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D.D. CAIRNES: NOTABLE PIONEER SURVEYOR INTO THE YUKON

by Jane Gaffin

(This piece has relied on information from Geological Survey of Canada's 1992 pictorial calendar marking a 150-year history in the Cordillera; *Horizons Without End*, a George M. Dawson Memorial Lecture presented by Dr. Fred Roots, and co-sponsored by the Yukon Science Institute and the 2001 Yukon Geoscience Forum; **Yukon Places and Names** (2nd edition, 2003) by R.C. "Bob" Coutts; and Steve Traynor, mineral inventory geologist, Yukon Geological Survey.)

Dr. Delorme Donaldson Cairnes, born in 1879, was a graduate of Queen's University of Kingston, Ontario. He was the Geological Survey's Yukon specialist from 1905 until his accidental death by drowning in a lake near Ottawa in 1917. He was only 37 years old.

Although his career was shortened by his untimely death, his exploration added enormous knowledge to understanding the Yukon's geology.

On one renowned expedition, he led Survey parties who mapped a five-mile swath along the Alaska-Yukon border between 1912 to 1914. This work established major structural and rock formation divisions still used today.

Modern-day geologists are indebted for pioneer Surveyors laying the geological groundwork on which all the Survey's later knowledge is based. Cairnes, a versatile and admirable geologist, carried out a variety of investigations on gold, copper and coal deposits and improved knowledge of the stratigraphy of the eastern Yukon region 1906-1910 before he was assigned to take on the Canada-Alaska boundary survey.

"It is interesting in hindsight, however, to realize that since the days of Cairnes (GSC) and Turner (USGC) on the boundary survey, how little direct exchange the Canadian Survey geologists have had in a formal way with very similar mapping taking place on the U.S. side of the 141st longitude," observed Dr. Fred Roots, a former GSC geologist.

"This period of separateness lasted for about 70 years until it was in part broken by the Decade of North American Geology Project (DNAG)," he added during his George M. Dawson Memorial Lecture titled *Horizons Without End: Early Geological Investigations and Ideas about Yukon*.

But he noted that even DNAG produced two separate volumes of synthesis, east and west of the 141st line of longitude.

Yet Yukon geology fit into the world picture. "An event of tremendous importance in the history of geological thought and understanding was the compilation of the known geology

of the entire world by Austrian geologist Edouard Suess," said Dr. Roots during his 2001 George M. Dawson Memorial Lecture in Whitehorse.

The five-volume English edition of **The Face of the Earth** was published in 1909. Dr. Roots advised that Suess' interpretation profoundly changed geological thought and broadened the outlook of geologists from concentrating on local phenomena to looking at their observations in a planetary setting.

"Suess' great work is not only a detailed and meticulously reference summary of published geological descriptions of all continents, except Antarctica, but it is a masterful synthesis and coherent interpretation of the geological structures and geological history of the entire planet."

The Yukon/Alaska area came in for careful attention. "The line from Mount St. Elias to the Arctic Ocean afforded a cross-section across the entire northern Cordillera," said Dr. Roots.

"Dr. D.D. Cairnes was assigned by the Canadian Geological Survey to much of this work. He provided the first regular description of a very confused part of the Yukon Plateau and the southern flanks of the Brooks Range, and, aided by his earlier work in the Yukon goldfields, provided information that was valuable both to miners and administrators on both sides of the border."

Dr. Roots praised Cairnes whose physically tough survey is still quoted today in connection with the scientific investigations of the Alaska National Wildlife Refuge in the Brooks Range.

Tribute was paid to Cairnes by naming three landmarks and a creek for the notable geologist. In the Yukon's Kluane Range, a prominent peak, named in his honour in the 1920s, is just over 9,200 feet/2,800 metres (NTS 115B/16) and approximately 11 miles/18 k SSE of Kluane Lake. Mount Cairnes can be seen looking south from the Alaska Highway between Haines Junction and Destruction Bay.

A second Mount Cairnes was named in the 1960s. It rises about 6,200 feet/1,878 metres between Cairnes Creek and Black Mike Creek in the Ogilvie Mountains (NTS 116B/8) at the headwaters of the North Klondike River. It can be seen from the Dempster Highway.

Supposedly, another mountain in British Columbia bears his name, too.

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See related GSC article *Early Surveyors Left a Permanent Mark on the Yukon*.

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