday, November 29, 2017
Place: Calgary Petroleum Club
319 - 5 Avenue SW, Calgary; Cardium Room (but check marquee).
Dress: Business casual.
Cost: P.H.S. Members and Student Members \$35 and Guests \$40 (most welcome).
Only cash or cheque at the door. Payment can be made in advance by credit card or by e-mail. Please advise payment method with reply.
Lunch: Soup, sandwiches and cookies. Gluten-free? Vegan? Advise with reply.

NOTE: Instructions for registering for the Luncheon:

Reply, if you wish to attend, to: Micky Gulless at 403-283-9268 or micky@petroleumhistory.ca by noon, Monday, November 27, if not sooner.

Those who register but do not come, or cancel after the deadline, will be invoiced.

Those who do not register by the deadline may not get a seat.

The Bull Wheel



Membership renewals and information update: For those who need to renew their membership, requests will be issued in January. See your email or label for your expiry date. We will also be checking if our contact information for you is still correct.

Luncheon pricing reminder: Please be advised that on June 12, 2017 the P.H.S. Board approved a motion to increase luncheon prices for events held at the Calgary Petroleum Club by \$5.00 bringing those rates for \$35.00 for members and \$40.00 for non-members. We try to run these events on a long term break-even basis and increases in our costs over the last few years have unfortunately made this move necessary.

November 29 Speaker Biography: Brenda Kenny is an Adjunct Professor in the Haskayne School of Business at the University of Calgary. She serves on the Board of Governors for the University of Calgary, chairs that Board's Environment, Health, Safety and Sustainability Committee and sits on the Board of Emissions Reduction Alberta (E.R.A., formerly C.C.E.M.C.), an Alberta independent not-for-profit organization that invests in clean technology solutions. Brenda also serves on the Board of the Alberta Economic Development Authority (A.E.D.A.) to provide strategic advice on diversifying the economy and improving Alberta's competitiveness. She is a Fellow of the Canadian Academy of Engineering and a member of the Institute of Corporate Directors. She has been active in a variety of boards and community groups including WaterSMART, the Calgary Chamber of Commerce, Sustainable Calgary and imagineCALGARY. Brenda holds a Doctorate in Resources and the Environment, a Masters of Mechanical Engineering and a Bachelor of Applied Science.

Old Asphalt: It was recorded that some of the earliest extracts from the oil sands were used for road surfacing in the Edmonton area. Does anyone out there know exactly where that was – and, more to the point, whether any of that pioneering asphalt still exists? It should be a shrine.

Leduc #1 Anniversary: Our friends in Devon held a celebration on September 26, 2017, a bit belatedly, for the 70th anniversary of the Leduc discovery. This involved an "innovation Showcase". If you are interested in following their activities, join the Leduc/Devon Oilfield Historical Society and receive their "Catwalk" newsletter.

Aircraft Watching: For those of you into this, there is a viewing area on the SW corner of the airport just off McKnight Blvd. The park is named after Edward H. Laborde who was a pioneer in the Canadian oilpatch and was an inductee in the Canadian Petroleum Hall of Fame. He was originally from Louisiana – and conducted business out of his suite in the Palliser Hotel. Apparently he was also an early proponent of commercial air transportation in Calgary.

Call for contributions and speakers: The Petroleum History Society values your input. If you have an article that you'd like to see in *Archives* or if you have a talk that you'd like to give, please get a hold of us. Contact President Clint Tippett at the address indicated below.

