



**PETROLEUM
HISTORY
SOCIETY**

ARCHIVES

Newsletter of the Petroleum History Society

October 2006; Volume XVII, Number 5

P.H.S. Lunch and Learn Meeting – Tuesday, October 24, 2006

**Speaker: Imre Varga, Petroleum Engineer, on:
Hungary's Loss, Canada's Gain**

On October 23, 2006, the Hungarian people commemorate the 50th Anniversary of the breaking out of their spontaneous uprising in Budapest. After three weeks of lopsided fighting, the Uprising was put down by the occupying Soviet superpower while the world only watched on. Hungary lost 25,000 lives and over 200,000 people, mainly young and well educated, fled the country. 35,000 of them came to Canada and about 200 found employment in the oil industry. Within ten to fifteen years, a good portion of these 200 achieved high positions in either industrial or academic fields. After reviewing the events of the time, Imre will outline the achievements and contributions made by his compatriots.

Imre Varga was born in Hungary in 1930. He graduated from the University of Sopron in 1954 with his B.Sc. in Petroleum Engineering and then worked in the Head Office of the Mineshaft Construction Company in Budapest. As a young engineer he participated in the Uprising and was elected to be Chairman of the Revolutionary Labor Council in his workplace. After the Uprising was put down, he escaped to Austria and then immigrated to Canada, living first in Toronto and then in Calgary. He initially worked as a roughneck for Pennant Drilling and was then hired by McColl Frontenac, which became Texaco Canada Limited. After 30 years with Texaco in a range of engineering and managerial positions, Imre worked for the E.U.B. for five years overseeing their Drilling Department. Since 1994 he has remained active as a Petroleum Consultant.

TIME: 12 noon, Tuesday, October 24, 2006.

PLACE: Fairmont Palliser Hotel (133 - 9th Avenue S.W.) – Canadian Pacific Room (Penthouse level) (check marquee)

COST: Members \$25.00 and Guests \$30.00 (most welcome) (cash or cheque only)

**R.S.V.P. if you wish to attend to: Clint Tippett, 691-4274 or
clinton.tippett@shell.com by noon Monday, October 23**

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THE PETROLEUM HISTORY SOCIETY
THE BULL WHEEL



Next Board Meeting: The Board will meet next at noon on November 9 at the Glenbow Museum and Archives – meet in the Lobby just before noon.

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.

"The Rig": As alluded to in our last issue, the 13 part Outdoor Living Network (OLN) series "The Rig" will premiere on Thursday, October 19 at 9:30 p.m. E.T. or 10:30 p.m. P.T. Please check your local listings for exact and up-to-date scheduling information. Thanks Micky.

A new John Ballem novel: Previous P.H.S. Annual General Meeting speaker, Calgary lawyer and well-known novelist John Ballem has released his latest book. As related to us by Past President Micky Gullest:

A quote from the announcement for his Sept.7 book signing:

"Oil and blood don't mix, but don't tell that to mystery author JOHN BALLEM.

*John will be signing copies of his new novel, **A Victim of Convenience***

(DUNDURN), a book that posits that oil and blood go together just fine,

thank you." <http://www.mcnallyrobinson.com/product.php?txtCatID=0&txtProdID=335409>

Canadian Petroleum Hall of Fame – 2006 Inductees: As announced on the Hall’s website, the following people were inducted at their ceremony in late September:

Robert Boscher – has spent more than five decades in the oilwell servicing industry. The Drayton Valley resident, who is still active in the industry, began his career as a roughneck.

Dr. Roger Butler – is recognized as the “father of invention” for the Steam Assisted Gravity Drainage (SAGD) technology that has helped make oilsands too deep to mine commercially viable. Dr. Butler passed away in 2005.

Robert Campbell – has enjoyed a distinguished career as a chief executive with important oil companies, including PanCanadian Petroleum and its parent Canadian Pacific.

Frederick Drury – helped launch the Hall of Fame ten years ago and has played a significant role in the service industry. He continues to head his own firm Flexxairre.

Edward Lakusta – fulfilled key executive roles in major oil companies, including a 30-year career with Gulf and nearly a decade as President and Chief Operating Officer of PetroCanada.

Glenn Nielson – from a start as a salesman for a small refinery in northern Montana, Mr. Neilson began his own firm during the Great Depression. For the next 40 years, he ran Husky Oil as Chairman and President. He sold it in 1979 and passed away in 1998.

