

Theodore August Link (1897 - 1980)

by **C. B. Sikstrom**

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On 25 August 1920, Theodore August Link wrote in his field notes: "Surveying on Mackenzie River * Gusher Struck" (Link, 1920:18). He was 150 km south of the Arctic Circle and 80 km downstream of Fort Norman. As an Imperial Oil Limited geologist, he had been sent to this remote area to advise on the drilling of an oil well on the banks of the Mackenzie River, where the company had acquired leases. As a result, the most northern oilfield in North America for its time was discovered, and 200 men staked their claims on 8100 km² to 12 000 km² of land. Link was quoted in the newspapers as saying that the "biggest oil field in the world" had been opened up and that it stretched from "Fort Norman to the Arctic coast." He compared the potential of Mexico and Peru as being "miniature" in class! (*Ottawa Journal*, 1920). Such a reaction was typical of Link throughout his life, for he was a zealous proponent of oil development, with an infectious sense of humour and a zest for life that inspired others to support his beliefs.

Like many other northern explorers, Link was

a young man when he made his discovery (Alexander Mackenzie was only 26 when he made his voyage of discovery down the river that now bears his name). Born in 1897, he was the fourth son of a Lutheran pastor from Laporte, Indiana, whose family included six boys and four girls. He

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Turner Valley Interpretive Centre: An Update

Your Society's next luncheon will feature guest speakers **Ian Clarke** (Alberta Historic Sites Service) and **Jim Taylor** (Parks Canada) who will bring us up to date on the plans and activities surrounding the creation of an interpretive centre at the site of the old gas plant in Turner Valley.

Date: Thursday, December 5, 1996

Time: 12 Noon

Place: Palliser Hotel, Calgary

Cost: \$20 for members, \$22 for non-members

To ensure yourself a place, please RSVP to **Bill McLellan, 286-2191** no later than Noon, Tuesday, December 2.

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FUEL FOR THOUGHT: CONTEMPORARY PETROLEUM ISSUES IN THEIR HISTORICAL CONTEXT

A lecture series sponsored by Glenbow as part of the "Open for Discussion" Program, Winter 1997. It is co-sponsored by the Petroleum History Society.

Admission \$ 5.00. Call 268-4232 for tickets.

All lectures will be held in the Glenbow Theatre beginning at 7:30 pm.

"Oil and the Environment: Personal Perspectives" * - Dr. Robert Page, Dean, Faculty of Environmental Design, University of Calgary; Thursday, January 9, 1997

"Leduc: 50 Years After" * - Frank Dabbs, Publisher, Sandstone Publishing; Thursday, February 20, 1997

"First Nations and the Petroleum Industry" * - TBA, Thursday, March 13, 1997

"The Workforce of the Petroleum Industry" * - David Finch, Consulting historian and author; Thursday, April 10, 1997

* Tentative title.

Calgary Oil Men in Turner Valley

by Douglas E. Cass

Senior Archivist, Library & Archives, Glenbow Archives

Text of presentation delivered at Society Luncheon Meeting, October 16, 1996

I would like to speak today of first generation of petroleum entrepreneurs who began the development of Turner Valley in the years before 1930. In the years leading up to the first war it became increasingly apparent to a small group of southern Alberta businessmen that petroleum resources of some kind were to be found under various structures scattered along the foothills of the Canadian Rockies. Syndicates and small companies were formed as early as the 1880s to begin the first tentative exploration programs in search of this elusive resource. None were as important as the Lineham well at Oil City.

Lineham had limited production but key members of the Okotoks business community would later be the central figures in early Turner Valley.