Early Holiday Humour: Some light-hearted news and comments. 1. Last December the Calgary Sun announced that "Edmonton airport lands deal for giant pot factory". I guess there's more than one way to get high at an airport. 2. On July 1 the Calgary Sun provided a list of 160 of the biggest Canadian stars to honour Canada's 150th. Not sure of the logic of that math – but this might have been stretching it a bit as Gordie Howe was included twice. 3. On August 31 the Calgary Herald reported on the bold leadership initiative proposed by United Conservative Party leadership hopeful Jeff Callaway who suggested that we break the access to markets issue by building a pipeline to Churchill, Manitoba with a 250 barrel a day capacity. 4. Finally, at the memorial service for former P.H.S. Director and Canadian Petroleum Hall of Fame inductee Hugh Leiper, his grandson spoke fondly of the fun he had hiding his grandfather's "purple socks". I didn't realize that he was referring to the purple velvet bags that Seagram's Crown Royal rye whisky is enveloped in. He also related the story of how Hugh had arrived in Alberta with only \$2.10 in his pocket – of which he needed \$2.00 for the bus and ten cents for a coffee – after which he was thrown out of the bus terminal. And how he was so cheap that he'd drive 200 miles just to find a matching bolt. They don't make them like that anymore.

Interesting source (1): If you need to find some background information on Federal Government commissions and related investigations, these have been made available through the website www.pco-bcp.gc.ca/index.asp "PCO" is the Privy Council Office – probably an unexpected location. For example, I was looking for material on the 1950's Borden Commission that ultimately led to the creation of the National Oil Policy and the Ottawa Valley Line that split the country into a realm to the east supplied from offshore sources and a realm to the west supplied by Western Canadian producers.

Interesting source (2): Most nights we are treated to coverage of an industrial disaster somewhere. Usually there is no follow-up and so we are left hanging as to the ultimate outcome and the investigations to establish causes. In the United States, some of these incidents are covered by the Chemical Safety Board at www.csb.gov/investigations For anyone working in an industry setting or even just curious, this site contains a fascinating collection of reports, many of which, unfortunately, involve refineries and chemical manufacturing plants.

Editorial Comment: Please note that unless otherwise indicated, all contents of this newsletter have been created or assembled by P.H.S. President and *Archives* Editor Clinton Tippett.

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A visit to the museum and a New Perspective on the Oil Story

The following article has been submitted by P.H.S. Director David Finch who recently visited Central Canada and here expresses his opinions on the state of Canadian history as depicted in recently re-named Canadian Museum of History (formerly the Canadian Museum of Civilization, a name that presumably invoked memories of colonization)

Why does the “new” Museum of History in Gatineau, Quebec not tell the story of oil? Hydro is reviewed in detail. As are other natural resources. Before the last federal government renamed and reconfigured the Museum of Civilization the displays included a cable tool drilling rig and stories about Nitro Charlie Stalnacker and the use of natural gas at Medalta Potteries. All around Alberta oil stories. And why is the future of the energy industry often illustrated with images of wind turbines and solar panels and hydro dams? Conspiracy theories abound; governments hate oil, well-funded environmental groups are in charge of the trends, and today's leaders are embarrassed by petroleum. But really, none of these make sense. Back in the 1950s Alberta was going off coal because it was expensive, underground mining was dangerous due to explosions and black lung disease, and petroleum was a cleaner and cheaper fuel. Coal was not dead - though its demise is once again predicted today. Leaders in society in the 1960s found a new use for coal as a fuel for thermal plants that made electricity. Mining technology changed the game with open pit mining and safe industrial systems.

Petroleum's story needs reimagining. Retelling too. Forget about saying how good it is, how it heats homes and fuels our gas-guzzling trucks and how it benefits all levels of society. Those are old excuses. Today's oil story is about its leadership. Petroleum continues to lead society as the solution to the greenhouse gas issue. The same product that contributes to carbon emissions is also the collaborator in my Prius, a hybrid car that uses a small 3-cylinder engine to make electricity and sips gasoline in small quantities. The future is not a world without petroleum, but a visionary place where oil is used intelligently. At the Turner Valley gas plant, for example, leaking natural gas from a natural seepage near the 1914 Dingman Discover Well will soon be incinerated in two micro-turbine units that burn the smelly gas at high pressure and high heat and create electricity as a byproduct. That's leadership. Petroleum's story is always evolving and only backward thinking will keep us defending historically unwise, unthinking and wasteful use of oil. Now is the time to celebrate the constant innovations, initiatives, problem solving and imaginative leadership of the people in the petroleum industry.