Bill Siebens – is an oil and gas executive of standing – with significant international experience. He is currently Chairman of Freehold Royalty Trust and a Director of the Fraser Institute.

Mervin Stewart – enjoys high recognition within the service and supply sector. His lengthy career started with the launch of Eskimo Fracturing and Well Services.

Shell Handbook: As was mentioned by Lifetime Member Gerry Maier at our Spring AGM, the Royal Dutch Shell Group of Companies used to produce a handbook describing the entire oil and gas industry – upstream and downstream – that found widespread use amongst professionals. The following series has been released to date:

- First Edition (1933, est.) – no details available.
- Second Edition (1938) – 473 pages, small format.
- Third Edition (1948) – 658 pages, small format.
- Fourth Edition (1959) – 678 pages small format.
- Fifth Edition (1966) – 318 pages, large format.
- Sixth Edition (1983) – 710 pages, medium format.

There has been no indication of an updated Seventh Edition – maybe a digital one will emerge?

Frank Dabbs Article: Director Frank Dabbs has published an article entitled “Ralph Klein’s Real Legacy” in the September 2006 issue of “Alberta Views”. It contains an insightful overview of the evolution of Alberta democracy in the context of the series of Premiers that have led the Province. We were gratified to see that Frank’s “contributor” profile made mention of both his 2001 P.H.S. Book of the Year Award for “Branded by the Wind: The Life and Times of Bill Herron” and of his 2003 P.H.S. Lifetime Achievement Award.

Report from Turner Valley: P.H.S. Member and prominent local historical author David Finch has been attending the hearings at Turner Valley concerning the fate of the Gas Plant and sent this report on Sept. 21:

“As you commented in the last “Archives” that “apparently” no one was affected by the H₂S from those towers from 1925 to 1952, we need to chat more about that sort of conclusion. Indeed, all members of the TV Panel were nodding in agreement yesterday as it became obvious that some of the pollution on the Gas Plant site is still migrating into it from adjacent sites. ConocoPhillips and Talisman are just beginning to get an understanding of the full extent of their exposure in the TV area and Alberta Environment is now coming to understand that the problems on the Gas Plant site are just the tip of the iceberg in that area – wellsites, sump pits, pipelines and many other features are still unaccounted for and are being encountered as the town of TV expands and allows for redevelopment. I will be surprised if the conclusions of the TV panel do not actually open up many more cans of worms ... The real consequences of the people downwind of the Gas Plant breathing diluted H₂S will never be known. But not because there were no effects. People who could not stand the smell moved away, lived with the effects on their lungs or just put up with it so as to have jobs. And most people living there before 1953 are gone anyhow.

I believe more than ever that the TV Gas Plant is a unique opportunity to review the practices of the past and the lessons that have been learned as well as a good place to explain the current state of the industry and its challenges in the future.”

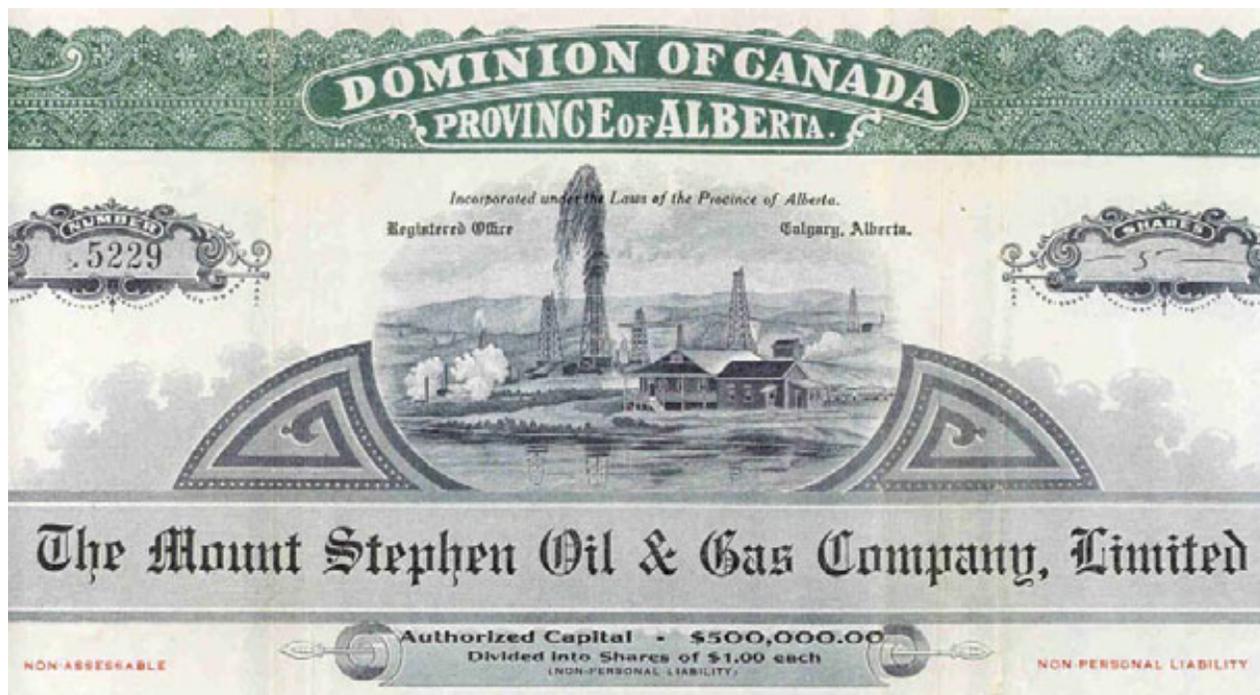
Thanks to David for his report and analysis.



