

**YUKON
HISTORICAL
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MUSEUMS
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FREDERICK SCHWATKA'S YUKON RIVER EXPLORING EXPEDITION AT
UPPER END OF INGERSOL ISLANDS, ABOVE FORT SELKIRK. JULY 13, 1883

YUKON HISTORICAL AND MUSEUMS ASSOCIATION

PROCEEDINGS OF THE FALL MEETING, 1983

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Table of Contents

Protecting the Monopoly: The Hudson's Bay Company and Contemporary Knowledge of the Far Northwest, 1830-1869 Kenneth S. Coates.....	3
George Mercer Dawson and the Geological Survey of Canada Yukon Expedition of 1887-1888 Brad Lockner.....	13
The Kennicott Network: Robert Kennicott and the Far Northwest Kenneth S. Coates.....	25
Early Explorations of Nesketaheen and the Dalton Trail: An Ethno-Archaeological Perspective Beth Laura O'Leary.....	33
Clothing the Early Expeditions: An Essential Contribution by the Native Seamstress Barbara F. Schweger.....	42
The Geologist: Early Days in Alaska Dale A. Stirling.....	56

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INTRODUCTION

The Sixth Annual Fall Conference sponsored by the Yukon Historical and Museums Association, took place September 30 to October 2, 1983 in the Cowan Wing of the MacBride Museum. The conference theme was "The Scientific Contributions of Early Alaska/Yukon Explorers".

The theme developed out of the fact that 1983 was the one hundredth anniversary of Frederick Schwatka's historic trip down the Yukon River. It was our intention to introduce those individuals who played such a significant role in the exploration and development of the north through their various contributions.

The speakers for the conference came from across Canada, and papers from New Mexico and from Alaska were presented. We would like to thank Ken Coates, currently teaching at Brandon University, who presented two papers: "Protecting the Monopoly: The Hudson's Bay Company and Contemporary Knowledge of the Far Northwest, 1830-1869" and "The Kennicott Network: Robert Kennicott and the Far Northwest". Barbara Schweger of Special Textiles Studies, presented a paper, "Clothing the Early Expeditions: An Essential Contribution by the Native Seamstress", which was well supported with a selection of slides. A paper entitled "George Mercer Dawson & The Geological Survey of Canada Yukon Expedition of 1887-1888" was presented by Brad Lockner of Simon Fraser University, who has recently co-authored a book about George Dawson. Beth O'Leary, associated with the University of New Mexico, sent a paper to be read, entitled "Early Explorations of Nesketaheen and the Dalton Trail: An Ethno-Archaeological Perspective". Dale Stirling, from the Alaska Department of Natural Resources in Anchorage, Alaska, allowed us to present his paper: "The Geologist: Early Days in Alaska".

I would like to thank the following individuals and organizations. The MacBride Museum provided the Cowan Wing for our use. The Elks Legion assisted by loaning needed chairs. Yukon National Historic Sites provided

the use of their audio/visual equipment. I would like to particularly thank CP Air for assisting us with return air fare for one of the speakers. The Whitehorse Recreation Board and Yukon Lotteries Commission provided funding which was applied to travel costs for two other speakers. Thanks to the Department of Education, Government of Yukon, for the loan of the video copies of the "Yukoners" series. I would like to thank Jeff Hunston for his continued encouragement and advice and for his reading of Dale Stirling's paper. Thanks to Michael Gates for reading Beth O'Leary's paper and to Joy Wickett for her capable hands in providing the refreshments during the daily sessions. Finally, thanks also to Jenny Trapnell for her moral support in the defence of our application to the City of Whitehorse Recreation Board.

The Conference was a success in that it introduced to the public the accomplishments of some of the individuals who were able to handle the challenges of the north.

David Porter
1983 Fall Conference Chairperson

PROTECTING THE MONOPOLY: THE HUDSON'S BAY COMPANY
AND CONTEMPORARY KNOWLEDGE OF THE FAR NORTHWEST,
1830-1869

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The Hudson's Bay Company's contribution to the opening of the far northwest is well-known. The names of Robert Campbell, John Bell and Alexander H. Murray come easily to anyone superficially versed in the early history of the Yukon Territory. The purpose of this paper is not to cover well-trodden ground concerning Hudson's Bay Company explorations, but rather to consider a different aspect of the opening of the region. In a recent book on northern exploration, T. Karmanski summarized H.B.C. contributions by commenting, "The explorations of the H.B.C. produced a blueprint of the Far Northwest which was the basis for the later development of the area." ⁽¹⁾ His comment is at best misleading and suggests the dangers of reading history backwards from the present. Instead of focusing on the rather tired question of "Who was there first?" - a Euro-centric issue of rather questionable significance - this paper will consider the Company's contribution to contemporary geographic knowledge. The purpose is to assess the extent to which the H.B.C. added to general and scientific information in the far northwest. The contention here is that the firm actively and rather creatively suppressed knowledge of the northern districts, keeping to itself important information about the resources of the Yukon River valley and the means of access to them. ⁽²⁾

To suggest that the Hudson's Bay Company was anything but a good corporate citizen borders on heresy (unless you are Native, in which case it is gospel). Indeed, any list of H.B.C. contributions to scientific exploration is long and unquestionably impressive. For example, the firm ably supported the exploration in 1826 by John Franklin of the Arctic Coast west of the Mackenzie River. Even more directly, the company financed and staffed the 1837 expedition led by Thomas Simpson and Peter Warren Dease along the same coast, a voyage which filled the last remaining gap on the map of the coastline of North America. Other H.B.C. efforts in the realm of northern scientific exploration included the assistance offered James Richardson,

John Rae and particularly the fourteen year long search for the remnants of the ill-fated 1845 Franklin Expedition. (3)

With such a stellar record, the Hudson's Bay Company's claim to a position at the front rank of northern scientific exploration seems well-established. One must, however, consider the possibility of self-interest influencing the Company's generosity. The repeated assistance to northern explorers in the early 19th century reflected a particularly urgent need to enhance the firm's negative public image in Britain. This was particularly crucial in the 1820's and 1830's when the H.B.C.'s fur trade monopoly in Rupertsland faced the rigours of Parliamentary review and public scrutiny. The Company did have an obligation to continue searching for the North-West Passage and, particularly with the Simpson-Dease expedition, chose their actions with an eye directly on public opinion in England. Put simply, it was good business to be seen travelling among the Arctic Islands in the pursuit of scientific knowledge; especially if the areas being examined were of little or no consequence to the fur trade.

Turning from the high Arctic to the Yukon River valley provides a rather different view of the H.B.C. as a member of the scientific community. In this instance, the Company was remarkably parsimonious with much sought-after geographic and scientific knowledge, preferring to leave the maps blank, to restrict exploratory activities and to suppress knowledge of mineral discoveries in order to protect its trade. The Yukon was unlike the Arctic coast. As a valued fur preserve, it had to be sheltered from external observation and protected as an exclusive Hudson's Bay Company trading district.

After the 1821 merger of the H.B.C. and the North-West Company, the re-structured H.B.C. initially expressed little interest in the far north-west. Exploration was left to others, most noticeably Franklin. The company viewed the district as a geographic oddity, a challenge to cartographers but of limited interest to fur traders. Corporate efforts were instead directed to the west, in response to the threat posed by the expansion of Russian trade inland from the coast via the Stikine River. The Company's attention focused initially on the Liard and Dease

Rivers, as Governor George Simpson sought to rebuff Russian advances into British trading territory. When John McLeod followed the Liard River north in 1831, reaching as far as Lake Simpson - some 100 miles north of the present Yukon/British Columbia boundary - his discoveries were substantially ignored. Instead, McLeod was directed to investigate the westward-reaching Dease River system. McLeod's voyage received no publicity, despite the important discoveries of the upper Liard, Frances and Dease Rivers.⁽⁴⁾ Available maps were not revised for quite some time and no effort was made to publicize H.B.C. expansion plans.

Ironically, it was the deliberate public relations ploy of sending Simpson and Dease to explore the Arctic coast that turned H.B.C. attentions to the Yukon River valley. The unexpected discovery of a major river - the Colville - convinced the pessimistic Governor Simpson that the area west of the Mackenzie contained a potentially valuable fur preserve. The company had perceived the expedition as being for the "acquisition of scientific knowledge and information, and unconnected with a view towards advantage from Trade," and were understandably elated that their expenditures would not go unrewarded.⁽⁵⁾ Governor Simpson moved quickly to capitalize on the discoveries. John Bell was dispatched to the Peel River and directed to seek a route across the mountains. When the Russian challenge along the Pacific Northwest coast ended with the signing of a H.B.C.-Russian American Fur Company Accord in 1839, Robert Campbell was similarly instructed to turn his attentions from the Dease River to the southern reaches of the new fur district.

There is no need to recount the well-documented efforts of Bell and Campbell to investigate the Yukon River system. Though encountering significant difficulties and, in Campbell's case, displaying a notable lack of resolve, between 1839 and 1851 the two men completed much of the map of the Yukon interior. Under their direction, and that of Alexander H. Murray, posts were opened at Peel's River, Lapierre's House, Fort Youcon, Frances Lake, Pelly Banks and Fort Selkirk, and a reasonably active fur trade developed. Within the ranks of the H.B.C., the combined explorations of McLeod, Campbell and Bell had defined most of the river systems and, though vague on specifics, had delineated the main geographic structure of the region.⁽⁶⁾

Such information would have been of great interest to other explorers, adventurers, traders and scientists had it become generally available. Similarly, had the H.B.C. acted as they had in the Arctic and continued their explorations until the last river was charted and the last mountain pass mapped, the firm would have made a notable contribution to contemporary scientific knowledge. Because such details posed a threat to the fur trade, however, the H.B.C. kept the information to themselves and deliberately suppressed or refused to seek any knowledge which threatened the integrity of their interior trade.

The reticence was well founded. From the establishment of Fort Youcon in 1847, the H.B.C. knew their post to be encroaching on Russian soil in direct contravention to their agreement with the R.A.F.C. To have pushed further west or to publicize the location of the establishment threatened their precarious hold on a valuable trade site. It was suggested in 1851, for example, that the H.B.C. send surveyors to ascertain the precise location of the post, an action taken for all the other posts in the Mackenzie River District. As James Anderson, then in charge of "R" District, carefully phrased it, the firm "may not be particularly anxious about clearing up the doubt that exists regarding the position of this Fort." (7) Though Robert Kennicott in 1860 and scientists with the Collins Overland Telegraph four years later recognized Fort Youcon to be outside of British territory, the lack of a detailed survey prevented necessary confirmation. The Hudson's Bay Company continued on in a state of feigned ignorance. The effort was successful in suppressing the location. Colton's Atlas of America (1869) shows the junction of the Porcupine and Yukon Rivers well within United States territory; it does not, however, indicate the location of Fort Youcon, almost the only H.B.C. post in the north so missed.