David Finch is a historian. He is a Director of the Petroleum History Society as well as an enthusiastic supporter of the Turner Valley Oilfield Society.

Editor's footnote: *The Canadian Museum of History has been attacked by environmental groups for accepting sponsorship funding in 2013 from the Canadian Association of Petroleum Producers. To paraphrase their messages “The Museum of History has a dark secret: Big Oil is using it to sell environmental destruction and rejection of climate change. ... Our trusted museums shouldn't be a platform for companies trying to destroy policies that protect people and the planet” (Perfitt 2017). Unfortunately the website for the museum is somewhat byzantine and it cannot be confirmed whether or not a drop of oil might be lurking somewhere – or for that matter what the fate of the \$1 million C.A.P.P. donation was.*

EXHIBITS AT THE “OLD” CANADIAN MUSEUM OF CIVILIZATION



The evolution of oilfield drilling technology



Video of well shooting technology – early well stimulation (fracing)

Inorganic Theories Pertaining to the Origin of Petroleum

The following article was submitted by P.H.S. Treasurer Micky Gulless who extracted it from a book owned by her father, Cecil Gulless. The volume once belonged to Jay Clampitt (not Jed) who was "the boss" of Amerada Petroleums in the 1950's. It also has a chapter on oil shales that begins, "The oil shale industry has recently become of great interest and importance. ..."

- a. The *carbide theory* is based upon the fact that in the chemical laboratory carbides of calcium, iron, and several other elements give hydrocarbon products when in contact with water. It is assumed that great quantities of calcium, aluminum, iron, and other similar carbides exist deep underground, and that the action of hot water upon these carbides forms liquid and gaseous hydrocarbon compounds that rise upward through fissures and other vents in the earth and collect in the sedimentary beds above. This theory has been strongly supported by some able chemists, but it is not advocated by many geologists.
- b. The *limestone, gypsum, and hot water theory* is advocated by some writers. According to this theory, the action of heated water upon limestone, CaCO_3 , and gypsum, $\text{CaSO}_4 \cdot 2(\text{H}_2\text{O})$ which in nature are often closely associated, gives as products the constituents of petroleum. The exact chemical processes have not been fully explained, but it is certain that limestone, gypsum, and water contain all the necessary elements for the production of petroleum. Under certain conditions of heat and pressure, it is not impossible that oil may be formed as thus postulated.
- c. The *volcanic theory* is based upon the fact that gases given off from some volcanoes carry small percentages of hydrocarbons. These gases are supposedly of deep-seated origin, and carry the products of chemical reactions that occur in the earth. It is assumed that the gases are condensed before reaching the surface by coming in contact with cooler formations near the surface and thus form petroleum. As a laboratory theory, the volcanic idea is plausible, but it by no means explains most of the occurrences of oil as noted by the field geologist.

From:

Practical Oil Geology - The Application of Geology to Oil Field Problems

By: Dorsey Hager, Petroleum Geologist and Engineer, Author of Oil Field Practice

Chapter 1: Petroleum - Its Origin and Accumulation - Classification of Theories

Fourth Edition - 1926

McGraw-Hill Book Company, Inc.

Copyright 1915, 1916, 1919, 1926

Editor's Footnote: *Theories for the inorganic origins of petroleum have been around for a long time – and were quite popular in the early days of the industry. Many prominent geologists (like Eugene Coste) believed that there was an association between igneous activity and the generation of hydrocarbons – a perspective supported in many places by the occurrence of hydrocarbons in volcanic and even plutonic rocks. Current wisdom is that these are purely local effects and that most oil and gas are generated during regional heating.*

Thomas Owen Bosworth 1882-1929

The following text has been extracted from a manuscript received in 2016 from P.H.S. Director Peter McKenzie-Brown entitled "The Bosworth Expedition: An Early Petroleum Survey" to be published in it's entirety at a later date. The ultimate fate of Bosworth himself has remained something of a mystery but two obituaries have been unearthed and are reproduced below.