Turner Valley Panel members view the Gas Plant site from the south side of the Sheep River (Photo courtesy of David Finch).

Heritage Park Update: As reported in the September 21 issue of the Calgary Herald, Heritage Park is launching a new \$50 million “It’s About Time” fundraising campaign that aims at revitalizing and updating the facility. As described by author Jamie Komarnicki “Plans include a re-creation of a 1930’s streetscape with detailed replicas of historical landmarks. The project’s darling, a Gasoline Alley building, will feature 20th century developments in the oil and gas industry and will showcase a world-class \$5 million collection of vintage automobiles. “This has been his passion for years and years,” said Shon Carey of his father Ron’s collection during Wednesday’s ceremony. “To have it in one place that people can see 365 days a year, to be part of what I think is the best historical village anywhere, it’s a big part of his legacy.” Members of the Society should note that Ron was the winner of our Preservation Award in 1999. Heritage Park itself was awarded our Multimedia Award in 1998.

The overall proposal is for three all-weather exhibits – Gasoline Alley, the Heritage Business Block and a historically accurate reconstruction of the Calgary Canadian Pacific Railway station as it was in 1914. An impressive new walkway will lead visitors, who currently number about 400,000 per year, to the Heritage Market Square historical streetscape. Komarnicki notes that the Park was originally constructed in 1964 at a time when the themed 1864-1914 timeframe was more relevant to audiences. Alida Visbach, Heritage Park’s General Manger, is quoted as saying that “Nowadays, 1914 is really ancient history” and that “to be able to understand the full story of the settlement of Western Canada, we have to bring that time period more closely to what it is today, especially when you’re dealing with gas and oil.” The fundraising is off to a good start with \$12 million pledged by the Province, \$10 million from the City, \$3 million from the Federal Government and \$13 million from a mix of corporate and private donations.



Stock Certificate from the Mount Stephen Oil and Gas Company.

This was amongst the many fanciful stocks that were promoted to the public in the early days of Turner Valley – but unlike most, this company actually did manage to drill several (unsuccessful) wells in the field.

Gushers, blowouts and flarepits were the order of the day.

WILLIAM (BILL) CARRUTHERS GUSSOW (1908-2005): A TRIBUTE

William Carruthers Gussow, geologist and engineer, was born on April 25, 1908 in London, England. At the age of one, he moved with his family to Ottawa, Ontario, Canada where his father, (Dr.) H.T. Güssow, took up office as the Dominion Botanist of Canada. Bill attended public school in Ottawa and after graduating from high school, joined the Geological Survey of Canada in 1926 as a map draftsman. There he was surrounded by many of the prominent geologists of the day including Dr. George Hume and Dr. Henry Gunning as well as biologist Dr. John Macoun. The atmosphere of learning enveloped him and he grew to love geology.

At the Survey, one of his tasks was to use some of the earliest aerial photographs taken in Canada to construct a base map for the region around Sudbury, Ontario upon which his supervisor, Dr. Collins (Director of the Survey), produced the first geological map using this technology. (Bill even flew in one of the airplanes.) During his time at the Survey, Bill worked in the field in many parts of Canada, including the Arctic. His focus during this period was on Precambrian geology and mineral deposits.