In the years before the war a core of local businessmen developed in the city, based on the manufacturing, wholesaling and retail functions in Calgary and its hinterland. Members of this group were soon to be found on the boards of directors of hundreds of local firms determined to exploit the new wealth of petroleum. Most of the members of a new group of petroleum entrepreneurs also

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**THE PETROLEUM HISTORY SOCIETY AWARDS
FOR 1995**

**Recognizing Contributions Related to
Canadian Petroleum History**

To encourage the study, communication, preservation, and enjoyment of Canadian petroleum history, The Petroleum History Society established awards to recognize significant contributions in several categories:

Best Article Award

Cal B. Sikstrom for
Theodore August Link (1897 - 1980)
in Arctic, Volume 48, No. 1, pp. 96 - 98.
(Reprinted in this issue of Archives)

Best Book Award

Beverley Jones for
High Heels 'n' Oil Rigs, Caitlin Press, 196p.

Best Multi-Media Award

Sharon and Stacy Stevens for
Doodlebugs: The Video (30 Min.)

Preservation Award

The Glenbow Institute

Lifetime Achievement Award

Jack Porter

**PRESENTATION OF THE PETROLEUM HISTORY SOCIETY AWARDS
FOR 1995 WILL BE MADE AT THE NEXT SOCIETY LUNCHEON ON
THURSDAY, DECEMBER 5, 1996.**

Calgary Oil Men in Turner Valley

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emerged from this circle - only a tiny handful of the firms they founded were successful in starting an exploration program - fewer still actually succeeded in producing some form of petroleum product such as gasoline, crude oil or natural gas. Of those companies that did have some success, the vast majority in the period before 1930 were associated in one form or another with a small group of men who rose to prominence shortly before the war and who, in most cases, dedicated the remainder of their lives, whenever possible, to the search for oil.

The significant exception to local dominance of Turner Valley was the rise of Imperial Oil and its subsidiaries who, by the 1920s, had taken over much of the field. Historian Paul Voisey has demonstrated that the business elite in Calgary were predominantly "Anglo-Saxon Protestant from a town or small city in Ontario or the Maritimes...(Whose)...Formal education ended shortly after grammar school and ...(Whose)... Father's occupation was lower middle class, and so was his, prior to arriving in Calgary as a young man." In many ways this is an accurate description of the oil entrepreneurs who emerged in the city. Most of the men I will discuss were born in small town Ontario, although two were Americans. From what information is available it appears some received a very brief education, others perhaps received one or two years of high school. Only two or maybe three had any background in the petroleum industry before moving to the west. Most came to the province between 1890 and 1905 to engage in farming, or service businesses in small towns such as investment brokers, insurance and real estate, mining and lumbering, or a combination of these. Their involvement in real estate is significant, for as a number of historians have pointed out, on a growing frontier this was one of the most rapid means of accumulating capital for investment in other enterprises.

Most of the early entrepreneurs continued to devote some of their attention to their previous pursuits for the rest of their lives, often as a means of raising funds for investment in oil. Nearly all were involved

in first boom in 1914, either as company promoters and directors or as shareholders. Most continued their petroleum-related activities despite the economic downturn of WW1 and the immediate post-war period to emerge with considerable skills and assets which they devoted to the industry after the second boom in 1924. One of their most vital skills was the ability to attract capital to their enterprises. Studies of regional economies often stress the importance of local entrepreneurs in attracting investment to the region for development. Three characteristics are important: first their efforts were often directed at mobilizing funds from investors outside the formal capital markets by using their personal and business links with individuals in major Canadian, American and British cities; second, local companies seldom attempted to mobilize foreign savings from more than one country; third, even when equity control in a company was largely held outside the province, the boards of directors and managers were mostly local. To a large extent this was the experience of our group of oilmen. Most obtained their money through contacts they already had or were able to develop in other cities. Very few, if any, funds were derived from listings on stock exchanges in any of the three countries mentioned until the late 1920s - the only exceptions were the use of the small exchanges in Calgary and Vancouver. Many in the Calgary group preferred to bear the risks rather than involve large numbers of local investors - if the wells turned out to be successful they would reap a greater share of the reward.

I would now like to turn to a short discussion of the careers of eight of the most prominent members of the local oil fraternity. This can only be done in a tentative way as, to my knowledge, none of these men has left autobiographical accounts, extensive papers or company records for the period under review.