"A largely unknown expedition at the beginning of the First World War was equally pivotal (compared to Turner Valley and Leduc). In 1914 British geologist Dr. T. O. Bosworth went down the Mackenzie River. His findings would be critical to the modern industry's birth. Two Calgary businessmen, F. C. Lowes and J. K. Cornwall, commissioned Bosworth's journey. They wanted to investigate the petroleum potential of northern Alberta and beyond, and to stake the most promising claims. Bosworth did not disappoint. His confidence that the north had high potential for oil prospecting is apparent on almost every page of his 69-page report. Bosworth's own words suggest how ambitious the expedition was:

The undertaking was planned in March 1914.... In April I consulted with the officers of the Government Geological Survey and other Departments in Ottawa and gathered from them all available information: maps and literature bearing on the subject. At the beginning of May, I journeyed from London to Canada accompanied by three assistant geologists and surveyors, and on May 19th, the expedition set out from Edmonton to travel northwards in the Guidance of the Northern Trading Company. We returned to Edmonton September 24th.

By the death of THOMAS OWEN BOSWORTH Geology has lost a man from whom much further valuable work was expected. He was one of the many geologists who have come from St. John's College, Cambridge, where he had a successful course, gaining a First Class in the Natural Sciences Tripos, and the Harkness Scholarship in Geology. An early paper (1906) on the zones of the Lower Chalk was followed by a series of papers on the Trias of the Midlands. He served for a few years on the Geological Survey of Scotland, and from his observations contributed two papers on the geology of Mull, while various notes of his are incorporated in the Survey Memoir on the later rocks of that island. His most notable work there was mapping the famous leaf-beds at Ardtun. While in Scotland he issued a paper on the heavy residues of the Scottish Carboniferous rocks, and, following the example of another geologist who did the same, took to oilfield geology, and accomplished what will probably prove his most enduring work. He wrote two valuable books on the geology of the American oil-fields, one on the Mid-Continental Fields of the United States, including Oklahoma and Texas, and the other on the oil-fields of Peru, where his work has supplied important additions to the geology of South America and the Andes. His third contribution to American geology was upon the remote oilfield of the Mackenzie River.

OBITUARY

**Thomas Owen Bosworth, M.A. (Camb.), D.Sc. (Lond.),
F.G.S.**

BORN 28TH MARCH, 1882.

DIED 18TH JANUARY, 1929.

T. O. Bosworth was born at Spratton, Northamptonshire, and became a Scholar of St. John's College, Cambridge, in 1902. He was placed in the first class of the Natural Sciences Tripos (Part 1, 1905; Part 2, 1907) and was awarded the Harkness Scholarship. From 1904 to 1911 Bosworth devoted his spare time to the study of the Keuper Marls of Leicestershire and the results of his investigations were published in *The Keuper Marls around Charnwood* (Leicester, 1912), in which after describing the physical character, stratigraphy and petrology of the marls he discusses their mode of origin. In the years 1908 and 1909 Bosworth was on the staff of the Geological Survey of Scotland and mapped part of Mull under the direction of C. T. Clough. After leaving the Survey the greater part of his life was spent abroad as an oilfield geologist, working in Galicia, Italy, Trinidad, Barbados, Peru, Venezuela, Ecuador, Texas, the United States and Canada to within the Arctic circle. Although his professional work was economic his primary interest was in pure geology, but owing to want of time and other restrictions much that he did remains unrecorded. He will, however, be long remembered by his great work on the *Geology of the Tertiary and Quaternary Periods in the North-west Part of Peru* (London, 1922). Scarcely anything was previously known of the geology of this region and the investigations, extending over several years, were carried out under the trying conditions of a desert climate and a rugged country. Of this work one reviewer wrote: "The story revealed is of enthralling interest, most clearly presented by Dr. Bosworth, but worthy of the pen of a Lyell, a Suess, or a Geikie." His other publications include *Geology of the Mid Continent Oilfields—Kansas, Oklahoma and North Texas* (New York, 1920) and several papers in the *GEOLOGICAL MAGAZINE*: "Wind Erosion on the Coast of Mull" (1910), "Outlines of Oilfield Geology" (1912), "Heavy Mineral Grains in the Scottish Carboniferous" (1912), "Semi-Arid Conditions in Southern Texas" (1913). He was awarded the Wollaston Fund in 1921.

