



The Geological Survey of Canada and the Petroleum Industry - A Partnership of Discovery

by William R. S. McLellan
President of the Petroleum History Society

(Excerpts from a paper delivered to the Petroleum History Society's luncheon on September 25, 1992, and at the Glenbow Museum as part of the GSC's 150th Anniversary Celebrations on September 30, 1992. The complete text of this paper is available from the Petroleum History Society.)

The Geological Survey of Canada is older than the country itself and has served Canada with distinction for 150 years now, making it one of the country's oldest and most valued institutions. From its beginnings in Upper and Lower Canada in 1842, the Survey has grown into one of the world's most prestigious scientific organizations. In addition to its extensive scientific contributions to Canada and the world, the Survey, with its systematic search to reveal Canada's extensive mineral and energy resources, led the way in exploring and mapping this vast land.

The Geological Survey of Canada arose 9 years after Doctor Rae, a member of the Parliament of Upper Canada, petitioned for financial assistance to conduct a resource survey of Upper and Lower Canada. Widely supported by political notables of the day, a petition was placed before the first United Parliament of Upper and Lower Canada following the Act of Union in 1840. The parliament debated the petition and, on September 10, 1841, resolved:

"that a sum of money, not exceeding 1500 Pounds Sterling, be granted to Her Majesty to defray the probable expense in causing a Geological Survey of the Province of Canada".

In 1842, the Government appointed William E. Logan as Director, and the Geological Survey of Canada was born. Under Logan's 27-year leadership, in addition to extensive geological mapping of the embryonic Canada, the Gaspé Peninsula and the Maritimes were surveyed. The coal measures of Nova Scotia were investigated in considerable detail.

In the earliest years, and even to a considerable but somewhat lesser extent today, geologists with the Survey were jacks-of-all-trades. Often penetrating areas of the Canadian wilderness where no white man had been before, they were true "explorers", in the nineteenth century meaning of the word, acting as geographers, topographers, biologists, and ethnologists. They collected information on weather, flora and fauna, water power and agricultural potential; as well as natural waterways for navigation, often

mapping rivers and lakes for the first time. They conducted the earliest systematic exploration of the northern half of the North American continent and the islands of the Arctic beyond, recording for the first time the history and customs of many native North American cultures.

As the importance of mineral wealth, including petroleum, in any part of the country became an important consideration of businessmen or politicians, the officers of the Survey played a critical role in the initial investigations and appraisals. The Geological Survey of Canada continues to do this today, particularly in the remote northern regions of the mainland and in the Arctic Islands.

While the young Geological Survey was engaged in actively evaluating the mineral assets of Upper and Lower Canada, and the maritime areas to the east, the explosive settlement of the American West was causing considerable concern to those living in or responsible for the vast regions of British North America to the west, particularly Rupert's Land then owned by the Hudson's Bay Company.

In 1846, the International Boundary was established along the 49th parallel, extending all the way from the Lake of the Woods to the Pacific Coast just south of the frontier town of Vancouver. The boundary, however, would not be surveyed until many years later, beginning in 1873.

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The Petroleum History Society January Luncheon

*Documenting The Oil Patch:
Preparing a Contemporary Snapshot of the
Petroleum Industry*

by
Sandra Shields and David Campion

Noon, Tuesday, January 26, 1993
Palliser Hotel

RSVP to Krista Sippola, 267-1100
No later than Noon, Monday, January 25
Members \$20, Nonmembers \$22

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In 1846, very little was known of the economic potential of the northwest frontier and very little was done to expand this knowledge-base until the British and Canadian Governments both launched independent explorations of the area in 1857.

Captain John Palliser was commissioned by the British Government and the Royal Geographical Society to lead the first scientific expedition into the west with instructions to explore:

"that portion of British North America which lies between the northern branch of the River Saskatchewan and the Frontier of the United States, and between the Red River and the Rockies".

With Palliser was Dr. James Hector, surgeon and geologist, who produced the first geological maps of the areas later to become western Saskatchewan and Alberta.