In 1929 he decided to return to school and enrolled at Queen's University in Kingston, Ontario. By 1933 he had earned his B.Sc. (Mining Engineering) and followed up with his M.Sc. (Geology) in 1935, also from Queen's. It was at that time that he met Margaret, his wife to be, when she took a geological course as part of her B.A. degree. They were married in September 1936 in Ottawa. Not yet satisfied with his level of education and being awarded a Royal Society of Canada Research Fellowship in 1935, he then enrolled at Massachusetts Institute of Technology where he was awarded his Ph.D. in 1938. Throughout this educational period, Bill continued to work for the Survey over the summers and during holidays when he returned to Ottawa. As he remembered it, as his graduation from M.I.T. occurred during the Depression and funds were tight, he chose to save the \$50.00 that he would have had to pay to be sent his degree in absentia. Rather he chose to wait a year until he was in Boston on other affairs to drop into the university to pick up his diploma. In a way foreshadowing controversial positions to come, Bill's doctoral thesis was on the theory of "granitization" in which he proposed some new concepts that prevented his work from being published because, as he put it "*people didn't believe it*".

Following his graduation, Bill returned to Kingston where he taught at Queen's and Royal Military College. It was planned to make R.M.C. a degree-granting university and he was to set up the geological department. With the outbreak of war in the fall of 1939, those plans were put on hold for another twenty years. During the war years Bill's engineering expertise came to the fore. As an office engineer with the Foundation Company, Bill was one of those engineers "*who jointly shared the honour of having planned and executed the largest [at that time] power project in Canada's history*", the Shipshaw Power Development project. This was to produce electricity for the aluminum smelter that was nearby. With the completion of the power project Bill became the resident engineer at Arvida Works and at the end of the war Alcan offered him a position to head up their operations in British Guiana. Bill, however, decided to decline the offer.

In 1945 it was time for a change into the "soft rock" side of the business. Shell Oil was recruiting and had gained permission from the wartime Bureau of Technical Personnel to approach Bill about employment with them. Bill became the Chief Geologist and Exploration Manager for Shell

Oil in Eastern Canada. He hired a number of Canadian geologists and geophysicists from different parts of Canada to supplement several transfers from Western Canada. Later geologists joined in from Shell's Dutch offices. Much of the work that followed was of a reconnaissance nature involving fieldwork in most sedimentary areas of the eastern part of the nation including southern Ontario, the Hudson Bay Lowlands, Nova Scotia and Newfoundland. Of all these, New Brunswick appeared to have the most promise, partly due to its proximity to markets, although there was a lingering concern over the apparent absence of suitable reservoir rocks. A series of domes involving evaporites appeared to have some similarities to the prolific salt domes of the Gulf Coast. After much deliberation and following Shell's withdrawal from Western Canada in late 1946 due to disappointing well results, the decision was made to begin a drilling campaign in New Brunswick. Five wells were drilled but despite the presence of numerous hydrocarbon shows, the lack of reservoir was indeed their undoing and the venture was abandoned.

One lasting consequence of the reconnaissance and fieldwork done was Bill's publication on the geology of New Brunswick. Many years later, in 1986, he received the Dr. W.J. Wright Award for pioneering geological mapping in New Brunswick by the Canadian Institute of Mining and Metallurgy. Throughout this period in the late 1940's Bill continued to do reconnaissance and field work travelling farther afield. One trip with Peter Hacquebard, one of the geologists who had come over from Holland, took them to the Northwest Territories and northern Alberta where they examined the Tar Sands. They even travelled by canoe to visit some of the sites. Peter reminisced in his December 2004 Christmas card about Bill's prescient remarks concerning the tar sands and how important these oil accumulations would be.

At this same time, the discovery of the Leduc Field in 1947 and numerous follow-ups in Western Canada had rekindled Shell Oil's interest in that region once again. Shell began investing significant amounts of capital in the Western Basin. As this was happening, Bill had been redeployed to Houston from where he worked on projects in Texas, California and Oklahoma while always keeping an eye on Canadian developments. During 1950 and early 1951 he worked for Shell out of their Midland, Texas office. In 1951 he was transferred to Calgary where, as he said, *"The excitement was just unbelievable and people hardly took time off to go to bed"*. Working as a Staff Geologist at Shell, Bill sensed other opportunities and in 1952 resigned to start his own consulting business. There he prospered over the years 1952-1956 having many clients.