Unfortunately they lived too early to be interviewed by Aubrey Kerr. My account draws on sketchy references in newspaper and periodical accounts as well as from a smattering of government and published sources. Nevertheless, I think it is possible to draw in broad outline the careers of these men and to suggest why they were important and

what they had in common.

The first and perhaps, best known of these men was Archibald Wayne Dingman. Dingman was born on a farm in Prince Edward county, Ontario in 1850. At some point in his early life he worked in the Pennsylvania oilfields but later moved to a business career in Toronto. He apparently first became interested in searching for oil in Alberta as early as 1890 when he persuaded a group of prominent businessmen in Toronto to drill near the Athabasca river - ultimately a lease could not be obtained. After the turn of the century he moved west and drilled for gas in Edmonton and after the organization of the Calgary gas company, near this city. Dingman was attracted to Turner Valley by William Herron, about whom we will hear more in a minute, and the two were involved in the establishment of Calgary Petroleum Products in 1912, backed by many of the prominent manufacturers, wholesalers and professionals of the city. A well was spudded in 1913 and its completion in 1914 began the well-known boom of 1914. A second well was also started in 1914. Dingman became managing-director of the company while Herron, whose relations with his former associates had soured, moved on to other companies - he still retained his interests in this pioneer firm. Due to lack of drilling success and the war by the end of 1915 the financial situation of the company was strained and Dingman turned to the CPR for salvation. An extraction plant built in 1917-1918 helped keep the company alive but it was not until 1920 that the sale of the company to Imperial oil resulted in the much healthier Royalite Oil Company.

In 1923 Dingman became so dissatisfied with the progress of the field that he formed a new company, Highwood Petroleum and natural gas to wildcat a new structure west of High River, as well as to develop a concession on the Sarcee reserve. As usual lack of funds proved a stumbling block and Dingman spent a greater part of the years from 1923 to 1926 travelling to central Canada in an effort to attract investors. Remember that at this point he was in his mid-seventies and still pushing to develop the field. Gradually wells were started, often in partnership with Imperial, and Dingman

remained president of Highwood-Sarcee Oil until his death in 1936.

Dingman's early associate William Stewart Herron was born in 1870 in Haliburton county, Ontario. He entered the contracting and timber business in northern Ontario, coming west in 1901 to a farm near Okotoks. He undertook numerous projects in conjunction with local businessmen Josiah Pugh, William Livingston and John Lineham who drew him into the world of petroleum. He moved to Calgary in 1911 and was involved in the previously discussed Calgary Petroleum Products Company. Herron also helped create the Herron-Elder Oil Company in 1913 in partnership with Pennsylvania-born William Elder. This firm quickly dissolved into the Alberta Petroleum Consolidated Oil Company which struggled through the war, as did Herron, who desperately tried to hang onto his leases. He never hesitated to point out that he was the pioneer of the field and was largely responsible for its development - described in considerable detail in David Breen's book on Herron. Herron was heartened by the creation of Royalite and became a major shareholder - he was a director of that company to his death. He was also a major shareholder in McLeod Oil, which I will mention in a moment.

Still looking for new opportunities for his large leasehold, Herron established Okalta Oils in 1926 to which he attracted a few major Ontario investors. The success of Okalta #4 and home #1 finally helped attract some interest from the financiers of the east. At his death in 1939 Herron had propelled his various interests into the front ranks of the independent companies.

Another local entrepreneur who was active in the 1920s was Frank Moodie. He was born at Chesterville Ontario in 1878 and early in his life showed an interest in a wide variety of pursuits; so much so that his father remarked that he would never be a success at anything - when Moodie asked why his father replied "because you're too interested in everything". He initially came to Calgary as a watch-maker but soon developed a passion for prospecting -he was ultimately able to persuade

Mackenzie and Mann of the Canadian Northern Railway to back his development of the Rosedale coal mine at Drumheller.