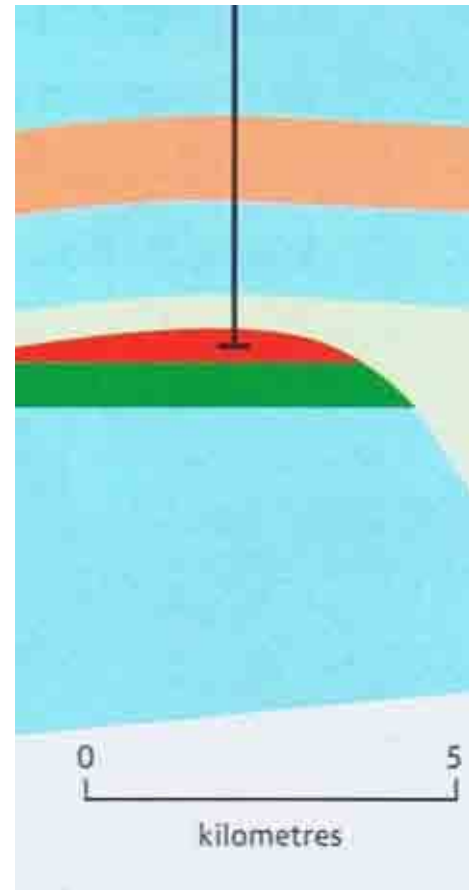
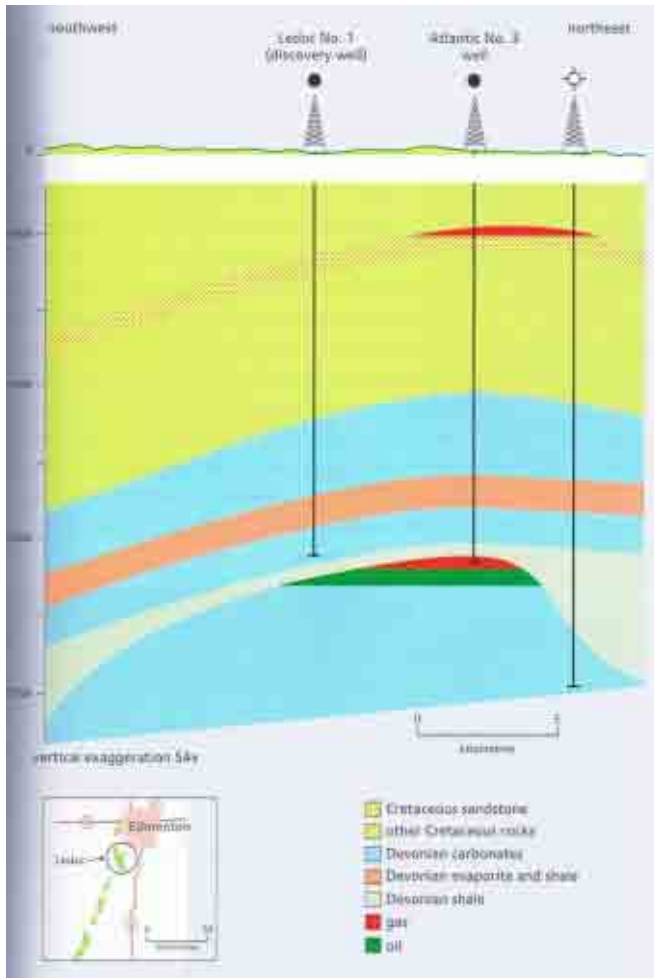
For several years Bosworth had suffered from ill health, but with characteristic pertinacity he stuck to his work until it was no longer possible. As recently as last August he left England for Ecuador, intending to stay a year, but by November he became seriously ill and was compelled to return. He arrived in London in January and died a week later.

