

# W.H. Collins (1878-1937), Stellar Canadian Geologist: Reading the Rocks, the Story of the Geological Survey of Canada 1842-1972 By Morris Zaslow

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[Aller au sommaire du numéro](#)

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## W.H. Collins (1878-1937), Stellar Canadian Geologist

### Comment on

*Reading the Rocks, the Story of the Geological Survey of Canada 1842-1972*

By Morris Zaslow

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### INTRODUCTION

"The line of great directors of the former Geological Survey of Canada, starting with Sir William Logan, has closed with Dr. William Henry Collins." So stated T.T. Quirke (1938, p. 161) in a memorial to Collins (Fig. 1), which summarizes Collins' fine career and provides a list of his publications from 1906-1937, the year of his death. Collins studied and published on a wide variety of geological topics, particularly on the geology of the north shore of Lake Huron. His maps and reports on the Blind River area of Ontario are recognized as having contributed significantly to the discovery of more than \$30 billion worth of uranium ore in Canada. In my view his scientific achievements should have been recognized by Canada long ago by awarding Collins the highest honors of the country. As can be seen in memorials by Quirke (1938) and others (Knopf, 1938; Malcolm, 1937; and Moore, 1937), Collins was recognized world-wide and received many honors. Collins and his career were also clearly outlined by Alcock (1947). As well, Dr. Collins was the third-longest serving director of the

Geological Survey of Canada (GSC). I knew Dr. Collins well, having worked for and with him at the GSC in the 1920s and 1930s. Then and now, I could not have admired him more.

*Reading the Rocks, the Story of the Geological Survey of Canada* (Zaslow, 1975) in my view is one of the best references on the GSC, although now out of print. There are many references to W.H. Collins (1878-1937), Director of the Geological Survey of Canada from 1920-1936, including a very detailed account of Collins' outstanding career as a field geologist and a scientist, but a less flattering account of his abilities as an administrator. The published memorials and obituaries from the late 1930s noted above, in my view, provide a clear picture of Collins and his contributions. Quirke's memorial (1938) contains a 7-page, 109-entry bibliography of Collins' publications, as well as a fine account of his life and work. Thus Collins' scientific work and reputation are not in question.

Collins' career as Director of GSC, 1920-1936, is, however, another matter. I consider that the sections in Zaslow (1975) dealing with Collins' performance as Director of the GSC are inaccurate and misleading, and this is the reason for this contribution. It appears that Zaslow's (ibid) account of Collins' career as GSC Director was based on inaccurate and biased submissions by others to Professor Zaslow, and thus he cannot be blamed for presenting an unflattering picture of Collins in this role. By the time of publication of *Reading the Rocks*, Collins had been dead for nearly 40 years and thus in no position to defend himself. On reading Zaslow's (1975) account of Collins as GSC Director, I wrote to several former colleagues of Collins to seek their opinion of Collins: all held him in the highest regard, both as a scientist and as a GSC Director.

### ZASLOW'S (1975) ACCOUNT OF COLLINS AS GSC DIRECTOR

For the Geological Survey of Canada

"the twenties were a period of difficulties and eclipse" (Zaslow, 1975, p. 336) as further developed below and as personally experienced by me while in the employ of the GSC (1926-1933). Charles Camsell, Deputy Minister at the time, seems to have favoured the Mines Branch over the Geological Survey, presumably because of its closer ties with mineral production and therefore national wealth. According to Zaslow, Collins was "a very brilliant if narrow man" (Zaslow, ibid, p. 338) with a "shy, retiring, somewhat uncommunicative nature" (Quirke 1938, p. 160; quoted in Zaslow, ibid, p. 338) who demonstrated "inability or unwillingness....to cooperate with Camsell to advertise the Survey" (Zaslow, ibid, p. 337). Zaslow went further, noting missed scientific and technological opportunities of the 1920s and 1930s that he attributed to poor leadership by Collins as GSC Director.

Zaslow's (1975) comments on Collins as GSC Director conclude with the following statement (p. 339, 340):

All in all, Collins must be judged to be an unfortunate choice for the directorship, notwithstanding his great talents and many virtues, some of which inhibited his being a successful director. His failures were primarily due to his over-conscientious nature that led him to interfere unduly in the affairs of his subordinates, his lack of interest and skill in political relationships, and his narrow, unimaginative concept of the role of the Survey. He lacked the optimism and vision to carry the Survey forward to the opportunities of the years of high prosperity and economic expansion, an age of rapid technological changes exemplified by the radio, automobile, motorboat and airplane in communications, and such scientific advances as geophysics and radioactivity. Collins' failure to make effective use of these opportunities is the real measure of his shortcomings as director.