When legal problems prompted him to leave Rosedale in the early 1920s Moodie formed the James F. Moodie Company and Anglo-Indian Oils to buy oil leases. While the Moodie company and Anglo-Indian became pioneers of the border country near Coutts Moodie also enlisted the backing of Patrick Burns in the Sentinel Oil Company that drilled in Turner Valley. His companies struggled through the depression, however, it was a measure of his continuing faith in the field that after lying in the hospital for 8 months following a serious car accident in 1939 he asked his driver to stop by his brokers on the way home in order to check on his investments. Moodie died in 1943 without having drilled a successful well.

American, Oscar Grant Devenish was also an important figure in the border fields as well as Turner Valley. He was born in Indiana in 1867 and came to Calgary in 1902 from Spokane to open a brokerage, insurance and real estate business. Most of you will know his name from the apartment complex he built on 17th Avenue and 8th Street SW. In 1912 and 1913 he became the driving force behind a series of syndicates that took out leases in southern Alberta that eventually amalgamate to form United Oils of Alberta Ltd, destined to be one of the most active firms in southern Alberta before the depression. Devenish did go to the public markets for financing and soon drilled in Turner Valley and near Foremost - he also contracted to drill other wells in the Foremost field on behalf of other firms. United Oils became dormant by 1916 and Devenish moved to the Texas oilfields where he was active for a number of years in a company called Devenish, Thomas and Ludlow. He returned to Calgary in the 1920s and United drilled a successful well in the border fields of southern Alberta. In 1926 Devenish formed a new company named after himself and assembled a large acreage in southeastern Alberta which proved to be unproductive. However, further United drilling in Turner Valley was successful and the company survived to be taken over by Home Oil in 1965. Devenish lived until 1951 but unlike his

contemporaries he was not involved in petroleum development in his later years.

Another figure with strong links to many of the others was William Edward McLeod. McLeod was born in Cornwall, Ontario in 1858 and came to Alberta about 1889 to farm at Okotoks. Near the turn of the century he entered the real estate and insurance business in Okotoks, moving the firm to Calgary in 1907. At the time of the first oil boom in 1914 he, along with William Livingston and Josiah Pugh organized the Southern Alberta Oil Company and its affiliates to drill in Turner Valley. McLeod was not too active in the management of this firm but he did attract significant capital in Chicago to allow the establishment of the Canada Southern Oil and Refining Company in 1917. The company survived the war years due to its small refinery and in 1922 McLeod and his brothers organized the McLeod Oil Company with substantial backing from Nova Scotia investors. Land was acquired from their associate, Herron, and by the end of the 20s the company had become successful. When he died in 1935 McLeod was still actively involved in his company.

A Calgary entrepreneur who attracted considerable American capital to the city was A. Owen Jennings. Little is available on Jennings early life but he came to Calgary before the war to engage in real estate. In the first boom he was involved in the promotion of Standard Oilfields of Alberta Ltd. In addition to the opportunity to drill for oil Jennings offered a unique feature with his shares - investors would also get lots in the undeveloped subdivision of Lake View Heights as a bonus - however the company never drilled a well. Jennings was bitten by the oil bug and in 1917, in the depths of the war-induced lull in exploration, he helped organize the Illinois-Alberta Oil and Refining Company. Most of the shareholders were from Illinois and Missouri and put up enough capital among themselves to finance drilling. The company had horrendous difficulties in completing the well and in 1923 also took on the task of building a refinery. Many of the costs of both were incurred by Jennings himself but he ultimately had the satisfaction of producing wells

and a successful refinery. Jennings appears to have left Calgary and the petroleum industry in the 1930s

One of the earliest firms promoted, as we have seen, was the Southern Alberta Company, developed by William McLeod, Josiah Pugh and William Livingston. Livingston was born in Peterborough, Ontario in 1880 and he came west in 1895. By 1901 he was involved in ranching near Okotoks with Pugh and together they developed many enterprises, including Southern Alberta and its sister companies. The first well was spudded in 1913 and began producing two years later. Livingston was also behind the southern Alberta refinery, the output of which was sold to local farmers. These firms had the distinction of being the first Turner Valley company to declare a dividend in July, 1918 followed by another the next year. In July, 1921 all of the Southern Alberta group of companies merged into the Southern Alberta Oils Ltd but the firms financial status remained precarious and its affairs were directed by its Chicago investors for some time. In 1925 an investigation of the tangled dealings of the company resulted in the arrest of Livingston for embezzlement and the purchase of the company assets by Imperial as the foundation for the Dalhousie firm. Livingston was exonerated and continued to invest in Turner Valley until his death in 1934.

