



**PETROLEUM
HISTORY
SOCIETY**

ARCHIVES

Newsletter of the Petroleum History Society

March 2007; Volume XVIII, Number 2

P.H.S. Annual General Meeting and Awards – Wednesday, March 28, 2007

**Petroleum History Society A.G.M.
featuring the 2005 and 2006 P.H.S. Awards Ceremony**

This year we will be highlighting our annual awards program and getting back up to date by presenting expressions of our appreciation to two groups of people and organizations who have made significant contributions to the preservation of Canadian Petroleum History. The awards and their recipients are described in detail on page 3 of this issue of Archives. As we go to press we are still trying to line up a feature speaker – so if, when you get this, you realize that you might be able to help out, please call the number below to discuss.

The schedule for the meeting will be:

- | | |
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| 4:00 p.m. | Meeting commences – call to order |
| 4:05 p.m. | President's Report |
| 4:20 p.m. | Treasurer's Report |
| 4:30 p.m. | Election of P.H.S. Officers and Board for the 2007-2008 term |
| 4:45 p.m. | 2005 P.H.S. Awards |
| 5:15 p.m. | 2006 P.H.S. Awards |
| 5:45 p.m. | Possible Speaker |
| 6:15 p.m. | Mix and Mingle with snacks and cash bar - Please come out and join us! |

- TIME:** 4:00 p.m., Wednesday, March 28, 2007.
PLACE: Fairmont Palliser Hotel (133 - 9th Avenue S.W.) – The Penthouse (check marquee)
COST: Members and Guests (most welcome) - free of charge

**For the sake of our snack planning, please
R.S.V.P. if you wish to attend to: Clint Tippett, 691-4274 or
clinton.tippett@shell.com by noon Monday, March 26**

THE PETROLEUM HISTORY SOCIETY
THE BULL WHEEL



Next Board Meeting: The Board will meet next at noon on March 28, 2007 in the Spanish Room at 3:30 p.m. preceding the Annual General Meeting.

Volunteers: We are always on the lookout for people with the energy and dedication to help us grow and to undertake projects on the Society's behalf. Please contact Clint Tippett (691-4274), Doug Cass (268-4203) or Hugh Leiper (249-0707) if you would like to get involved.

Next Luncheons: We are always seeking speakers and interesting subjects. If you would like to consider presenting, please contact Clint Tippett, President P.H.S., at 691-4274.

Canadian Centre for Energy Information: The P.H.S. has a "Content, Marketing and Traffic Partnership" with the Centre. This arrangement is an expression of the mutually beneficial cooperation that exists between our two organizations. Please see www.centreforenergy.com for more details. Of particular interest to our members is their on-line historical volume "Evolution of Canada's Oil and Gas Industry" that can be downloaded free of charge.



P.H.S. Pin Sets: Our pin sets (of 6) have been reduced in price to \$40.00. Please contact the Society if you are interested in buying one or several sets. These make great and original Calgary- or Western Canada-related gifts. Detailed comprehensive descriptions accompany each plush-boxed set.

An Anniversary – The Ocean Ranger: The Ocean Ranger, once considered the Cadillac of offshore oil rigs, capsized on Feb. 15, 1982 during a raging nighttime storm that generated seven-storey waves in the icy North Atlantic. The disaster 25 years ago claimed the lives of all 84 crew aboard. It was the worst offshore drilling accident in Canadian history. A large rogue wave is believed to have set off a chain of events that led to the tragedy. A rush of water punched through a glass porthole soaking an electrical panel used to control ballast gauges and pumps. As salt water seeped into the switches, they began to short out and the power was quickly shut down. What happened next is unclear, but evidence gathered by a Royal Commission suggested the power was switched on several hours later. That caused the damaged switches to open the wrong ballast valves. Woefully untrained crews tried to close the valves manually, but their efforts had the opposite effect, aggravating the situation. A mayday was issued. Supply boats arrived at the scene, only to find severely damaged lifeboats and men bobbing in seas so rough they couldn't be reached. (adapted from the Canadian Press, St. John's).

2005 Petroleum History Society Awards

Book of the Year Award for 2005: “Roughnecks, rock bits and rigs: the evolution of oil well drilling technology in Alberta, 1883-1970” by Sandy Gow, University of Calgary Press, 451 p.

Article of the Year Award for 2005: “New Horizons: surveying for the emerging oil and gas industry” by Judy Larmour, in: “*Laying Down the Lines: a history of land surveying in Alberta*”, Brindle & Glass Publishing, Calgary, pp. 216-240.

Multimedia Award for 2005: Pay Dirt Pictures Inc. for the film “Pay Dirt: Alberta Oil Sands – Centuries in the Making”, Calgary.

Preservation Award for 2005: The Canadian Drilling Rig Museum, Selkirk, Ontario.

Lifetime Achievement Award for 2005: Not awarded.

2006 Petroleum History Society Awards

Book of the Year Award for 2006: “Canada’s Victorian Oil Town – The transformation of Petrolia from Resource Town into a Victorian Community” by Christina Burr, McGill – Queen’s University Press, 295 p.