The corporate desire for secrecy extended to more than simply hiding the location of Fort Youcon. As late as 1852, general maps of the northwest included only the explorations concluded by John McLeod along the Liard River some twenty years earlier. Explorations by John Bell and

Robert Campbell along the Porcupine, Pelly and Yukon Rivers were not recorded until 1853 after Campbell returned to England on furlough. The Hudson's Bay Company clearly sought to preserve certain information for their own use. Had details of these surveys been included on maps available to the general public, the possibility existed that the Russians would use such information to expand their trade upstream. Similarly, more precise information on the interior opened the prospect of competitive traders moving in from the coast. Though the H.B.C.'s maps were substantially complete through exploration and informed speculation, little of this privately collected information was passed to the general public.

Despite corporate reluctance, detailed cartographic information was released by Robert Campbell in 1852. After the destruction of Fort Selkirk by Chilkat Indians, Robert Campbell made his way to Montreal to plead with Governor Simpson for increased support for the Yukon trade. After Simpson rejected his self-serving representations, Campbell received permission to travel to England on a year's furlough. While there, Campbell provided information on the area to the Arrowsmiths, the famous British cartographers, allowing them to complete much of what was to that point a conspicuous blank in the map of North America. Fort Youcon remained noticeably absent, reflecting a continued H.B.C. fear of discovery. Campbell had, however, done an admirable job of completing the map of the northwest.⁽⁸⁾

It is doubtful that Campbell's superiors greeted his generosity with alacrity, although in the interest of the company's image they were unlikely to criticize him publicly. There is no evidence that George Simpson or other H.B.C. officers were angry with Campbell, but they clearly did not share the explorer's need to disclose the northern discoveries. Detailed public knowledge of the fur trade districts, especially those vulnerable to external and foreign competition, went counter to business interests. The firm kept the information within corporate circles for more than a decade, the details remaining private until Campbell's voyage to Britain.

If H.B.C. motivations are somewhat complex, Campbell's reasoning is much more obvious. From the beginning, he had aspired to be one of the renowned corps of fur trade explorers, another Thompson, Fraser or Mackenzie. Given the opportunity, he all but fumbled it away; his repeated lack of resolve preventing him from making the grand exploratory thrusts and reducing his ventures to short-lived and ineffectual sorties. Campbell never stopped wishing for fame, a condition evident in his quick visit to the cartographers upon returning to London, and the preparation of a self-serving volume of memoirs on his northern travels. Campbell attained his desired renown, and his name was etched in books and on maps and historic site plaques, though he was regarded with less respect within the Hudson's Bay Company. Completing the map, and thus informing the world of his hitherto unheralded ventures, was consistent with his other attempts to guarantee his place in the history books. Indeed, his mapping activities did more than his memoirs and schoolbook accounts of his exploits, to solidify his claim to the first rank of northern explorers. It would not, however, be Campbell's last attempt to embellish his rather pedestrian reputation. (9)

By keeping the map to themselves, the H.B.C. carefully controlled external information on the far northwest. The secrecy served to keep H.B.C. activities out of public scrutiny and in particular deflected criticism from the fact that Fort Youcon was firmly located in Russian/American territory. The Hudson's Bay Company also knew, as did Church of England missionaries, that sizeable quantities of gold had been found in the Yukon River watershed. Again, however, the company attempted to protect its fur trade interests by keeping that information within a very small circle. (10) Though ultimately unsuccessful, the corporate secretiveness slowed early mineral exploration.

Retaining knowledge was, however, but one means of controlling geographic and scientific knowledge on the far northwest. By not seeking readily available answers to pressing scientific questions, the Hudson's Bay Company again sought to protect its corporate interests. When Fort Youcon was founded in 1847, for example, A.H. Murray's initial instructions directed him to continue explorations to the west and north. Fearing - indeed knowing - his post to be on Russian soil, Murray petitioned for permission to cease explorations. Governor Simpson agreed that the question of whether the Yukon and Colville Rivers were the same could be ignored. To the

Governor, it was "simply a matter of curiosity which we need not be at much pains to clear up".⁽¹¹⁾ Given the choice between a vexing geographic problem and preserving a profitable trade, the latter took precedence. It was not until the mid-1860's that official explorations confirmed the rivers to be different, though the H.B.C. had settled the matter to their satisfaction years earlier through Indian reports.

Robert Campbell encountered similar restrictions on his exploratory zeal while in the southern Yukon. Though hesitant to explore aggressively, Campbell repeatedly sought permission to continue his discoveries. Finally ensconced at Fort Selkirk in 1848, Campbell immediately requested permission to continue exploring to the Pacific coast. Through the Chilkat Indians, the H.B.C. trader learned that the passage was comparatively short and offered excellent prospects for supplying the interior posts. Though he initially granted permission, Governor Simpson quickly withdrew the offer. As he wrote to Campbell:

That you suggest (bringing in trade goods) from Lynn's Canal, even if practicable, I could not recommend to the Council, as if we obtained our supplies from thence, we should be opening a communication to the most valuable part of the Northern Department by which strangers might find their way thither, and with our supplies we should be obliged to introduce the extravagant tariff of the N.W. coast. (12)

The H.B.C. firmly closed the door on further exploration. Campbell was instructed to concern himself with the fur trade and with examining the country between the Yukon River and the Mackenzie Valley.

The rationale remained the same. As far as the H.B.C. was concerned, too much general knowledge threatened their trade. The firm's most valued possession was its internal monopoly, the unchallenged control of the Yukon and Mackenzie River trades. All challenges to that profitable monopoly had to be carefully and firmly rebuffed.⁽¹³⁾ Campbell's proposed exploration, like that of Murray at Fort Youcon, posed just such a threat. As Simpson indicated to the Fort Selkirk trader, mapping the natives' route to the interior or even hinting at its existence, threatened the stability

of the interior trade. Campbell was forbidden to seek a route to the coast, and indeed the Company successfully discouraged others for some time from believing such a route could be found.

The Hudson's Bay Company maintained its policy of limiting information and restricting exploration for more than a decade after Campbell added the far northwest to the world's maps. Many in the firm acknowledged, however, that their feigned ignorance would soon be discovered. The zoological explorations of Robert Kennicott in the early 1860's and particularly the work of the largely American Collins Overland Telegraph Company, increased the difficulty of hiding the location of Fort Youcon. Still, in the absence of verifiable scientific observation, corporate officers insisted - tongue firmly in cheek - that the post was on British soil. Even the arrival of a servant of the Russian American Fur Company in 1862 signalled not a retreat from the location, but rather touched off a major expansion of trade even further onto Russian territory. The H.B.C. continued at Fort Youcon until 1869, two years after the United States' purchase of Alaska. Learning from Yankee traders of H.B.C. incursions on their soil, the American government sent Captain Raymond of the U.S. Navy to ascertain the location of the British establishment. After twenty successful years, the H.B.C. pulled out of Fort Youcon and retreated quietly up the Porcupine River. (14)

With the withdrawal from Fort Youcon, the Company's defense of the geographic integrity of the Yukon River valley collapsed. Still, no attempt was made to publicize the firm's scant knowledge of a route to the Pacific coast nor to share information on Yukon River gold deposits. Fiercely protective of its inland monopoly - now pushed back to the Mackenzie River - the firm viewed the Yukon and particularly its posts along the Porcupine River as a first line of defense against encroachment by competitive traders. In short order, however, the secrets of the Yukon River valley were exposed as miners continued their inexorable push north. Sometime between 1874 and 1878, George Hold crossed from the Pacific Northwest coast to the headwaters of the Yukon River, a path followed thereafter by miners and scientists and the major route to the Klondike Gold Fields at the end of the century.

For almost thirty years, from the early explorations of Robert Campbell to the 1869 expulsion of the H.B.C. from Fort Youcon, the company sought to control and limit information on the Yukon River valley. Accomplished by restricting exploration that went counter to the interests of the trade and by delaying the release of detailed charts and post locations, the firm's goal was to prevent access to the area by competitive traders. The firm did not interfere with the travels of others, and even offered generous assistance to zoologist Robert Kennicott and clergymen of the Church Missionary Society. Such voyages, however, were not undertaken in pursuit of precise cartographic knowledge and as such did not threaten the H.B.C.'s trade.

On one level, the Hudson's Bay Company's contribution to scientific knowledge on the north was that of a favoured corporate citizen. Unstinting efforts on behalf of Arctic exploration, especially the search for the ill-fated Franklin expedition, earned the company accolades throughout England, and, as planned, deflected some of the mounting criticism of the Company's outdated monopoly. The Yukon, however, was a different matter. Where the interests of geographical knowledge countered those of the fur trade, the former lost out. After all, the H.B.C. was a profit-making trading enterprise and to take actions contrary to its financial interests worked against the basic precepts of business. In the absence of external critics regarding the firm's control of the Yukon, the H.B.C. continued to suppress information on the lay of the land and the area's natural resources. By so doing, the firm deflected the probable diplomatic ramifications of maintaining Fort Youcon on Russian soil and, more importantly, protected its inland monopoly of the Yukon and Mackenzie fur trade.

FOOTNOTES

- ¹T. Karamanski, Fur Trade and Exploration: Opening the Far Northwest, 1821-1852 (Vancouver: UBC Press), p. 280.
- ²This paper is based on research presented in Ken Coates, "Furs Along the Yukon: Hudson's Bay Company - Native Trade in the Yukon River Valley, 1830-1893" (MA Thesis, University of Manitoba, 1980).
- ³Alan Cooke and Clive Holland, The Exploration of Northern Canada (Toronto: Arctic History Press, 1978) provides a chronology of explorations. See also L.H. Neatby, In Quest of the North West Passage (London: Constable, 1958) and L.H. Neatby, The Search for Franklin (London: Arthur Barker, 1970).
- ⁴The best description of McLeod's voyages is Karamanski, pp. 94-112.
- ⁵Hudson's Bay Company Archives (hereafter HBCA), D. 5/15 fol. 47, Governor and Committee to Governor and Council, 1 June 1838.
- ⁶Karamanski covers the H.B.C. activities well. For a short summary, see K. Coates, "Furs Along the Yukon", B.C. Studies, No. 55 (Autumn 1982), pp. 50-78.
- ⁷HBCA, D. 5/32, fol. 284, Anderson to Simpson, 26 November 1851.
HBCA, D. 4/45, fol. 111, Simpson to Anderson, 20 August 1852.
- ⁸Campbell's career is covered (though uncritically) in C. Wilson, Campbell of the Yukon (Toronto: MacMillan, 1970); for a different interpretation of Campbell's activities, see Ken Coates, "Furs Along the Yukon", Chapter 5.
- ⁹Ibid.
- ¹⁰See Donald Smith's comment in Beddes Willson, The Life of Lord Strathcona and Mount Royal (Toronto: Cassell and Company, 1915), p. 472.
- ¹¹HBCA, D. 4/42, fol. 140, Simpson to Murray, 13 December 1850;
HBCA, B. 200/b/22, fol. 31, McPherson to Murray, 3 February 1848;
HBCA, D. 4/38, fol. 133, Simpson to McPherson, 22 November 1848.
- ¹²On the question of non-exploration, see K. Coates, "Furs Along the Yukon", pp. 57-66. HBCA, D. 4/71, fol. 241, Simpson to Campbell, 20 June 1850; Ibid., fol. 194, Simpson to Rae or Bell, 21 June 1850. Simpson had earlier granted permission for such an undertaking. See HBCA, D. 4/36, fol. 201, Simpson to Campbell, 15 December 1847.
- ¹³M. Zaslow, The Opening of the Canadian North (Toronto: McClelland and Steward, 1971), p. 57.
- ¹⁴Coates, pp. 123-151.