The final sketch is of Jack Dallas. Only two Calgary-based firms in this period were successful in attracting significant amounts of British capital to the Alberta oilfields. They were British-Dominion and the Dallas and Calmont Companies, the latter two directed by Dallas. Again, little is known of his early life except that he had experience in the oilfields of California, Texas and Mexico before coming to Calgary where he apparently had been born. Spurred on by the success of Royalite #4 Dallas organized both the Dallas and Calmont firms in 1925 and 1926. Financing was arranged through the Quaker Finance Corporation which was composed largely of Dallas' friends and associates. Quaker tried to sell shares in the US but were unsuccessful and Dallas tried in Winnipeg. Finally he travelled to the UK in 1927 and 1928 and found

enough funds to complete the company's well. Dallas became closely involved with former Alberta premier, Herbert Greenfield, who was Alberta's representative in London. Greenfield would soon move to Calgary to direct the affairs of the Calmont group and Dallas eventually moved to BC where he died in 1967.

Each of these stories has its own unique features but together they sketch out a rough portrait of the successful entrepreneurs of the teens and twenties. These men were on the scene early enough to take advantage of their knowledge of the region and its business community. Each had some sort of financial base that would generate funds to put into oil exploration, or that could be depended upon during quiet periods. Most were ardent amateur geologists and often helped discover many of the structures they eventually drilled. While focusing on Turner Valley as their major area of activity these oilmen were often interested in wildcatting new structures if money could be found to do so. Certainly their activities resulted in successful wells. By the end of 1929 of the approximately three dozen producing wells in Turner Valley about two thirds were drilled by Imperial Oil and its subsidiaries or Home Oil of Vancouver. Most of the remainder were drilled by these men and their associates. Much of the outside capital had been drawn to the area by the efforts of these few men or the notoriety their efforts had brought to the field. There is considerable evidence to suggest that the success of the Calgary independents in the late 1920s was responsible for an inflow of investment capital from outside the city. One newspaper the Financial News of Vancouver, suggested that the "significance of Turner Valley's wealth was not publicly appreciated while Imperial Oil was the only big producer there When independent companies began to show results and the potentialities became fairly well indicated, the field for speculative employment of funds became apparent". The Calgary oilmen all shared an undying faith in the future of the field - something they ironically jeopardized by their flaring of the excess natural gas in order to retrieve other products) and to gamble their total assets on success. They were often willing to forego

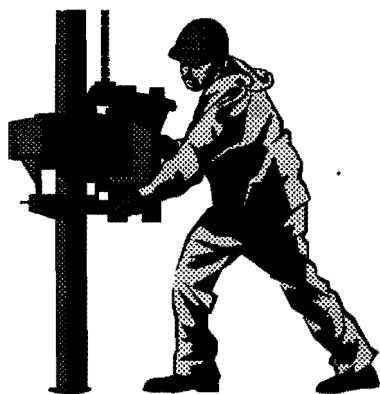
dividends for years, if not decades, until production was reached and they rarely, if ever, sold their shares to reap immediate profits. There was a considerable degree of cross-ownership and mutual assistance among these men and most willingly served on each others boards of directors throughout the twenties. Through this mechanism and others the firms were able to tap the outside private investors that were so crucial to the continuance of so many enterprises. Investors in Canadian, American and British metropolitan areas were sometimes willing to put funds into the field but it often depended on the entrepreneur to facilitate this process. Most of this first generation of Calgary-based petroleum entrepreneurs died in the 1930s and early 1940s, secure in the knowledge that Turner Valley had been proven as a producing oilfield.