Article of the Year Award for 2006: “1980: Duel of the decade” by Tammy Nemeth, in: Payne, M., Wetherell, D. and Cavanaugh, C. (eds.) “*Alberta Formed – Alberta Transformed*”, University of Alberta Press/University of Calgary Press. (Correction: Author’s name added after publication of this issue of Archives.)

Multimedia Award for 2006: Murray Dale and the Alberta Energy and Utilities Board, for the DVD “A Salute to the People of the EUB”, Q and D Productions Inc.

Preservation Award for 2006: Anaid Productions Inc. and the Outdoor Life Network for “The Rig”, a thirteen-episode look at life on a modern drilling rig in Alberta. (Correction: network name corrected after publication of this issue of Archives.)



Lifetime Achievement Award for 2006: Not awarded.

Archives is published approximately six times a year by the Petroleum History Society for Society members.

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Back issues are archived on our website at www.petroleumhistory.ca

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Craigleith Oil Shale Works, Ontario

Thanks to P.H.S Director Frank Dabbs for this contribution

When the Athabasca and Peace River oil sands of Alberta were still a minor curiosity in the Hudson's Bay Company's British North American fur-trading empire, Canada's first commercial unconventional oil project was producing up to 1,000 gallons a day of high-quality lamp and lubricating oil from a kerogen deposit in the Upper Ordovician shale on the south shore of Georgian Bay.

The Craigleith Oil Shale Works, more familiarly known at the time as the Collingwood Shale factory, was constructed in 1859 to exploit a discovery that resulted from a work place accident with a striking resemblance to the Canadian Pacific Railway's natural gas find at Alderson, west of Medicine Hat.

In 1883 CPR well drilling crews – looking near Langevin Siding for water to replenish the boilers of its steam locomotives – drilled into a natural gas trap that led Geological Survey of Canada's George Dawson to correctly forecast the ubiquitous sandstone shallow gas deposits of southeastern Alberta. A year later, the railway was heating and lighting the buildings at the siding with gas from a permanent well. Forty years earlier, in the 1840s, the northern fringe of settlement in western Ontario reached the shores of Georgian Bay and the Bruce Peninsula during the last wave of pre-Confederation agricultural settlement in Upper Canada / Canada West.

The first wave occurred with the arrival of the United Empire Loyalists in the late 1770's in the wake of the American Revolution. The second occurred after the War of 1812 when the colonial government wanted the Great Lakes border country occupied with reliable British subjects who would resist annexation by the United States. The third wave came after the Rebellion of 1837 and included the founding of the Georgian Bay lakeside towns of Collingwood and Owen Sound, and the settlement largely by Scottish and Irish immigrants of the Queen's Bush – a vast tract of rolling glacial-cut hills, plans and watercourses between the two ports.

In the 1850s, the government began construction of regional infrastructure including roads and railways across this frontier. The Blue Mountain, west of Collingwood, held strata of Devonian, Silurian and Ordovician dolostone, limestone and shale that attracted quarrymen exploring for material for stone bridges, foundations and buildings. The best quarry sites were on the bay at the foot of the mountain, accessible to road and boat transportation and the first railway spurs that followed the shoreline. In the mid-1850's pioneer crews opened a quarry on the bayshore between Collingwood Harbor and Owen Sound at a location where greenish-grey limestone ledges jutted into the water. Here, men cut into the side of the mountain to recover hard, nodular Upper Ordovician shaly limestone ideal for bridge, lighthouse and building construction.

In autumn and spring, they lit campfires of maple, oak and elm for warmth during their breaks. One night in late 1857 or early 1858 – a more exact date has yet to be established – the quarrymen left their campfire burning. When they returned to the site the following morning, the rock beneath the primitive hearth was on fire.

In the Bruce Grey Geology Committee's 2004 book, "A Guide to the Geology and Landform of Grey and Bruce Counties", published by the Owen Sound Field Naturalists, Daryl Cowell offers this description of the what the quarrymen had found:

“The Lindsay Formation (of the Upper Ordovician) . . . is a hard, nodular grey to greenish gray limestone that forms rock ledges along the shore. The depositional environment was a deep marine shelf. It is fossiliferous, rich in trilobites, brachiopods, cephalopods, pelecypods, gastropods and conularids.

“The upper member of the Lindsay Formation, the Collingwood Member . . . is dark grey, organically rich, fossiliferous shaly limestone has been referred to as “bituminous shale. When freshly broken off the rock may give an oily smell.”

In business circles of the day, there was some awareness of oil shale occurrences and their potential as a source of lamp oil and lubricants. Coupled with the general unpopularity of kerosene and coal gas because of their smelly effluents, there was a strong commercial motive to look into the burning rock at the Blue Mountain quarry: it was expected to be cheaper than competitive fuels.