In July of the same year, 1857, the Canadian Government organized and dispatched an expedition led by Henry Youle Hind, Professor of Chemistry and Geology at Toronto's Trinity College. This expedition examined "the country between Lake Superior and the Red River of the North". The following year, Professor Hind returned to explore the area west of the Red River and south of the Saskatchewan River, as far as the elbow of the south branch of the Saskatchewan River.

In Professor Hind's detailed instructions from the Provincial Secretary, he was told:

"In relation to its geology, you will be guided by the memorandum furnished you by Sir William Logan; giving especial attention, as far as lies within your power, to the following points:

- the boundaries of formations,
- the distribution of limestone,
- the collection of fossils,
- the occurrence of economic minerals (petroleum would be included here),
- the exact position of all facts, and the attitude of the rocks."

Professor Hind's final reports, published in Toronto and London, included, not surprisingly, detailed geological maps and cross-sections, as well as rocks and fossil descriptions.

Also in 1857, a Mr. J. M. Williams bought the land and petroleum rights to the Ontario gum beds of Charles Nelson Tripp, who had founded the first oil company in North America to produce asphalt. On his newly acquired property, Williams hand-dug and cribbed a well 49 feet deep upon the advice of Geological Survey geologists, Sir William Logan and Thomas Sterry Hunt. The well was completed in 1858. It produced as much as 150 gallons of crude oil per hour by hand pump. The crude oil was refined for illuminating-oil and lubricants.

This success led to Canada's first oilfield at Petrolia, Ontario. The Drake well on Oil Creek near Titusville, Pennsylvania,

launched the first North American oil boom the following year.

The long and rewarding relationship between the petroleum industry and the GSC was born!

Executive Comment

With this first newsletter of 1993, I will not review the Society's successes in 1992. I will do that in the next issue of *Archives*. At this time, I want to focus upon the life blood of our organization - **membership renewals!**

The Petroleum History Society is the only historical society in Canada which focuses on a single industry. We believe that the oil patch's history stands on much more than a respectable record. It is a legacy built by people whose accomplishments make us proud today.

Technology developed in Canada has given the worldwide petroleum industry improved drilling procedures, sour gas production techniques, and sulphur recovery. Canadians have redefined the industry's boundaries by opening new frontiers like far-northern exploration and oil sands extraction.

Importantly, Canadians are exporting a sense of responsibility for the resources our technology has unlocked. Oil-producing nations around the globe are adopting conservation initiatives and environmental technologies which began in Alberta in the 1930s.

Your participation in the Petroleum History Society helps to preserve knowledge of our industry's past, including the story of your company and yourself. The Society is funded solely by the monies received from membership dues. So please, **renew your membership today**. As always, a membership application form is included in *Archives*. Please use the form to support our worthwhile efforts for another year.

William R. S. McLellan - President
and Membership Chairman

Welcome New Members

Institutional: Alberta Oil and Gas Limited
Poco Petroleum Ltd.
Western Gas Marketing Limited

Individual: Donald Borwich, Shayne Coward,
Art Dixon, Ernest Granson, Jim Hamilton,
John Hutchings, George Pastirik, Roberta Peach,
Aileen Pelzer, Bob Rintoul, and Stanley Sibley

Mark Your Calendar!

The Publisher

The Chinook Country Chapter of the Historical Society of Alberta is presenting a lecture of interest to petroleum history buffs.

Historian David Finch will give a talk, illustrated with slides and video, on:

Turner Valley and Hell's Half Acre

Tuesday, February 16, 7:30 p.m.
at the Calgary Tower Amphitheatre
101 - 9th Avenue S.W.

Free admission, open to the public

Archives is published periodically by
the Petroleum History Society

2100, 350 - 7th Avenue S.W.
Calgary, T2P 3N9
(Please note our new address.)

Editor: Micky Gulless (403) 290-2833

Submissions on historical topics related to Canada's petroleum industry are welcomed. For information about membership or society activities, contact society president - Bill McLellan, at (403) 286-2191.

**The Petroleum History Society gratefully
acknowledges financial support from the following
institutional members:**

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