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Theodore August Link (1897 - 1980) {Continued from Page 1}

studied geology at the University of Chicago and received his Bachelor of Science degree in 1918. It was there that he became friends with Bert R. McKay, a Canadian, who introduced the hunt for minerals in Canada. Link spent the summer of 1918 working on a Canadian government survey of gold deposits in Quebec and British Columbia. That fall he returned to Chicago and then travelled to Oklahoma for a job. One night in Cisco, Texas, Link read an Imperial Oil advertisement for a geologist position in South America. He responded but failed to get the job. When Imperial inquired about his interest in working in the subarctic regions of northwestern Canada, he accepted, and the Norman Wells oilfield was discovered.

Imperial Oil had acquired three claims in the area in 1918 through its subsidiary Northwest Company. In 1919, Imperial decided to send a drilling rig and an eight-man drilling crew to Oil Creek to test those claims. The crew left Edmonton in July 1919 but did not arrive until September. It was too late to begin drilling the well, so the crew wintered in log cabins that they built on an island in the river. The next spring, on 14 April 1920, they commenced drilling.

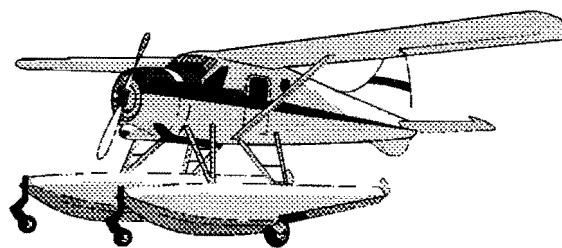
Link and an assistant were also sent to the area in 1919 to continue surveying claims, to further investigate the geology of the area, and to oversee the drilling of the well. Link chose the location of the prospect well on flat ground, safe from ice-jams, close to a water supply for drilling, near a good landing place for the supply ships, and in the centre of the oil seepage area. Link and his assistant returned south in the fall of 1919, but the next spring Link returned with a relief crew and arrived at the well site on 8 July. The well was already 95 m deep when the new crew took over drilling. On the day of the "gusher," a fountain of oil reportedly spouted 21 m above the derrick floor for 40 minutes before the well was capped. The next day Link was surveying another tributary stream of the Mackenzie River. Thirty years later, when a reporter asked him the secret of discovering oil, Link replied with a twinkle in his eye: "geological intuition, divine guidance and intestinal fortitude" (Wilcock,

1953:34).

Link worked in the North for a couple more seasons, until an assignment with the Tropical Oil Company (a subsidiary of Imperial Oil) took him to the jungles of Colombia. There he gained a reputation as a field geologist and scholar who advanced theories and wrote widely in the journals of the day. But in 1926, Link's academic interests and a bout of malaria caused him to return to the University of Chicago to pursue a doctorate specializing in structural geology. He returned to Imperial Oil in 1927 and remained with the company until 1948, when he left to pursue private consulting interests. He served as the chief geologist of the CANOL Project (1942 and 1944) and assistant and chief geologist of Imperial Oil from 1944 to 1948, when the famous Leduc oil discovery was made. Leduc turned out to be a massive oilfield, which ushered in the great new oil age of Alberta and made Canada a major oil-producing nation.

During World War II, the United States and Canadian governments signed the CANOL Agreement to develop the Norman Wells oilfield to provide a source of oil products along the route of the Alaska Highway. A supplemental agreement with Imperial Oil Limited called for a geological and geophysical exploration programme to expand Norman Wells oil production from 500 m³ to 3200 m³ per day. Imperial Oil Limited was asked to release its chief geologist, and Link was assigned to the American Corps of Engineers to organize and direct the exploration program in an area nearly twice the size of Alaska. From 1942 to 1944, he led 13 crews of geologists in the exploration and mapping within a 2 600 000 km² territory reserved by the Government of Canada for Imperial Oil exploration. The available area extended from the 60th parallel north to the Arctic Ocean, and from Great Bear Lake westward to the headwaters of the Mackenzie River tributaries.