GEORGE MERCER DAWSON & THE GEOLOGICAL SURVEY OF CANADA
YUKON EXPEDITION OF 1887-88

Brad Lockner
Simon Fraser University

On April 22, 1887, George Dawson left Ottawa bound for a season of field work under the auspices of the Geological Survey of Canada (GSC). His journey, which would lead him across a vast stretch of Yukon country, has been called by Morris Zaslow, "one of the most remarkable reconnaissance explorations in the entire history of the Survey."⁽¹⁾ From May 18, when Dawson arrived at Wrangell on the Alaska panhandle, until September 20, when the Dawson party returned from the interior to Lynn Canal, the expedition covered some 1322 miles over rugged, largely uncharted wilderness. Such arduous endeavours were familiar to Dawson who had already spent fourteen years exploring large expanses of western Canada.

Dawson's explorations were preceded by a formal training in geology, mining, and natural history. Born in Pictou, Nova Scotia, on August 1, 1849, George Mercer Dawson was the oldest surviving child of John William Dawson, principal of McGill University and distinguished geologist, palaeontologist and theologian. Young George led an active childhood until age eleven when he contracted a severe illness (probably poliomyelitis) that left him permanently stunted and deformed. Adolescence was a period of painful and slow recovery offering few opportunities for outdoor exercise or regular schooling. Nonetheless, by age eighteen, Dawson had regained sufficient strength to enroll at McGill as a part-time student. After one year, Dawson left in 1879 for London, England and the Royal School of Mines to pursue studies in geology. There Dawson excelled under the tutelage of such renowned scholars as A.C. Ramsay and T.H. Huxley. In 1872 he graduated with honours, placing first in his class.

Following a brief interlude in Quebec and Nova Scotia, Dawson secured the post of botanist and geologist to the British North American Boundary Commission, in the spring of 1873. Dawson's 1875 report on his field findings⁽²⁾ immediately established his scientific reputation. The work was a closely reasoned and carefully detailed analysis of the natural features

of the boundary region from Lake of the Woods to the Rocky Mountains. Dawson's prestige continued to grow after he joined the GSC in 1875 as geologist with special responsibility for western Canada and especially British Columbia. In his studies, Dawson established the foundation upon which all future western Canadian geological work has been based. His unusual powers of observation, singular ability to analyze and synthesize data and aptitude for conveying material concisely and clearly were evident in the many geological reports and articles Dawson authored. George Dawson was also a scholar of much breadth who carried out pioneering work in mining, natural history and ethnology. Recognized for his skills, Dawson rose through GSC ranks until he was appointed Director of the Survey in early 1895. Dawson's myriad accomplishments did not go unrewarded. He received honorary doctorates from Princeton, Queen's, McGill and the University of Toronto, was a fellow of the Royal Society and Royal Society of Canada, president of a variety of professional organizations and winner of several prestigious scientific prizes. George Dawson became one of the leading Canadian scientists of the late nineteenth century. Unfortunately, Dawson's tenure was abruptly terminated by his untimely death from bronchitis in Ottawa on March 2, 1901.

The 1887-1888 Yukon expedition did much to establish Dawson's position as a leading scientist and geologist. The sheer feat of covering large distances with such primitive gear brought accolades to Dawson and his co-workers. More significantly, the Yukon expedition was a successful scientific exploration of the Yukon and adjacent regions. Even though the GSC focused on geological discovery, its mandate in the 1880's also included elucidation of natural features and ethnology. The 1887-88 Yukon Expedition was a vital component in the GSC effort to explore and describe the northern and northwestern regions of Canada. While Dawson had earlier ranged as far north as the Skeena and Peace Rivers in 1879, no GSC explorer had as yet ventured into the Yukon. Until then, only sporadic exploration by scientists passing through had been undertaken for much of the territory. Whole tracts of country were little known and poorly described.

The growing presence of American miners in the region was another factor prompting Canadian government exploration of the Yukon. In the 1880's, with news of gold finds, increasing numbers of prospectors entered the Yukon. To exercise sovereignty over the territory with any measure of authority, the Canadian government had to possess a clearer notion of the natural features and resources of the Yukon. The unsettled boundary with Alaska further added to Canadian apprehensiveness. Obviously, before the Canadians could advance any arguments to validate their boundary claims more adequate knowledge had to be gathered.

So it was that George Dawson, then the preeminent GSC reconnaissance geologist in the far west was chosen to lead the expedition to the Yukon. The expedition was carefully planned from its outset. Long before Dawson departed Ottawa, he gleaned information on the Yukon territory and environs. Valuable insights came through correspondence with Robert Campbell, the Hudson's Bay Company man who spent time in the Yukon earlier in the century. In order to cover as much country as possible, Dawson divided the expedition into three parties, each with defined tasks. Dawson himself headed a party that ascended the Stikine River, went on via Dease Lake and the Liard and Frances Rivers to Frances Lake, portaged to the upper Pelly River, descended that stream to its junction with the Lewes or Yukon, ascended the Yukon and finally crossed via the Chilkoot Pass to the coast. William Ogilvie, head of a second party and later Commissioner of the Yukon from 1898 to 1901, travelled from the head of Lynn Canal to the intersection of the Yukon River by the 141st meridian, in order to establish an instrumentally-measured line along the Alaska boundary. After wintering there and building an observatory for taking measurements, the Ogilvie party crossed by the Tatonduk River to the Porcupine, went as far as Lapierre House, then returned south up the Mackenzie River. Richard George McConnell, then a young GSC geologist, but later Deputy Minister of Mines in the federal government, surveyed the Stikine below Telegraph Creek and the lower Liard, and after wintering at Fort Simpson on the Mackenzie, examined that river to its delta, crossed to and descended the Porcupine, then ascended the Yukon River and reached the coast by the Chilkoot Pass. These explorations were completed without major mishap and led to the production of several excellent reports,⁽³⁾ a testimony to the expertise and stamina of the three leaders and their crews.

Dawson's own voyage is well documented. His expedition was formally reported in a GSC publication issued in 1889 and reprinted in 1898.⁽⁴⁾ While the published report reproduces some of the "in-the-field" flavour of the expedition, it is Dawson's personal diaries⁽⁵⁾ that bring alive the adventure and the arduousness of northern exploration. His diaries are a fresh, firsthand account of travel in the Yukon wilderness. Although not prone to extravagance in his diary descriptions, Dawson's writing is vivid. For example, on July 24th, after struggling through difficult terrain on the portage from Frances Lake to the Pelly River, Dawson commented trenchantly: "We certainly make rather a mournful looking procession after our few last days of bush wacking. All in rags, & hands & faces scratched."⁽⁶⁾ Additional illustration of the relentless toil of the explorers is provided by his July 27th remark: "Got all stuff arranged & made up into packs every man having just about 100 lbs. Took all my power of conciliation & encouragement to get anything like cheerful work, a gloomy feeling seemed to settle down."⁽⁷⁾ The expedition was plagued by long stretches of hot and dry weather when clouds of mosquitoes fell upon the party. Rumours of unrest between Europeans and natives in the Yukon provoked further unease.⁽⁸⁾

Of course, Dawson's party did not enjoy the advantages of sophisticated support equipment. Modern aids to geological exploration were not available. Given the small size of the party (always less than ten men), and the nature of the country to be covered any equipment utilized had to be light and portable. The complete lack of transportation facilities in most of the areas traversed meant that the explorers had to provide their own means of travel. On two occasions the Dawson expedition resorted to building its own wooden boats. In early June at Dease Lake three boats were constructed while later, at old Fort Selkirk at the junction of the Pelly and Yukon rivers, the party built a twenty-five foot boat for the Yukon River ascent. In view of the distance covered with such rudimentary craft, Dawson's accomplishment is even more noteworthy. Considering his own diminutive physique, Dawson's endurance is astounding. When the Dawson expedition finally hit tidewater at Lynn Canal, a trek of monumental proportions had ended.

The scientific results obtained from Dawson's explorations were no less notable than the expedition traverse itself. As one commentator, Alan Wright, asserts: "The careful planning paid dividends. When the exploration was completed there was available a vast fund of new knowledge concerning the area."⁽⁹⁾ As a result of the work of the three exploratory parties much more was known about the Yukon and northern Canada. The expedition contributed to the advancement of the basic topographical knowledge of the region. The parties conducted the first systematic instrumental surveys in the Yukon, measuring huge tracts of land for the first time.⁽¹⁰⁾ Maps issued by Dawson and his colleagues were superior to earlier productions as many topographical details were filled in while the accuracy of the mapping was substantially improved.⁽¹¹⁾ Dawson paid particular attention to place names. Where necessary, he named physical features such as the Campbell Range on the west side of Frances Lake, the Lapie River on the Pelly, the Miners Range west of Lake Laberge, and Jubilee Mountain on the east side of Tagish Lake. Dawson also tried to rationalize nomenclature where place name inconsistencies existed. Here, he conflicted with Lieutenant Frederick Schwatka, the American military man who had travelled by raft down the Yukon River in the summer of 1883.⁽¹²⁾ Schwatka's attitude and abilities did not impress Dawson very favourably. According to Dawson, Schwatka "has completely ignored the names of many places already well known to miners, throughout the country, substituting others of his own invention, some of which even differ in the different versions of the map of his route which he has published."⁽¹³⁾ A fundamental disagreement with Schwatka was Dawson's acceptance of Indian place names which often were also used by Yukon miners. On several occasions Dawson changed Schwatka's place names by substituting the more traditional Indian designations.⁽¹⁴⁾ He also corrected some of the obvious errors made by Schwatka.⁽¹⁵⁾ Dawson, however, did not overturn all of Schwatka's work. In spite of Dawson's strident arguments to the contrary,⁽¹⁶⁾ Schwatka's designation of the Lewes River as the Yukon River has remained in popular and official usage. Still, Dawson did significantly improve the regularization of Yukon place names.