The first recorded experiment to test the commercial potential of discovery is documented in an oral history called “The Lovely Townships of Grey & Bruce” produced by Victoria and Grey Trust in 1977 to commemorate its history as an Owen Sound-founded business:

“Realizing that a rich resource might have been found, an experiment was tried. An old muzzle-loading rifle was filled with chunks of the rock and then placed in a fire. As the rock heated, an oil was produced that could be lit at the musket’s nipple. The oil burned a good long time.”

A Toronto-based company called Pollard McDonald & Co. was formed to capitalize the development of an oil shale project. William Darley Pollard was a Collingwood Harbour businessman and Duncan and John McDonald, father and son, were members of a wealthy Toronto family. The first attempts to recover oil from the rock involved the construction of wood-fuelled, open-top retorts for destructive distillation that, on a worldwide basis, was the standard technology for the recovery from bitumen from the shale. The retorts with their brick and stone fireboxes were preferred for their safety – escaping associated gases vented into the atmosphere, minimizing the risk of the accidental explosions.

Initial recoveries were disappointing but, as the Owen Sound Comet reported in a March 22, 1860 story about the start-up of the enterprise, “This Oil is said to be better for burning than Coal Oil or even (coal) Gas itself, having less smell and giving better light.”

Pollard and the McDonalds sent a young engineer to learn “the proper art of turning rock oil into lighting oil,” the Victoria and Grey oral history relates. The training was successful, and in 1859 Pollard McDonald & Co. patented a destructive distillation process employing cast-iron retorts and a rectifying process that separated light lamp oil from heavier lubricating oil.

The company constructed a complex including the quarry operation, logging for firewood, 24 distillation retorts, an engine room for steam power, shops for blacksmiths and carpenters and a stillroom for the rectifying process. There was a bunkhouse and kitchen for 100 men.

The facility was designed to produce 1000 gallons a day of lamp and lubricating oils from 30 to 35 tons of shale, operating around the clock. John McDonald became the operator of the project, the Comet reported.

Quaintly, the newspaper gives this account of the shale oil geology:

“The rock of which (sic) this Oil is obtained is said to be petrified animal substance – the animal not known since the flood.

“If this be so, these animals must have all congregated in this one place, when Noah forgot them, for this bed of rock extends for thirty or forty miles and is found on the other side of the Mountain.”

Transportation of the product was in barrels by horse-drawn wagons to the railhead in Collingwood Harbour. The primary market was Toronto, in addition to local sales. Commercial production began in 1859 and ramped up slowly – it was to have reached its peak at 1,000 gallons per day in the summer of 1860, but there is some ambiguity about whether the factory sustained its rated capacity.

A fire on the night of April 28-29, 1860 destroyed the wood-frame rectifying building and consumed 1,500 gallons of oil. The blaze was triggered when a worker tried to check the flow of product from a tap on a still, using a candle for illumination. The still wasn't damaged, and production resumed in ten days, but the incident is evidence that all the ramping up and de-bottlenecking issues faced in Alberta's oil sands by the megaprojects of the 20th Century were also an integral part of 19th Century unconventional oil production. The average sustained production from the Craigeith quarry was probably about 250 gallons per day; the impediment to higher rates appears to have been on the transportation and marketing side of the operation. The product was popular; in addition to its more-pleasant aroma and higher candlepower, the lamp oil from the Collingwood shale factory sold for one third less than the cost of kerosene and coal gas, the Owen Sound Comet reported.

The Collingwood member of the dolomite Lindsay Formation in the Upper Ordovician on Georgian is one of those rich, but nonetheless insignificant petroleum occurrences that confirms Saudi Arabia's OPEC-founding oil minister Sheik Zaki Yemeni's proposition that the stone age did not end because we ran out of stones, and the oil age won't end because the earth runs out of oil.

The discovery and development of conventional oil at Petrolia and Oil Springs in Lambton County, two hundred miles to the southwest in 1858 – cheaper to recover and closer to market – put the Collingwood shale factory out of business in 1863. Distance to market and cheaper competition were the same impediments that held up the development of Alberta's oil sands for ninety years after the Hudson's Bay Company turned its territory over to Canada and the Geological Survey of Canada began to champion their development.

The vast size of the Alberta oil sands deposits held the attention of scientists, engineers, geologists and investors until engineering, economics, transportation and marketing challenges could be met – 100 years after the closure of the operation on Georgian Bay. The minor quantity of oil in the Lindsay Formation could never command equal patience and persistence. In a striking parallel to the discovery of natural gas at Langevin Siding in Alberta, a small rural railway station called Craigeith was constructed near the quarry when the rail line came through in the 1870s. There remains a 70 km apron of oil shale deposits skirting Collingwood's Blue Mountain. The ski slopes and miles of snowmobile trails above and around the site of the former quarry are now the economic prize that is vigorously pursued alike by condominium developers, hoteliers and the vendors of snowmobile machines.

An Ontario Heritage Foundation roadside marker at the gate to Craigeith Provincial Park is all that preserves the memory, faintly, of Ontario's “other” oil discovery of 1858.