Link concentrated his search on areas up and down the Mackenzie Valley and in all the major tributary valleys from the Liard River north to the Mackenzie Delta. He described the work as "unique in its remoteness, magnitude, method of operation, and absence of serious disaster" (Link, 1944a:1). Travel



methods included hiking, snowshoes, dog team, canoe, motor boat, tractor and trailer, air planes and combinations of these. The geological crews carried out 42 assignments and produced 43 detailed reports. A geophysical seismic program covered 570 km², and air planes flew 308 hours in transporting parties, reconnaissance, and air mapping.

As a result of these explorations Imperial eventually drilled 17 wildcat wells, but failed to find another oilfield. Link, an incorrigible optimist, lamented the results in an April 1944 closeout report: "It is most unfortunate that the exploration programme was halted so abruptly at a time when definite results appeared imminent" (Link, 1944a:15). Just prior to leaving the CANOL Project, he sent a covering letter with a special Reserve Report for the Norman Wells oilfield to Imperial Oil management. He wrote, "This is my first (and I hope my last) signed statement regarding said subject." He went on to say that "it is up to you fellows now to drill and produce the Pool in such a manner that you can make a first-class liar out of me." Regarding other estimates of Norman Wells oilfield reserves, he said, "I really don't care." His personal reaction was that original predictions "(that we will produce reams and reams of paper and no oil) may still prove to be the best estimate on reserves." He signed his letter "Dr. T. A. Link -- Retiring (and very tired) Chief Geologist" (Link, 1944b:15). Fortunately he did not retire for another 26 years.

He returned to Imperial Oil as the company's Chief Geologist and organized the drilling program that led to the Leduc-Woodbend, Redwater and Golden Spike oil discoveries in Alberta. Then, on the crest of the ensuing oil boom, he left Imperial to become a

consulting geologist. The company Link & Nauss Ltd. was established in 1950, and by 1956 he was president of Link, Downing & Cooke Ltd. of Calgary and Toronto.

Although the discovery and development of the Norman Wells oilfield were the major highlights of his work in the Arctic, Link made two other major contributions: the first commercial use of air planes in the North and the use of aerial photography in geological surveying. The first air plane flight ever to reach Fort Norman left Peace River on 29 May 1921 and crash-landed at Fort Norman on 2 June after 12.5 hours of flying time. Link was on the plane and reportedly carried \$35 000 to buy claims along the river. The same journey one year earlier had taken him 55 days. During the CANOL Project, he was the catalyst for a program to take aerial photographs of the Mackenzie Basin for geological interpretation. Thousands of photographs were examined and significant contributions were made to the overall geological program, thus laying the groundwork for future use of aerial photographs by other geologists.

Link's major contributions to geology included the use of cross-section models in geological work as well as numerous theories that are still relevant today. He wrote at least 72 technical papers in peer-refereed journals, and Imperial Oil's current library records show him as author of 160 company reports. His theories spawned a whole generation of coral reef conscious geologists, and his achievements were well recognized by numerous associations. He was a distinguished lecturer and served as the president of the American Association of Petroleum Geologists from 1956 to 1957. He spearheaded the first symposium on arctic geology, held in Calgary 11-13 January 1960 under sponsorship of the Alberta Society of Petroleum Geologists. In 1949 he received the Barlow Memorial Medal from the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) for the outstanding paper on geology published in that year. In 1960 he received the Blaylock Medal from the same organization for his distinguished service to the petroleum industry. He retired in Victoria in 1971. In 1974 he received the first CIM John Campbell Sproule Plaque for his visionary zeal,

professional dedication, and distinguished contributions to the exploration and development of Canada's arctic resource potential. An honorary doctorate was awarded to him by the University of Calgary in 1977. He died 25 June 1980, just as the Norman Wells Oilfield Expansion Project was receiving approval to expand production to 4000 m³ per day.

ACKNOWLEDGEMENTS

I am very grateful to Gerhard Maier, Sarah Lawley, and Linda Scott of Imperial Oil Limited for their help in obtaining information on Dr. Link. I also thank Tim J. Hawkings for rescuing Dr. Link's original 1919 to 1921 field notes, and David Finch for his encouragement and support during my information search.

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