Dawson was the first to describe with any thoroughness the geology and glacial history of the Yukon and environs. The new evidence presented by Dawson greatly extended the known parameters of western Canadian geology.

Dawson's Yukon studies exhibit "his usual remarkable powers of observation and deduction."⁽¹⁷⁾ His published report contains a systematic and precise inventory of geological features and formations encountered along the exploration route.⁽¹⁸⁾ Dawson recorded, for the first time, a large number of geological features. Of the observations he made, one of the more interesting was that of a layer of volcanic ash along the course of the Pelly River.⁽¹⁹⁾ He also established analogies between Yukon geological formations and those to the south in British Columbia.⁽²⁰⁾ Dawson drew upon his extensive British Columbia experience to develop a regional geological outline. Similarly, he correlated his Yukon glacial findings with others made in the rest of western Canada. Dawson integrated the Yukon data into his emerging concept of a vast Cordilleran glacier that had covered most of the British Columbia and Yukon interior.⁽²¹⁾ In the report he was able to describe some features of the Yukon's glacial history, including ice movement and glacial deposits.⁽²²⁾

Aside from his strictly geological work, Dawson examined mining and mineral resources in the Yukon. To supplement his own field observations, Dawson interrogated Yukon miners at every opportunity.⁽²³⁾ From them he obtained firsthand accounts of placer gold mining at such localities as the Fortymile River. His published report furnished a good source of information on many aspects of Yukon mining. Along with comments on gold mining, Dawson also included notes on other types of deposits and mining.⁽²⁴⁾

He augmented the mining narrative by chronicling the history of mining in the Yukon and northern British Columbia.⁽²⁵⁾ Although not an example of critical historical scholarship, Dawson's history is a useful, factual account of the area's mining development. He did engage in more speculative analysis when contemplating the Yukon's mining future. Following his return to Ottawa and after reflection upon his field observations, Dawson hypothesized freely about the Yukon's mining potential. Always cautious in his predictions, Dawson was nonetheless convinced that "we may be prepared at any time to hear of the discovery of important mineral deposits."⁽²⁶⁾ His anticipatory remarks came to fruition only a decade later with the fabulous gold strikes on the Klondike in 1896. Even though Dawson did not actually locate any

mineral deposits of consequence, he contributed to the development of Yukon mining by "providing accurate, unbiased accounts of the fact that gold placers existed in the region, and of the travel-routes, climate, and general conditions, and indicating that much richer placers might be found."⁽²⁷⁾

Consistent with the broad aims of the GSC expedition, Dawson recorded a wide array of scientific data. His botanical observations included a discussion of tree species and their distribution and a list of plant specimens collected en route while his zoological examinations ranged from insects through mammals to fishes.⁽²⁸⁾ All collections were forwarded to subject specialists for analysis and eventual inclusion in the published report.⁽²⁹⁾ Characteristically, Dawson's raw data was analyzed within a framework of practical resource exploitation. He was always concerned about how scientific information could best promote economic development. Thus, his meteorological comments were subsumed within a larger discussion of the agricultural viability of the Yukon. Dawson concluded that despite extreme temperatures much of the Yukon could successfully produce crops.⁽³⁰⁾ Topographical features such as river systems were also discussed in relation to their utility as transportation routes.⁽³¹⁾ His report was a marvellous compendium of information supplemented by careful analysis of economic development and resource utilization potentials.

Dawson was not oblivious to the Yukon's human landscape. His narrative of the exploration and white settlement of northern British Columbia and the Yukon is an integral part of both the personal diaries and the published report.⁽³²⁾ Dawson also touched on issues of topical interest as diverse as the Alaska Boundary dispute, the status of the fur trade in 1887, and the work of the Hudson's Bay Company.⁽³³⁾ Dawson revealed his enduring fascination with indigenous cultures in his many comments on native peoples. Where possible he sought out local informants who could provide more detailed regional information.⁽³⁴⁾ And, despite a paucity of substantive data for many native groups, Dawson drew his notes together into a fine, preliminary sketch of Yukon and northern British Columbia native peoples.⁽³⁵⁾

Confronted with the many advances made by George Dawson on the 1887 Yukon Expedition, it is difficult indeed to overestimate the contribution he made to the scientific exploration of the Yukon. At a time when knowledge of the region was so very incomplete, in so many subject areas, Dawson seriously addressed a whole range of topics. Dawson's thorough and careful work not only vastly added to the store of data about the Yukon but also inaugurated a new era of accuracy. As Alan Wright correctly states of Dawson's revised Yukon report: "This publication is, beyond a doubt, the definitive work on the pre-gold rush Yukon." (36) Dawson's work was authoritative. Therefore, it seems only fitting that the memory of George Mercer Dawson, an individual of such small stature but of such giant capabilities, was to be forever linked with the Yukon when Dawson City received his name in 1897.

FOOTNOTES

- ¹ Morris Zaslow, Reading the Rocks: The Story of the Geological Survey of Canada 1842-1972 (Toronto: Macmillan Company of Canada, 1975), p. 157.
- ² George Mercer Dawson, Report on the Geology and Resources of the Region in the Vicinity of the Forty-Ninth Parallel... (Montreal: Dawson Brothers, 1875).
- ³ See George M. Dawson, "Report on an Exploration in the Yukon District, N.W.T., and Adjacent Northern Portion of British Columbia, 1887," in Geological Survey of Canada, Annual Report, 1887-88, n.s., 3 (1889), Part I, Report B, pp. 1-277; William Ogilvie, "Exploratory Survey of Part of the Lewes, Tat-on-duc, Porcupine, Bell, Trout, Peel, and Mackenzie Rivers," in Canada, Department of the Interior, Annual Report for the Year 1889 (1890), Part VIII, pp. 1-114; and R.G. McConnell, "Report on an Exploration in the Yukon and Mackenzie Basins, N.W.T.," in Geological Survey of Canada, Annual Report 1888-89, n.s., 4 (1890), Report D, pp. 1-163.
- ⁴ See Dawson, "Report on an Exploration." That GSC report, with additional material by McConnell, updated information, and without the original appendices was re-issued as Dawson, Report on an Exploration in the Yukon District, N.W.T., and Adjacent Northern Portion of British Columbia. 1887 (Ottawa: Queen's Printer, 1898).
- ⁵ See George M. Dawson, "Private Diary, 1887," which covers the dates April 22, 1887 to September 16, 1887; and his, "Private Diary, 1887. Vol. II," that documents the period from September 17, 1887 to October 31, 1887. Both volumes are found in the George M. Dawson Papers, McGill University Libraries, Rare Books and Special Collections, Montreal.
- ⁶ Dawson, "Private Diary", entry for July 24.
- ⁷ Ibid., entry for July 27.
- ⁸ See Dawson, "Report on an Exploration," 10; and Dawson, "Private Diary," entry for June 6.
- ⁹ Allen A. Wright, Prelude to Bonanza: The Discovery and Exploration of the Yukon (Sidney, B.C.: Gray's Publishing, 1976), p. 169.
- ¹⁰ An indication of the diligence Dawson took in making his measurements is the long list of astronomical observations appended to his published report. There, he also precisely described the instruments and methods employed in the surveys. See George M. Dawson, "Appendix VII. Summary of Astronomical Observations by Dr. G.M. Dawson, Employed in the Construction of the Map Accompanying this Report," in GSC, Annual Report 1887, Part I, Report B, pp. 261-277. The nine photographs that were included in this published report added an excellent visual dimension to the topographical descriptions. (See "Plates and Maps Accompanying this Report," in GSC, Annual Report 1887, xv) The many photographs Dawson took on the Yukon voyage are now repositied in the National Photography Collection, Public Archives of Canada, Ottawa.

FOOTNOTES (continued)

- 11 See L.N. Richard, "Index Map of the Yukon District N.W.T., The Northern Portion of British Columbia and Adjacent Regions to Accompany Report of George M. Dawson," in GSC, Annual Report 1887, Part I, Report B, opp. 1; J. McEvoy, "Map of a Portion of the Yukon District North-west Territory with the Adjacent Northern Part of British Columbia to Accompany Report of George M. Dawson," in Geological Survey of Canada, Maps to Accompany Annual Report, 1887-88, n.s., 3 (1889), 3 sheets; and C.O. Senecal, "Map of a Portion of the Mackenzie and Yukon Basins to Accompany Report of R.G. McConnell," in Geological Survey of Canada, Maps to Accompany Annual Report 1888-89, n.s., 4 (1891), 9 sheets. The routes taken by the three parties are illustrated on C.O. Senecal, "Index Map Shewing the Routes Followed by the Members of the Yukon Expedition 1887-1888," in GSC, Annual Report 1888, Report D, opp. 163.
- 12 See Frederick Schwatka, A Summer in Alaska (St. Louis: J.W. Henry, 1894).
- 13 Dawson, "Report on an Exploration," p. 143.
- 14 As examples, Dawson disallowed Schwatka's "Bove Lake" in favour of the Indian "Tagish" relegating "Bove" to an island in the lake. He also substituted the Indian translations "Big Salmon" and "Little Salmon" Rivers for Schwatka's "d'Abbadie" and "Daly" Rivers.
- 15 Dawson commented of Schwatka that "he names the west arm of Bennett Lake (though nearly two miles wide at the mouth) 'Wheaton River'. To the river which enters near this arm from a valley parallel to the Watson valley, I propose to apply this name. In the same way, Windy Arm is put down as 'Bove Bay and probably river,' and the great Tako Arm is shown as 'Tako River', and described as a stream of inconsiderable dimensions. I can offer no reasonable explanation of these errors." (Ibid., pp. 169-170)
- 16 Dawson's argument, succinctly stated, was that it was "unjustifiable to alter an old established name for the sole purpose of giving to a river a single name from its mouth to its source." (Ibid., p. 16)
- 17 Zaslow, Reading the Rocks, p. 159.
- 18 See Dawson, "Report on an Exploration," pp. 31-37, for his general outline of northern British Columbia and Yukon geology.
- 19 Ibid., pp. 43-46.
- 20 Ibid., p. 31.
- 21 Dawson's Yukon glacial work, in its regional context, was presented in his "Recent Observations on the Glaciation of British Columbia and Adjacent Regions," Geological Magazine, n.s., decade III, 5 (1888): 347-50; and George M. Dawson, "On the Glaciation of the Northern Part of the Cordillera, with an Attempt to Correlate the Events of the Glacial Period in the Cordillera and Great Plains," American Geologist 6 (1890): 153-62.