### AN ALTERNATIVE VIEW

The following observations and comments regarding Dr. Collins' performance as GSC Director are taken in part from Gussow (1998). When W.H. Collins took over the Directorship of the GSC in 1920, three major events had

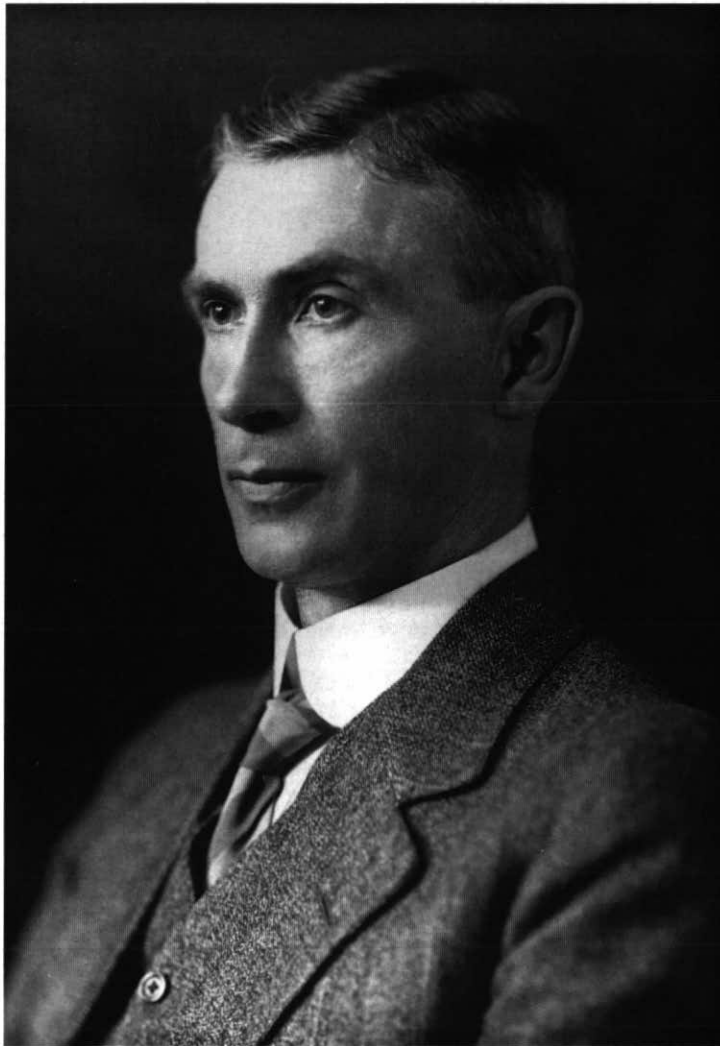
<sup>1</sup>For those who may not know him, W.C. (Bill) Gussow, Ph.D., F.R.S.C., is a retired petroleum geologist now living in Ottawa. A former Chief Geologist and Exploration Manager of Shell Canada Ltd., Dr. Gussow has worked widely in USA and the far east, as a geologist and engineer, at times as a consultant. In Calgary in February 1999, Bill Gussow was given the Stanley Slipper Award by the Canadian Society of Petroleum Geologists, an award to honour those who have made significant contributions to petroleum exploration in Canada. When the GAC was formed in 1947, Dr. Gussow was a founding member. Early in his long career, Dr. Gussow was a map draftsman in Ottawa and field geological assistant for the Geological Survey of Canada (GSC), 1926-1933. This Comment on W.H. Collins is based on Bill Gussow's GSC experience at that time.

adversely affected the health and productivity of the GSC and undoubtedly the morale of GSC personnel. The Geological Survey of Canada suffered its first devastating blow in 1915, when 19 professionals enlisted to serve in World War I. This loss of many key staff members was followed, on 3-4 February 1916, by a massive fire in the Centre Block of the House of Commons, destroying the building. The effect on the GSC was immediate, for the Victoria Museum, then home of the GSC in Ottawa, was selected for the Parliament of Canada to sit while awaiting rebuilding of the Centre Block, and this meant that the GSC was displaced from the Museum virtually overnight. The Museum was used by Parliament from 4 February 1916 until 1920, when Collins became GSC Director. The third devastating blow to GSC took place in 1920: 10 senior geologists resigned from the GSC because of low pay and/or attractive offers from oil companies and universities. Those leaving were E.L. Bruce, L.D. Burling, A.O. Hayes, B.R. McKay, J.J. O'Neill, B. Rose, J.S. Scofield, J.S. Stewart, M.Y. Williams and W.J. Wright. These personnel losses, combined with those individuals lost to the war effort who did not return, depleted the organization of much talent. So it was against this sombre backdrop that Collins became Director in 1920.

Dr. Collins had 15 years of strenuous field work behind him when he was appointed GSC Director in 1920. During the years 1905-1920 he had mapped the rugged Canadian Shield north of Lake Superior and had published many reports (see Quirke, 1938, p. 162-168). As noted above, Collins became GSC Director at the time of resignation of ten senior staff members. Despite these key personnel losses, Dr. Collins soon decided that the GSC's best con-

tribution to Canada would be to map the country, particularly the Canadian Shield, on a scale of 8 miles = 1 inch, because the shield was the source of Canada's major mineral wealth. The oil boom of the 1940s that really began with the discovery of the Leduc field in Alberta in 1947 was still 25 years away, and coal was languishing. Accordingly, to meet the challenge of a major commitment to field mapping, commitments to sedimentary geology, paleontology, and museum collections would be static or reduced.