It was during this consultancy that Bill revealed his interpretation of the processes that were governing the distribution of oil and natural gas in the major reservoirs of the Leduc-Rimbey trend. The first to admit that it was a very simple but elegant explanation, Bill described a series of tilted, en echelon, inverted "cups" (in this case, reefs) being first filled from the west and progressively spilling into each other in an up-dip fashion. As gas followed oil with increasing source area maturity, so did it progressively flush the oil ahead of it into progressively shallower, more northeasterly traps. As expressed by Bert Bally in his American Association of Petroleum Geologists tribute to Bill: *"With its emphasis on fluid flow, regional migration paths for hydrocarbons and the displacement of oil by gas on a regional scale, his paper showed the way for petroleum system studies as we know them today."* On this basis he gained quite a good reputation for his ability to predict the results of new drilling. The model was published in 1954 as "Differential Entrapment of Oil and Gas: a Fundamental Principle" in the A.A.P.G. Bulletin and it was the subject of what he described as his shortest Alberta Society of Petroleum Geologists luncheon talk ever - being only 5 minutes in length. This concept has subsequently been applied globally and has been used in many basins where long distance migration is possible. He was prompted to undertake visiting lecturer tours to expound upon his groundbreaking ideas during the 1950's. Bill remembered this as being a very dynamic time in the oil patch with many new

technical papers being published on a wide range of topics and of much related discussion within the geological community. Besides various papers on hydrocarbon migration, Bill's prolific contributions over the 1953-1956 period through the A.A.P.G. and A.S.P.G. included articles and discussions concerning the Carboniferous of New Brunswick, the Silurian of the Hudson Bay Lowlands, the piercement domes of the High Arctic, a tilted oil-water contact at Joarcam and the origin of the Fort McMurray Oil Sands.

In 1956, Bill accepted an offer from Union Oil Company of California in Calgary. It was during this period that he was most active in the A.S.P.G. for whom he served as President in 1959. In his nomination for the position of President in 1958 his citation read: *"Bill Gussow: Ph.D., Massachusetts Institute of Technology. Staff Geologist for Union Oil Company of California. Bill has been chairman of several committees of the A.S.P.G. including Program, Research and Regional Cross Section. He has assisted the Executive in organizing corporate memberships and in organizing the Honourary Lecturer series. He has been a distinguished lecturer for the A.A.P.G. in 1955. Bill is a member and fellow of many [scientific,] engineering and geological associations including the Royal Society of Canada, the Geological Association of Canada, G.S.A., A.A.P.G., C.I.M., E.I.C. and of the Professional Engineers of Alberta and has been the author of several internationally known papers on geology."* He served with Secretary R.J. Kirker, Treasurer R.B. McCrossan and Past-President R.H. Erickson.

One of his most lasting technical accomplishments also unfolded during this time when he edited the joint project of the A.S.P.G. and the G.A.C. entitled "Regional Geological Cross Sections of the Western Canada Sedimentary Cover" that comprised four large scale sections plus subsidiary diagrams in a bedsheet format. This beautifully crafted set of sections captured the stratigraphic nomenclature, lithological nature and structural geometry of the units in the basin while at the same time depicting the positions of key control wells and the habitat and distribution of the hydrocarbon pools that had been discovered to that date. It was a landmark publication whose lasting value is attested to by the fact that the sections were adapted for index purposes by the Geological Survey of Canada for their Oil and Gas Fields of Western Canada maps many years later. It was only superseded in more recent years by the C.S.P.G. - Alberta Geological Survey Western Basin Atlas. He was also a founding member of the G.A.C. in 1947, served as a Councillor from 1958 to 1960, and in 1997 received his 50th Year Member Award.

In part because of his early training in both Geology and Engineering, Bill was an early member of and proponent for the registration of both geologists and engineers in Alberta. In 1952 he became a P.Eng. in the Association of Professional Engineers of Alberta and, once geologists were welcomed to the Association in 1960, became a dual member with his P.Geol.. He was a member for over fifty years and served in several volunteer positions with the A.P.E.A. and successor Association of Professional Engineers, Geologists and Geophysicists of Alberta. In recognition for his long service, Bill was made a Life Member.

In 1960 Bill moved to California to work with Union's research group. He retired from Union Oil in 1971 after a diverse career of some forty-five years. In the following years, Bill and Margaret travelled the globe and even spent a little more than two years in Japan where he was a consultant to the Japan Petroleum Development Corporation. He never, however, lost sight of the dynamic world of geological thought and he certainly never backed down from a situation in which he thought that some controversy would get people's creative imaginations going to re-examine old beliefs.