FOOTNOTES (continued)

- ²²Dawson, "Report on an Exploration," pp. 38-43.
- ²³See Dawson, "Private Diary," entry for August 30, 1887, where he interviewed the miner Tom Boswell who had been up the Hootalinkwa (now Teslin) River. Boswell not only provided Dawson with mining information but also topographical data on the Teslin River region.
- ²⁴See Dawson, "Report on an Exploration," pp. 27-28, where he mentioned the occurrence of asbestos and platinum; and Ibid., p. 148, where he noted coal beds near Rink Rapids on the Yukon River.
- ²⁵See Ibid., pp. 78-82 for the Stikine-Cassiar gold fields; and pp. 179-83 for the history of Yukon River gold mining.
- ²⁶Ibid., p. 30.
- ²⁷A.H. Lang, "G.M. Dawson and the Economic Development of Western Canada," Canadian Public Administration 24 (1971): 246.
- ²⁸An interesting note is that the zoological appendix contains a description of a new species of mouse named after Dawson. See C. Hart Merriam, "Appendix IV. Description of a new Red-Backed Mouse (*Evotomys Dawsoni*) from the Head-water of Liard River, North-west Territories," in GSC, Annual Report 1887, Part I, Report B, pp. 232-233.
- ²⁹See George M. Dawson, "Appendix I. Notes on the Distribution of Trees and of Certain Shrubs in the Yukon District and Adjacent Northern Portion of British Columbia," in Ibid., pp. 185-190; J. Macoun, "Appendix III. List of Plants Collected by Dr. G.M. Dawson in the Yukon District and Adjacent Northern Portion of British Columbia in 1887," in Ibid., pp. 215-28; James Fletcher, "Appendix IV. List of Diurnal Lepidoptera," in Ibid., pp. 229-31; T.H. Bean, "Appendix IV. Fishes, Determined from Photographs," in Ibid., p. 231; and F.D. Adams, "Appendix V. Lithological Character of Some of the Rocks Collected in the Yukon District and Adjacent Northern Portion of British Columbia," in Ibid., pp. 235-40.
- ³⁰Dawson concluded that "such hardy crops as barley, rye, turnips and flax can be successfully cultivated in the Yukon district as far north as the former position of Fort Selkirk, near the 63rd parallel." (Ibid., p. 24) In an appendix to the report Dawson included not only the meteorological measurements made on the expedition but also historical data collected from local residents, (see George M. Dawson, "Appendix VI. Meteorological Observations," in Ibid., pp. 241-259) all information he used to reach his conclusions about the feasibility of Yukon agriculture.
- ³¹See Ibid., pp. 19-21, pp. 173-74.

FOOTNOTES (continued)

- ³² Here again Dawson's accounts are not analytical studies but a straightforward chronicle of the region's history. See Dawson, "Private Diary, II," entry for September 28 for his history of the Chilkoot Pass; and Dawson, "Report on an Exploration," pp. 61-63 for his history of the exploration of the Stikine, pp. 82-86 for the Cassiar area, pp. 136-141 for the Liard and Pelly, and pp. 178-183 for the Upper Yukon River. Dawson consolidated his historical writings into his, Historical Notes on the Yukon District (Toronto: University of Toronto, The Librarian, 1898).
- ³³ For the Alaska Boundary see Dawson, "Private Diary, II," entry for September 28; for the fur trade in 1887 see Ibid., entry for September 24, and Dawson, "Report on an Exploration," pp. 28-29; and for the Hudson's Bay Company see his summary in Ibid., pp. 140-41.
- ³⁴ See, for example, J.C. Callbreath's, "Notes on the Tahl-tan Indians," in George M. Dawson, "Appendix II. Notes on the Indian Tribes of the Yukon District and Adjacent Northern Portion of British Columbia," in GSC, Annual Report 1887, Part I, Report B., pp. 195-99. Callbreath resided in the Telegraph Creek region on the Upper Stikine River for many years.
- ³⁵ See Ibid., pp. 191-213. In this ethnography Dawson included a census (pp. 206-7), and a vocabulary of Tahl-tan, Ti-tsho-ti-na, and Ta-gish words on pp. 208-213.
- ³⁶ Wright, Prelude to Bonanza, p. 207.

THE KENNICOTT NETWORK:
ROBERT KENNICOTT AND THE FAR NORTHWEST

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Since the purpose of this conference is to consider the scientific contributions of early Alaskan and Yukon explorers, it is appropriate that special and detailed consideration be given to the activities of Robert Kennicott. Affiliated with the Chicago Academy of Sciences and the Smithsonian Institution (based in Washington, D.C.), Kennicott contributed significantly to contemporary scientific knowledge on sub-arctic North America.

Born in New Orleans in 1835, by the age of twenty Kennicott had established himself as an expert of some renown, principally on snakes and mammal adaptations to different environments. In 1857, then twenty-two, he was given the prestigious, if poorly paid, task of creating a museum of natural history for Northwestern University. Kennicott's gregarious personality and considerable talents soon brought him to the attention of influential figures in the still embryonic American scientific community, including the assistant secretary of the Smithsonian, Spencer Fullerton Baird. Encouraged by Baird and others, and financed by the newly formed Chicago Academy of Sciences, Kennicott agreed in 1859 to undertake an extended zoological examination of the British North American sub-arctic, then very much a scientific terra incognita.⁽¹⁾

Enthusiastically supported by Sir George Simpson, Governor of the Hudson's Bay Company, Kennicott accompanied the Company's fur brigades from Red River (Winnipeg) to Fort Resolution in the summer of 1860. For three months, he used gun and trap to collect numerous species of birds, animals, insects and fish from the icy waters and stunted forests of the Mackenzie River basin. He carefully preserved and packaged his treasures, then sent them via H.B.C. fur brigade on their long journey to southern repositories. In August 1860, Kennicott pushed further north, his travels taking him as far as Fort Youcon (at the junction of the Yukon and Porcupine Rivers), where he passed the winter. The scientist remained in the district for

more than a year, a non-paying guest of the Hudson's Bay Company. He passed the time travelling along the trade route from Fort Youcon to the Peel River post (Fort McPherson) and continuing his natural history collections. Learning of his father's illness early in 1862, Kennicott hurriedly departed the north and returned to Chicago.

Anxious to return north, to a region holding many friends and considerable scientific attraction, Kennicott seized the opportunity to serve as Chief of Explorations for the Collins Overland Telegraph survey of 1864. Designed to link North America and Europe via a trans-Siberian telegraph line, the ultimately unsuccessful project provided a major impetus to northern exploration, bringing Kennicott, William Dall and others into the Alaskan interior. Unfortunately, tragedy befell the advance party before they reached Fort Youcon. Standing alone one evening on the banks of the Yukon River, thirty year old Robert Kennicott collapsed and died. His passing was mourned throughout the north by fur traders who had lost a valued friend and in the south by colleagues and scientists who regretted the death of a man of great potential, only partially realized.

Superficially, Kennicott's scientific contribution seems marginal at best. He published no books on his northern travels, one sure method of establishing one's credentials as an explorer or scientist (witness Frederick Schwatka). Furthermore, his tenure in the district was brief, he published few technical papers (and none on the north) and most of his personal records and observations were consumed in a Chicago fire. What he left were his personal zoological collections scattered through a number of repositories, an unpublished journal of his activities between 1860 and 1862,⁽²⁾ and scattered letters relating to his northern work.

It would, however, be most inappropriate to underestimate Kennicott's direct and, equally important, indirect contributions. During his Yukon and Alaskan travels, he amassed extensive collections of indigenous wildlife, many of which he shipped south for scientific observation and display. As a result of his endeavours, contemporary scientists had an important and hitherto unavailable record of the wildlife in the far

north-west. To focus on Kennicott's private collecting, however, is to miss the larger half of the story. By all accounts, Robert Kennicott was a notable individual, blessed with remarkable scientific intuition and a gregarious nature which allowed him to forge a number of lasting friendships with a wide variety of men and women. Throughout his career, both in Illinois and the north, Kennicott masterfully melded these talents to inflect others with his enthusiasm for zoological collecting. In a calculated and systematic manner, he sought to create an extensive collection network throughout the Hudson's Bay Company's territories. As Kennicott quickly realized, the company's officer corps offered excellent material waiting only to be molded to the right purposes. In general, they were educated, literate men, often suffering from intellectual starvation in their isolated northern posts. Kennicott worked assiduously and successfully to interest the H.B.C. officers in collecting, an achievement which ensured his contribution to scientific knowledge continued long after his unfortunate death.

Kennicott was able to construct his network because he carefully cultivated contacts during his travels, gave freely of his infectious enthusiasm and deliberately massaged the egos of the northern traders. By the time he left the Yukon in 1862 (and the comments apply equally to the Mackenzie Basin), Kennicott had established a surprisingly efficient network of zoological collectors, feeding the voracious appetite of the Smithsonian Institution and the other natural history museums throughout North America and Europe.

Given the appropriate context, it is easy to understand Kennicott's appeal. William Dall, Kennicott's colleague on the telegraph survey, described the young scientist's impact on the northern fur traders:

The advent of Kennicott, young, joyous, full of news of the outside world, ready to engage in any of their expeditions or activities and to take hardships without grumbling was an event in their lives. When he taught them how to make bird-skins and collect Natural History objects and showed them how, by means of their collections, their names would become known in the civilized world and even printed in books, they seized on the project with enthusiasm...For more than ten years, collections poured into Washington from the North until those who had been inspired by Kennicott retired from active service. (3)

In the northern Yukon, Kennicott left behind several such devotees. With two officers at Fort Youcon eager to continue, Kennicott directed James Lockhart to collect animals and birds (including a request for 5,000 eggs) while Strachan Jones was encouraged to concentrate on fish and insects.⁽⁴⁾ Though not as well educated as his Fort Youcon counterparts, James Flett of Lapierre House shared their enthusiasm for the project. Kennicott was less successful in his attempts to interest the Indians in collecting, a major disappointment given their excellent harvesting talents and wide range of travel. Despite his best efforts to impress upon them the "immense importance to science" of the collections, the natives seldom offered their catch without reasonable compensation.

Kennicott left little to chance in his attempt to establish a viable scientific network. After leaving the north, he maintained a steady correspondence with his friends. In his letters, the scientist repeatedly emphasized the importance of the group's endeavours and the renown the traders earned through their donations. Writing to R. Macfarlane, Kennicott commented:

Upon my word Macfarlane you and Lockhart quite make me ashamed of the little work I did in the R. District. I would rather have had the honor of contributing what you and Lockhart have to the history of Arctic zoology than to be a chief factor in the Hudson's Bay Company, or a member of Parliament. The latter would be jolly during life but in the former case my name would be immortal among naturalists. Indeed your names are already on record in many a public museum in Europe as well as America.(5)

Such were heady words for men in self-imposed exile in the north who, through Kennicott's efforts, were able to make a mark in the civilized world. This careful and continuing cultivation of able collectors worked remarkably well.