The Bosworth expedition covered huge distances and, according to the report, there were excellent exploration prospects in three general regions: the Mackenzie River between Old Fort Good Hope and Fort Norman, the Tar Springs District on Great Slave Lake, and the Tar Sand District on the Athabasca River."

Obit 1: Proceedings of the Geological Society of London – Session 1928-29 for Nov. 7, 1928

Obit 2: Geological Magazine, v. 66, no. 4, pp. 191-192. Both courtesy of Mark Cooper.

Atlantic #3 Blowout – 1948: From Whence Cometh the Oil



Detail of the Devonian penetration

The illustration above has been extracted from the oil and gas section of an excellent overview volume of Canada's geology entitled "Four Billion Years and Counting: Canada's Geological Heritage" published through the Canadian Federation of Earth Sciences. The diagram is a bit misleading because it does not show any oil being penetrated by the Leduc #1 wellbore (left) whereas in reality the discovery was made in the Nisku Formation – the thin blue layer about the D3 reef. However it was more the total depth (TD) of the Atlantic #3 well (middle) that caught my eye. As shown, the wellbore did not penetrate the green oil leg in the reservoir but rather TD'd in the red gas cap. Thinking this an error, I went back and checked the data including Aubrey Kerr's famous book about this well. What I found surprised me. The well entered the reef at 5265' and logs were run at 5267'. With the formation taking fluid, the well was then drilled "dry" – that is without fluid returns - on its way to a planned casing point at 5349'. However at 5331', some 66' into the reef, the well blew out, probably having been swabbed in during a drill string operation. The gas-oil contact in the field is known to be at 5336' so the wellbore never did get into the oil leg.

So how did this well become an oil blowout? I can only deduce that the effect of the upward release of reservoir gas in the early stages of the blowout must have sucked the top of the oil column upwards and into the wellbore carrying it to the surface.

In the Beginning there was Hope

Not sure if you've ever noticed but a lot of the "books" produced by groups in the 1950's were themselves works of art. These include some field trip guidebooks and university yearbooks. The most notable feature was their beautiful pseudo-leather covers with abundant high relief embossing. I recently bought one at a sale – it is the 1951 "Evergreen and Gold" yearbook for the University of Alberta whose theme that year was "The North". I was very pleased to find in this volume the photo reproduced below.



These famous hockey players include current P.H.S. Lifetime Member Gerry Maier and Member Leroy Field, as per the photo caption. The Golden Bears were on a "road trip" to Colorado Springs where they played Colorado College, losing both games with scores of 7-3 and 8-7. They then travelled to Denver where they played the University of Denver winning both matches 5-4 and 8-7. The pain was dulled in Colorado Springs by a meeting with Bob Hope (above).

The class photo section of the yearbook contains some interesting personal details. For Gerry, who was a graduating student with a B.Sc. in Petroleum Engineering, the entries are Maier, Gerald J., Jameson, Sask. Assistant Manager of Covered Rink 1950-51; E.S.S. 1947-51; Interfaculty Hockey 1947-51; Intramural Football 1949-50; Petroleum Club 1950-51 and Newman Club 1947-51. Leroy was at that point an undeclared first year engineering student from Bowden, Alberta. These gents have been involved in "the patch" almost forever.