One of his more memorable beliefs was the concept that the Ice River Complex of the Western Main Ranges of the Canadian Rocky Mountains is actually an exposure of Precambrian Basement rock partly overlapped by and partly thrust into the surrounding Cambrian strata. Bill first expressed his interpretation in a 1958 paper co-authored with C.H. Hunt and followed it in later years with the subtly named 1977 paper "The Ice River Complex, British Columbia, is Precambrian Basement" published in the Bulletin of Canadian Petroleum Geology. Conventional wisdom was that it was an alkalic Devonian intrusion. Bill participated in an early 1980's field trip to the locale with other experts to try to resolve this issue but it does not appear that a conclusion was reached.

Among his memorable beliefs were his ideas regarding "Crustal Shifts". Bill's training in engineering as well as his interest in looking at the big picture geologically had led him to writing a paper that was published in the Bulletin of the A.S.P.G. in 1958. He felt that sudden crustal shifts were the only explanation for the geological evidence of mountain building, mid-oceanic ridges, giant rift valleys, the universal systems of basic dykes, worldwide unconformities and hiatuses, glaciation in present tropical regions and tropical conditions in what is now the arctic. All of these and others were believed to result from the simple mechanism of erosion.

Never one to leave the engineering side, Bill continued his innovative work in the late 1980's when he patented methods of tertiary oil recovery using any gas to displace oil in full or partially depleted reservoirs. This was a direct application of his theories on the regional migration of hydrocarbons and the displacement of one phase by the other. Originally he intended to publish his ideas on tertiary oil recovery in the scientific journals, but was convinced by happenstance to try to have them patented. He was delighted when the patents were granted but disappointed that they were never officially tested and used for oil production. Many times, however, he saw that unofficially his ideas were confirmed in the literature.

Bill Gussow's accomplishments have been recognized throughout his career. In 1955 he was invited to be a Fellow of the Royal Society of Canada for his contributions to geology to that time. It was especially heartwarming for him to have received that honour because his father, Dr. H. T. Güssow, was also a Fellow of the Royal Society of Canada, and to have father and son fellows at the same time was quite unusual.

In the year 1998 the Canadian Society of Petroleum Geologists awarded Bill, already an Honourary Member of the Society, the Stanley Slipper Gold Medal for "contributions to oil and gas exploration in Canada" while the American Institute of Petroleum Geology also made him an Honourary member in that year. In 2000 the A.A.P.G. named him as a winner of its prestigious Pioneer Award given to "*longstanding members who have contributed to the organization and who have made meaningful and significant contributions to the science of geology*". One of his more lasting tributes occurred in 2002 when the C.S.P.G. named its annual topical conference for Bill as the William C. Gussow Geoscience Conference Series – an act most fitting given his life-long passion for discussion and the critical examination of important topics. Two successful conferences have been held in this series – the first in 2004 examined "Water Resources and Energy Development" and the second in 2005 focussed upon "Coal Bed Methane: Back to the Basics of Coal Geology".

William Carruthers Gussow, Ph.D., P.Geol., P.Eng., passed away peacefully in Ottawa on August 20, 2005 in his 98th year having lived a life full of multiple careers and abundant, progressive thought. He is remembered by C.S.P.G. office staff as being frugal to the end having preferred public transportation over a taxi when he attended the 1998 C.S.P.G. Convention at the ripe old

age of only 90. In closing, perhaps the most eloquent tribute to Bill was paid by colleague Bert Bally in his citation for the Pioneer Award in which he said: *“Like some early naturalists, there was never any limit to the scope of Bill’s interests. Always a passionate and persistent protagonist of often unorthodox views, he supported them with his own keen field observations. Bill is, for many of us, a classic role model, always coming up with new, often startling ideas and generous in sharing his experience with others. Perhaps most of all we appreciate his kindness, his friendliness and his gentle sense of humour.”*

This memorial was composed by Clinton R. Tippett, Chair of the History and Archives Committee of the Canadian Society of Petroleum Geologists, and is based upon numerous sources including family contacts, published citations, personal anecdotes and interviews that Bill did with the Petroleum Industry Oral History project in 1983 and with the Canadian Society of Petroleum Geologists 75th Anniversary Project in 2002.



Bill Gussow, Geologist (1908-2005)