Similarly, and beginning even before he left the north, Kennicott coached his superiors at the prestigious Smithsonian Institution, particularly Professor S.F. Baird, on how best to encourage the fur traders. He suggested that Baird offer individual letters of encouragement, with Kennicott offering tid-bits of advice on the best means of appealing to each man. Concerning James Flett, whom Kennicott not unkindly called an "unadorned brick", the scientist wrote:

Please write to him and set him up a little - not failing to compliment his stepson William for his bird skinning as Flett is pleased with his being noticed...Only please remember to write within Flett's comprehension - he is a brick, but, as I've said, an unpolished one and is quite uneducated. (6)

Baird's letter had the desired effect. James Lockhart received one of the assistant secretary's missives, giving rise to Kennicott's comment that:

If your letter to the other officers did one half the good as the one to Lockhart did, you will have affected more for science by them that I shall in a year's work. Lockhart was pretty well primed for zoological operations, but your letter "touched him off", and quick as the spring boat was off for the outfit of the post he began and has been working not less eagerly than myself ever since. (7)

The decision to appeal directly and repeatedly to the traders' desires for recognition and fame worked remarkably well, effectively tying the Hudson's Bay Company officers to the Smithsonian and ensuring their continued collections.

By the time Kennicott left the north in 1862, a network of avid amateur zoologists was well established. Even without his continued presence in the area, the young scientist was convinced that a steady supply of zoological samples would accompany the H.B.C. fur brigades south. As

Kennicott noted in the summer of 1861:

The operations in zoology here are getting quite in earnest and we can now turn the crank and keep the 'wheels' you (Professor Baird) mention going from the Smithsonian with its long arms under your control. (8)

Kennicott's network performed much as he had planned. His amateur scientists continued to send collections to the Smithsonian long after Kennicott himself passed away. The resulting materials were notable not only for their impressive bulk, so large that they occasionally interfered with regular fur shipments, but also for their unique contribution to scientific knowledge. The collections provided by H.B.C. officers, for example, extended beyond an extensive array of birds, animals, fish and insects to include at least one mastadon tusk and a variety of fossils. In addition, the Smithsonian Institution and other natural and human history repositories utilized the Kennicott-constructed network for other purposes. In 1866, for example, the Smithsonian's Annual Report included extended and insightful commentaries on northern native populations by H.B.C. traders B. Ross, William Hardisty and Strachan Jones, all former friends of Robert Kennicott.⁽⁹⁾ Similarly, company officers sent numerous examples of native implements, artifacts and clothing to southern repositories, responding to a seemingly insatiable 19th century demand by museums for remnants of what many perceived to be a dying race.⁽¹⁰⁾

While it would be inappropriate to attribute all the zeal for collecting among H.B.C. officers to Robert Kennicott, it is obvious that his activities were instrumental in turning the fur traders' attention toward their natural and human surroundings. Equally, Kennicott more than any other demonstrated how men isolated by distance from the comforts and stimulation of Western culture could earn respect and admiration in the best intellectual and social circles through scientific collecting. Kennicott's principal skill, quite simply, was his ability to meld the traders' social aspirations with the needs of the southern scientific community. It proved to be a lasting and mutually profitable relationship.

Commenting on Kennicott's contribution, W. Dall noted:

Robert Kennicott, by his travels and collections added directly and indirectly perhaps more than any other to the riches of the Smithsonian collection. (11)

It is equally true that through his personal studies and those maintained through the network he created, Kennicott offered more than any other 19th century scientist to the scientific and ethnographic knowledge of the far northwest. The greatest misfortune - beyond his untimely death which prevented more extensive study - is the limited appreciation of Robert Kennicott's contribution to the natural and human history of the north.

FOOTNOTES

- ¹For an overview of Kennicott's career, see James H. James, The First Scientific Exploration of Russian America, and the Purchase of Alaska (Evanston: Northwestern University, 1942).
- ²Reprinted in ibid.
- ³W.H. Dall, Biography of Spencer Fullerton Baird (Philadelphia: J.B. Lippincott, 1915), pp. 334-335.
- ⁴Smithsonian Archives (hereafter Kennicott Letters), Record Unit 7215, Collected Notes, Lists and Catalogues on Birds, 1839, 1849-1851, 1855-1965, Box 15, Kennicott #8, Kennicott to Baird, 23 June 1861.
- ⁵James, The First Scientific Exploration, p. 11.
- ⁶Kennicott Letters, Kennicott to Baird, 21 January 1862.
- ⁷Ibid., 23 June 1861.
- ⁸Ibid.
- ⁹Smithsonian Institution, Annual Report, 1866 (Washington: Smithsonian, 1867).
- ¹⁰The Annual Reports for approximately 15 years after 1860 included a reference to continuing receipts from Hudson's Bay Company traders.
- ¹¹James, p. 11, footnote 2.

EARLY EXPLORATIONS OF NESKETAHEEN AND THE DALTON TRAIL:
AN ETHNO-ARCHAEOLOGICAL PERSPECTIVE

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The following statements are relevant to the topic of my presentation:

"Doctor Livingston, I presume?"

"Do you know how old Nesketaheen is?"

"When Crow make him, that's the time since."

This story could start in Africa or with the birth of Crow, depending on one's perspective. The act of discovery of a continent, land or place is a tricky phenomenon, for in most cases, we "discover" not a barren, deserted place but a place with people already there. We then proceed to "discover" them, which usually entails figuring out who they are (in a most superficial way), and then trying to change them to be more like us, using missions, political pressure, and trade. From the other perspective, that of those who are "discovered" - they do not feel that they were ever lost or unknown. Their place in the world is usually firm and their sense of history goes back to a past when all things were first created.

If there is any glaring fault in most historical accounts of discovery and exploration it is that they are usually told from one perspective - that of the "discoverer", in most cases Euro-Canadian/American. Usually we can only obtain this perspective because this is the one which is written down, documented in some lasting fashion, to be dug from a dusty archive in subsequent years by an excited historian. The evidence from the other side (that of the "discovered") is of a different nature. It is carried orally, with more regard for seasons than for actual dates and is lasting only insofar as it is told and remembered by the next generation, or is written down by researchers. It is also carried in the landscape - in the name of places on maps and in the mute testimony of archaeological and cultural remains. In many cases the perspective of the "discovered" is

harder to come by but it is the more valuable for its scarcity, as a precious metal shines more brightly among common rocks. The "discoverer" and the "discovered" perspectives make up a whole history. One is not complete without the other.

I will try briefly to present to you a history of Nesketaheen and the Dalton Trail based on my research conducted during the Nesketaheen Village Preservation and Survey Project (NVPSP), an ethno-archaeological study I did in 1979 for the Champagne/Aishihik Band. My bias will be in telling more of the story from the perspective of the "discovered", the Indian people in the Southwest Yukon, ancestors of the present day bands. This was the focus of the investigation and is one that is less well known to most people.

Nesketaheen is an historic Indian village lying at the southern end of the Shakwak Valley which separates two major physiographic areas, the coastal St. Elias mountains to the west and the Yukon Plateau to the north (Johnson and Raup 1964:11). It is within the Tatshenshini River valley on a drainage called Village Creek. The creek is very shallow (30cm to 1m deep) and approximately 1-2 meters wide. It falls at a fast rate over a very rocky bed. The creek serves to divide the village from the cemetery which is in a meadow to the west. The entire site covers over 300 square meters on an open terrace above the present floodplain of the Tatshenshini River.

The name Nesketaheen is a Tlingit word describing the creek and village and is translated as spruce/place/dammed river (McClellan 1975:33). The Southern Tutchone named it Thay-da-chew-wa or stones-on-top of water (McClellan 1975:33) and alternatively Sa-oo-shay (O'Leary 1979:72). A section of the Dalton Trail, which was originally a Southern Tutchone/Tlingit trading trail was located northeast of the site and was followed and mapped for approximately 4.2 km. Various isolated cultural artifacts and two historic sites were located in this section.

Nesketaheen and the surrounding area have been known and lived in by the Southern Tutchone for at least the last two hundred years and was probably occupied by the ancestors of this group since the Paleo-Indian migrations into the Southwest Yukon approximately 8000 years ago. In 1977, salvage archaeology was done by Dr. Richard Morlan at a site north of Nesketaheen which dated to the late eighteenth/early nineteenth century (Morlan, personal communication). A brief survey done by Gates and Roback in 1972 at Nesketaheen revealed artifacts from the turn of the century (1890-1910) (Gates and Roback 1973:35). My own survey revealed evidence of pre-Christian gravesites and adze-cut stumps. Also, I worked with an elder of the Champagne/Aishihik band who located an area which he described as "the real old village". It contained the surficial remains of an early coastal-style house (O'Leary 1979).

Nesketaheen is located in the boundary area between the regions occupied by coastal groups and interior Athapaskans. This site, and sites further south along the Tatshenshini such as Nuquik (Nuke-ki-eek) and Gashurwa (Ga-shoe-wa) display a mixing of coastal and interior cultures during the nineteenth century. They also present real possibilities for answering questions about early migration patterns between the coast and the interior. Though Nesketaheen acted as a trading center in the nineteenth century, it was first and foremost a fishing village where the early runs of sockeye salmon could be caught. Stories abound in the oral histories of "meeting the fish" very early in the season at Nesketaheen and sites further downstream. The advent of salmon fishing, allowing for fluctuations in glaciers (Lindsay 1975:2367), was an early adaptation for bands of Southern Tutchone. Contrary to MacNeish's position (1964), early salmon fishing sites can and will be found within the Tatshenshini/Alsek drainage, when and if systematic archaeological/ethnographic survey is undertaken.

If the history of Nesketaheen begins with the creator-Crow-from the perspective of the "discovered" people, it begins for the "discoverer" with Mr. Edward James Glave. Though the Alsek/Tatshenshini drainage was first mentioned by La Perouse in 1786 (Marcus 1906:338), the village of

Nesketaheen was not noted until 1869 by George Davidson who elicited geographical information from Chief Kohklux, a Tlingit Chief imprisoned at Klukwan, near Haines, Alaska (Davidson 1903:76). Kohklux was persuaded to draw a map of the southwest Yukon with the route to and from Fort Selkirk, which he and his followers had destroyed in 1852. Though Davidson noted Nesketaheen on the map, he never went there. Aurel Krause, a German geographer, travelled as far as Lake Arkel (now Kusawa) which is thirty miles east of Nesketaheen, but his Tlingit guides took him no further.

Enter Edward James Glave. Glave began his role of "discoverer" in Africa. He served under Henry Stanley (of "Dr. Livingston, I presume" fame), on the Congo River. His fame as a lecturer on exploration brought him a job as a correspondent to Frank Leslie's Illustrated Newspaper in 1890. He landed in Haines, Alaska, with a mission to explore the Tatshenshini/Alsek drainage to its mouth at Dry Bay, Alaska, an area "undiscovered" by whites because of a blockage by the Tlingit.