Malcolm (1937, p. XII) commented



**Figure 1** William Henry Collins (1878-1937), Director of the Geological Survey of Canada (GSC) 1920-1936. GSC negative 72122.

on the success of this geological mapping initiative as follows: "To this end he [Collins] initiated a series of geological maps on a scale of 8 miles to 1 inch for the whole of Canada and succeeded in publishing 12 sheets covering a belt

extending almost from the Atlantic to the Pacific."

Meanwhile the Centre Block of the Houses of Parliament was rebuilt by 1920. The Geological Survey was able to reoccupy the Victoria Museum that year, with a permanent staff of 22 professionals. In 1921, the total GSC staff numbered 51 (geologists, paleontologists, topographers, cartographers, etc.). Some 33 field parties were sent out in 1921; 39 in 1922; and 47 in 1924.

In the 1920s aviation arrived in Canada. Airplanes were used more and more for transportation of people and supplies, and were beginning to be used for air reconnaissance. As early as 1921 Collins had requested the use of airplanes from the Canadian Air Force (later the Royal Canadian Air Force) for air reconnaissance as well as to move supplies and men to remote field locations. In 1928 Dr. Collins had a notice posted offering all interested GSC geologists an opportunity to fly in a Royal Canadian Air Force airplane to observe geology and topography from the air. Most geologists at the time had concluded that "to do geology, you had to keep your feet on the ground" (H.C. Cook, GSC geologist). In 1928 I was a draftsman at GSC, and only one other GSC employee, Oscar Malte, and I put our names down for a flight. I received a telephone call from Collins' office that I could join Malte on a flight, providing that I drove him to Royal Canadian Air Force base in Rockcliffe. Eager to do so, Malte and I flew in a Ford Trimotor airplane from Ottawa to Montreal and back along the Ottawa River, enthusiastically taking in the geological and topographical sites from the air for the first time.

My recollection is that Dr. Collins did his level best to persuade all GSC geologists to make use of airplanes, both to move people and supplies as well as

to acquire and use both vertical and oblique air photographs. The use of such photographs was an entirely new contribution to field mapping, and had the effect of opening up many new areas for study in which no topographical maps yet existed. Largely as a result of Collins' effort and support, E.L. Bruce did air reconnaissance in Manitoba, and W.F. James, J.E. Gill and J.B. Mawdsley used aircraft in their field geological studies.

Dr. Collins was fascinated by the Sudbury nickel eruptive, but as Director was only able to undertake field work in during July and August. In 1928, Dr Collins had the Fairchild Company produce vertical air photographs of the Sudbury basin to aid in his geological studies. To my knowledge these were the first systematic air photographs made for the GSC for geological purposes. As a draftsman with GSC at the time, it became my task to make uncontrolled photogeological mosaics of the Sudbury Basin from these photographs, showing outcrop areas, drift-covered areas, geological contacts, quartz-dyabase dykes, portages, etc. It may be that these were the first such photogeological maps made in Canada. Earlier photos had been oblique views, used mostly for evaluating forests and making topographical maps.

Also contrary to the views expressed by Zaslow (1975), Collins was a supporter of other new technological advances in the 1920s: in the early 1920s Collins appointed H.V. Ellsworth to a laboratory analyst position, and provided help for Ellsworth to work on igneous rocks to try to determine their age (unpublished comment from an interview of a senior scientist as conducted by Zaslow in preparation for the writing of *Reading the Rocks*, 1975).

The fourth devastating blow and setback for the Geological Survey was the Great Depression, 1929-1935. In 1930 the R.B. Bennett government cut all salaries by 10% and froze them at these reduced levels until October, 1935, while Collins was still GSC Director. During the Depression no additional staff were hired, and several geologists, notably D.F. Kidd, J.F. Walker and F.J. Wright, resigned. In addition, all Summary Reports, major sources of value to mineral exploration, were discontinued in 1933 as a consequence of the Depression.

In summary, all of the major prob-

lems noted here occurred during Collins' tenure as Director. In my judgment Collins coped as well as he could, and should not be blamed for any of these problems. His record of accomplishments and his behavior as Director under trying conditions demonstrate outstanding ability that, although recognized in the obituaries and memorials immediately following his death of kidney failure in 1937, seem to have been forgotten by the time of writing of the history of the Geological Survey of Canada by Zaslow in 1975. My view of Dr. Collins was and is one of great admiration. I learned a great deal from him geologically, and from contact with the many geological visitors that he entertained from all over the world. In my view he is one of the giants of Canadian geology, and should be recognized as such.

#### ACKNOWLEDGMENTS

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