The Tlingit interaction with interior Athapaskans took the form of a trade monopoly. The Tlingit served as the middlemen-entrepreneurs between whites (first Russians, and later Americans and Canadians). They developed a flourishing fur trade. Informants, who were youths at the turn of the century, recalled the exorbitant prices charged for trade items. A gun was worth its height in beaver furs (McClellan 1975:110, O'Leary 1979). Routes into the interior were jealously guarded by the Tlingit, and few, if any Athapaskans reached the coast directly before 1890. How Glave found a willing guide is a mystery. A Chilkat Tlingit named both "Schwatka" and "Indiank" was persuaded to accompany the party into Frederick Lake, further into the southwest Yukon than any other whiteman had gone before. There the Tlingit left Glave and his companion, Jack Dalton, described by Glave as "...a man of pluck and energy..." (Glave 1890:312). A Southern Tutchone family fishing at the lake agreed to guide them to the headwaters of the Tatshenshini River. Throughout his travels on the Tatshenshini, Glave incorrectly identified it as the Alsek (Tero, 1973:180).

During the whole of Glave's trip, Indian people served as guides; without them, Glave could not have been, in his own words, "the first white(man) to erase from the map the hypothetical and fill up the blank area with mountains, lakes and rivers..." (Glave 1890:432).

After a journey of several days they "arrived on the brow of a hill overlooking the settlement called Neska Ta Heen..." It was on this hill that the first section of the Dalton trail was found on the NVPSP survey. A photograph of the hill taken eight years later by a tourist named Henry Dow Banks documenting the trail and the village was found at the Yukon Archives. Glave revisited Nesketaheen one year later in 1891 but used a trail south of the village which necessitate crossing the Tatshenshini. Thus there were at least two separate Indian trails leading to the site. On Glave's first trip he found the village strangely deserted, the people being sixty miles downriver at other fish camps, including the aforementioned Nuquik (Nuke-i-eek). Only one house was occupied by Chilkat Tlingit traders who arrived to collect furs caught that winter.

Glave found a dozen houses built of heavy planks, hewed into shape by a native adze, each with a smokehold in the roof covered by heavy shingles (Glave 1890:310). The NVPSP located the remains of thirteen structures, two of which met this description except for the modifications of the use of milled lumber and a stove. Both houses were built subsequent to Glave's visit by Tlingit who had taken up residence in the interior. Glave also commented on the cemetery, which contained painted gravehouses. The remains of 36 gravehouses or fenced-in gravesites were located on survey. These represent what Glave saw and graves of the immediate relatives of current Champagne/Aishihik band members, as the cemetery was in use within the last fifty years. Glave also described cremation sites, eight of which were found on survey outside the main cemetery. Unfortunately, there was evidence of vandalism at this spot and at the village as well, most of which took place in conjunction with the building of the Haines Road and with the intrusion of workers for the Jackpot Mine who actually took up residence at the site during the 1960's. Each year that I checked the site, in 1979, 1981 and 1982, vandalism had occurred.

Though Glave had described the site as open, and elder informants remembered being able to see all the way to the Tatshenshini from Nesketaheen, the area is now heavily covered with poplar. The overwhelming presence of poplar suggests that the area is in the first stage of succession on the floodplain but points also to the possibility of a recent fire (100 to 150 years ago).

For his time and training, Glave was a fair ethnographer. He recorded the Athapaskan and Tlingit names for features in the landscape; as he wrote, "the retention of their native names is an excellent medium through which to learn their history" (Glave 1890:286).

His description of salmon fishing on the Tatshenshini and other drainages, and of the seasonal round of subsistence activities, are accurate and informative. His descriptions of the people at Nesketaheen included information on the chief War Saine as well as sketches of other individuals. McClellan used these illustrations with Southern Tutchone informants in the late 1940's and 50's. All were identified by the informants (McClellan 1975:28). Informants questioned by the NVPS, without being shown any illustrations, reported the name of the chief War Saine at Nesketaheen at the turn of the century (O'Leary 1979).

Glave's visit to Nesketaheen was resented strongly by the Tlingit traders even though he only brought small gifts and no trade items into the area. The Tlingit were justified in their suspicion and resentment because Glave's presence in 1890 and 1891 signaled the end of the isolation of Southern Tutchone. In the next few years Glave would leave to go back to Africa but his companion Jack Dalton would return to build a trading post and begin to widen the Southern Tutchone/Tlingit trail to accommodate the miners eager for gold, charging them an exorbitant fee for its use.

In the winter of 1898 Arthur Thompson made a trip in the Yukon visiting Dalton's Post, located approximately 3/4 mile east of Nesketaheen. There he and his party stayed at the store of Ike Martin, who was employed by Dalton. The store "traded primarily with the ... Indians" (Thompson 1925:107). A Northwest Mounted Police station was located at Dalton Post during the Goldrush. Inspector A.M. Jarvis reported that Nesketaheen had a population

which numbered between 100 and 150 people (Jarvis 1899:104). By 1904 the population had been reduced to 69 in the official census (Wood: 1905:19). It is not known if this census counted only the native population and/or whites. One interesting fact learned during the NVPS was the demography of people at the site of Dalton Post, which was also mapped and recorded. Indian families lived at Dalton Post when it was first founded, moving in as a unit or in several instances intermarrying with whites. The site of Dalton Post is not simply a white trading post but a mixed community of Indian and whites. Several stories exist about the transfer of political and military power into Indian hands (O'Leary 1979).

New research addresses the question of abandonment of the Nesketahen area. McClellan feels that the bulk of the Nesketahen/Dalton Post population moved to the present settlement of Champagne when Jack Dalton built a new post there in 1902. Abandonment of the area was also encouraged when the B.C.-Yukon border was established in 1908, and Yukon Indians were no longer allowed to hunt in B.C., less than 10-15 miles south of their village. However both artifactual and ethnographical data collected during the survey show that Nesketahen was occupied on a regular basis through 1918. With the demise of Dalton Post, and after whites had moved out, Indian families continued to live there, some as recently as the 1940's. There was also a great influx of Indian people into the area when a Nesketahen resident named Paddy Duncan found gold at Squaw Creek in 1927. A large fish camp on the banks of the Klukshu in that area was found by the survey. Other gold mining operations in the area in the 1930's and 40's were worked by Indians residing at Dalton Post. One Indian family used their horses to pack supplies from Haines for both miners and Indian families in the area.

The history of the site of Nesketahen and its surrounding area is fascinating. It is an ancient history and an ongoing one. Members of the Champagne/Aishihik band continue to fish the waters of the Tatshenshini, Village Creek, and the Klukshu River. It is a history of the "discovered" rather than of the "discoverer", a history for the most part that has been overlooked. With the current vogue in historical and cultural resource management for the development of a "theme" in presenting historical

resources, we overlook the richness and importance of the underlying development of that theme. The recent emphasis by both the Canadian and American governments on the development of a Gold Rush "theme" for parks and recreation will obscure the importance of the history of the Indian people and their way of life. In regard to Nesketahen, only a small part of the research has been done. Its preservation lies in the hearts and minds of those who lived there and is the responsibility of those who are or will be its caretakers. In my view, if one word could describe a history it should be "pentimento" - the layering of the canvas with paint so that when one begins to scrape away at the surface, a whole different painting is revealed.

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CLOTHING THE EARLY EXPEDITIONS:
AN ESSENTIAL CONTRIBUTION BY THE NATIVE SEAMSTRESS

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A study was initiated in 1980 to determine the types of clothing worn by British, American and Canadian explorers in the Canadian Arctic prior to 1920. Using unpublished personal diaries and journals, first person published accounts, sketches, photographs and examples of surviving clothing artifacts, the researcher sought information on the total clothing assembly being utilized by non-Native explorers.

The clothing information that could be gleaned from these historic documentary sources was coded and entered into a data file that could be manipulated by using SPSS (the Statistical Package for the Social Sciences), which is available through Computing Services, University of Alberta. The recording system developed for studying the clothing used by arctic explorers, as well as the strengths and weaknesses of this approach, are discussed in Schweger (n.d.).

Information was gathered on the use of various clothing items in relation to each other. Clothing for the upper torso, lower torso, hands and feet was noted and particular attention was paid to the number of layers actually worn. This was done so that future studies might consider "clo factor", that is, the amount of thermal insulation provided by a particular clothing assembly, in accordance with the research conducted by Rogers and Sutherland (1971) and Auliciems, De Freitas and Hare (1973) on cold weather clothing requirements. Secondly, the design features of the various types of footwear worn by arctic explorers was emphasized. It was felt that utilization of a particular style would give information on cultural borrowing as well as indicate the advantages of hard vs. soft soles and commercially tanned leathers vs. Native-tanned hides for use in northern environments. Thirdly, clothing and footwear procurement, that is, whether items were commercially manufactured and brought from home, made by the explorers themselves, or were made by and obtained from Native seamstresses was considered. It is the latter topic that this paper will emphasize.

It is clear that Europeans were quite aware of Native clothing practices centuries ago. Biddle (1832:241) wrote that "it is known from Lord Bacon... and the early annalists, that the vessels which sailed with Cabot were fraught with gross and slight wears for commerce with barbarous people"; thus it is conceivable that clothing was obtained by British explorers from Native women in 1497 and 1498 when John and Sebastian Cabot were conducting a search for the Northwest Passage. There is definite evidence that clothing was obtained by barter in the 16th century. Frobisher (1938:49), who made three voyages to the northeast coast of Canada in the years 1576, 1577, and 1578, wrote that he and his men obtained coats of seal and bearskin from the Native people. It is not known if acquisition of clothing from Native seamstresses was important to the success of the voyage, however.

It is clear that clothing made by Native women was of great importance to survival of many exploration parties in the early 19th century. British explorers commonly mention the use of Native-made footwear or footwear that utilized native design in their writings. For example, during the first land journey of John Franklin, 1819 through 1821, the men appear to all have used Native-made footwear whenever it could be made available.

Franklin wrote:

The general dress of the winter traveller is a capot, having a hood to put up under the fur cap in windy weather, or in the woods, to keep the snow from his neck, leathern trowsers and Indian stockings, which are closed at the ankles, round the upper part of his moccasins, or Indian shoes, to prevent the snow from getting into them. Over these he wears a blanket, or leathern coat, which is secured by a belt round his waist, to which his fire-bag, knife, and hatchet are suspended. (Franklin 1969:94-95)

Franklin's companion, Robert Hood, also described the preferred footwear for overland travel, saying:

The shoes worn by both natives and Europeans are made of moose skin, and tied with thongs above the ankles. (Hood 1974:74)

Expeditions that were travelling across land in the early 19th century had very quickly discovered that loose fitting, light-weight footwear was most suitable for the environmental conditions found in the North. Though this was made by the men themselves when materials were available, they preferred to obtain Native-sewn items. As a result, the heavy footwear that had been brought from home was abandoned because of the difficulty it caused while walking and the logistic problems encountered when carrying the types of heavy supplies provided by the British Admiralty for arctic expeditions. In fact, caches of clothing left by British explorers in the North, such as found in the McClintock Cart Site on Melville Island (Dempsey, n.d.), show that heavy leather footwear was likely a first item to be abandoned if travel by land became difficult.

Expeditions that travelled by ship were able to carry several years worth of supplies on shipboard for use while in the Arctic. Even though many published reports indicate that large quantities of commercially manufactured British-made footgear were sent with the men, close fitting leather footwear was often not suited for arctic conditions. A letter written by Doctor Fisher, in 1820, shows that expedition leaders had generally come to recognize the causes and means for prevention of frequent frostbite. He wrote:

In the end of last year and the beginning of this, a number of our people were what is called frost nipped; frost-bitten is a rather alarming idea. These accidents generally happened when they were taking brisk exercise in walking or running on shore; the very time, one should have imagined, when they were the least exposed to them; and the very means which one should have adopted to prevent such accidents. The case, however, was at last discovered to be the harshness of the boots worn by the men, which interrupted the circulation of the blood; and when in their place easy boots, made of canvas, and lined with flannel, or other woollen stuff, with soles of raw hide, were used, it is almost incredible how few frost-bites occurred. (Anonymous, 1821:67)

In the early decades of the 19th century the British Admiralty generally furnished one suit of necessary cold weather clothing for men on shipboard. Additional needed clothing was purchased from supplies kept on shipboard

or from Natives at stops enroute to the final destination. Authors commonly mention trading for everyday clothing needs, as well as depending on semi-established trading contacts for re-supply. For example, the John Ross party, in the early 1830's, conducted much trade with Native people to obtain clothing suitable for arctic conditions. In the Holsteinburg area of Greenland, the men furnished themselves with boots and gloves in exchange for cotton handkerchiefs and old clothes. While in the ship's headquarters at Felix Harbour, Boothia Peninsula, contact between the British party and the Inuit remained frequent and trade for clothing was of importance. Each party received goods and Ross was cognizant of the mutual dependence of his men and the Inuit in the trade relationships. Inuit dresses, sealskin jackets, boots, gloves and animal skins were obtained in trade (Ross 1969:70, 275, 279, 286-7, 320, 577).

The Ross expedition appears to have made greater use of Native-crafted clothing than the British expeditions to follow. The best known expedition of the 1840's was the John Franklin party, which was lost and, as a result, received enormous publicity. It had left England with 129 men and two ships provisioned for three years in the Arctic. Its disappearance stimulated the formation of many search expeditions, most of whom were supported by the British government. These expedition parties combined the search for Franklin with the search for the North West Passage and they engendered much public interest. Since England was sending out so many men on large expeditions, development of clothing specifically for Arctic expeditions occurred. Hooded fur caps, snow goggles, and a variety of types of easy-fitting footgear were developed. While footwear tended to be loose fitting, clothing for the torso continued to be more closely tailored to the body than was the case with most Inuit or Indian designed clothing. Sketches of the clothing sent out on British expeditions can be found in articles in journals of the times (e.g. The Graphic Arctic Number) or can be seen on display at the National Maritime Museum, Greenwich, England.

On the mid-19th century British Arctic Expeditions the quantity of ready-made clothing and materials for constructing needed items by expedition

members on shipboard was considerable. Lists of supplies kept on the ship or placed in caches such as at Mercy Bay or Dealy Island in the western Canadian Arctic indicate the variety of textile and leather items available for use by the men on shipboard to manufacture their own clothing needs (see Arctic Blue Book 45245:74-86, 108).

Because the British Arctic Expeditions had become very large and fully equipped, Native-made clothing became less important for supplying the Admiralty sponsored expeditions leaving England. Nonetheless, a high value was placed upon obtaining Native-made footwear. As late as 1940 (Lloyd 1940: 269-70), publications relevant to the British shoe trade admitted that no tanning techniques had been developed in the commercial leather industry which could match the hides tanned by Native women for arctic conditions.

Because of the large number of men present on these British expeditions, it was impossible to outfit all of them with footwear by stopping at various settlements. Instead, the Admiralty sought to purchase footwear in bulk from agents, rather than by having expedition members make personal contact with Native communities. The explorer Francis McClintock in a report to the Admiralty wrote:

After the thaw has commenced, the Esquimaux boots are superior to everything else. They can be obtained from St. Johns, Newfoundland, through the Messrs. Hunt, 34, Great Winchester-street; but at least ten weeks notice should be given. It is also possible they may be obtained in time for a Barrow Straits Expedition, from the Hudson Bay districts, through Mr. Roberts, 32, Moorgate-street. It is difficult to get boots of this description sufficiently large for Europeans. (Great Britain, Parliament. 1852:181-91)

This switch from dependence on Native seamstresses to commercial suppliers and purchasing agents by ship-based expeditions was not the case with land-based exploration operations or when naval expeditions were to make long land marches, however. For example W.J.S. Pullen, writing to the Admiralty from Fort Good Hope, N.W.T., says that they are able to proceed on foot

for which I think we cannot be better provided all hands being equipped with dresses and moccasins of moose leather, than which nothing is better adapted to resist the icy blasts of the frigid north, requiring less under clothing, which should always be of flannel or woollens, except for the feet, duffle or blanket wrappers being preferable to any kind of stocking, and thus the men are less tightly and cumbersomely clad than with the usual provisions of cloth garments, English leather shoes, etc. (Pullen 1979:90)

This switch in policy from partial dependence on Native seamstresses to near total dependence on commercial suppliers, mid-way through the 19th century, was not the case with American ship-based expeditions to the North. The Americans, to a lesser extent than the British, had already been active in the North for a century. In 1729, 1753 and 1758 Henry Atkins had sailed from Boston on whaling and trading expeditions (Cooke and Holland 1978). Trading was done with the natives in Labrador and probably on the coast of Newfoundland. In 1753, Benjamin Franklin and others sponsored a Northwest Passage expedition, led by Charles Swaine and accompanied by 14 others, with one stated purpose being to "cultivate a Friendship with the Natives" (Solis-Cohen 1943:25).

Though pre-1850 American expeditions to the North were generally smaller in scope and scale than British expeditions, in all likelihood, clothing procurement and utilization did not differ significantly between the two nationalities. Both appear to have taken commercially manufactured woolen clothing along with them, supplementing this with Native-made clothing. After 1850, differences in clothing strategies between the British and American explorers became accentuated, however.

Generally, American expeditions remained smaller and many were privately funded. For example, though the second Grinnell expedition (1857) was under the auspices of the U.S. Naval Department, the personnel consisted of ten Navy men and the rest volunteers. Supplies not taken from New York were obtained in St. John's, Newfoundland. The equipment taken was very simple compared to that of a British expedition. Clothing was primarily of woollens, with skins and sewn fur garments being secured at stops along the Greenland coast. Kane (1857:165, Vol 2) described his own

clothing as "a pair of sealskin pants, a dog-skin cap, a reindeer jumper, and walrus boots." Kane wrote:

I also purchased all that I could get of the crimped sealskin boots or moccasins, an admirable article of walking gear... (Kane 1857:29, Vol 1)

Kane stressed the simplicity of strategies used on sledging trips:

The personal equipment of the men was a buffalo robe for the party to lie upon, and a bag of Mackinaw blankets for each man to crawl into at night. India rubber cloth was to be the protection from the snow beneath. The tent was of canvas, made after the plan of our English predecessors. We afterward learned to modify and reduce our travelling gear, and found that in direct proportion to its simplicity and our apparent privation of articles of supposed necessity were our actual comfort and practical efficiency. Step by step, as long as our Arctic service continued, we went on reducing our sledging outfit until at last we came to the Esquimaux ultimatum of simplicity, raw meat and a fur bag. (Kane 1857:114, Vol. 1)

This same approach, used for outfitting the American Grinnell expedition in the 1850's, is seen in the 1860's through the writings of Charles Francis Hall, who combined the search for Franklin with whaling activities. Native families lived on shipboard with expedition personnel to dress and sew sealskins in order to make clothing for the men, as well as keeping clothing in repair (Hall 1970:113, 124, 210). For example, on June 29, 1861, Hall wrote:

Puto and Miner's wife have been mending my kumings (native boots) this morning, that I may go dry-shod to the vessel, as we anticipate water travelling. (Hall 1970:297)

In addition to obtaining Native-made footwear, it was common for men on the American sponsored expeditions to wear clothing that, if not made by Native seamstresses, was made on location by the men themselves. While British expeditions tended to have a tailor and shoemaker on board to facilitate necessary clothing construction, the Americans more often attempted to approximate typical Native clothing design when

doing their own sewing. For example, the American geologist, Ernst Leffingwell, who worked in the western Arctic after the turn of the century, sewed his own headgear and "parkies". His preference, for cold conditions, was a particularly designed jacket that he describes as follows:

wgt 7 lbs and long enough for two, can fit arms inside sleeves and warm hands on body and arrange dress with ease and comfort with bare hands. Can almost dress and undress inside of them. With belt on they are very warm; without belt the cold air comes up inside and keeps body cool and ventilated. Wore only a sleeveless under-shirt weight 1 lb. and flannel shirt weighing 1 1/2 lb underneath. (Leffingwell, unpublished diary, January 20, 1901)

The importance of the Native seamstress in furthering the goals of northern expeditions is best demonstrated in writings of those men competing in their bid to be the first to reach the North Pole.

Frederick A. Cook writes of their preparations saying:

Many many journeys were taken to secure an important supply of grass to pack boots and mittens...Each local group of natives was to perform some important duty, suited to its available resources, in gathering the tremendous amount of material required for our trip... Thus, in one way or another, every man and woman and most of the children of this tribe of two hundred and fifty people were kept busy in the service of this expedition...The women of the tribe...to them fell the task of assisting in drying fur skins...making our clothing. Throughout the entire days they sat in their snow and store houses, masses of ill-smelling furs before them, cutting the skins, and sewing them into serviceable garments. (Cook 1913:84-5, 90-1)

The members of the North Pole expedition led by Robert E. Peary were also dependent on the Native hunters and seamstresses in preparing their clothing for the journey towards the Pole. They had stopped at Cape York, Greenland, to pick up 39 Native helpers to go on shipboard with them. Matthew A. Henson, who was Peary's main assistant wrote:

Many and many a time, for periods covering more than twelve months, I have been to all intents an Esquimo, with Esquimos for companions, speaking their language, dressing in the same kind of clothes. (Henson 1969:6-7)

The clothing for the trek to the Pole was made on board ship by Native women while the ship was in winter quarters at Cape Sheridan, on north-eastern Ellesmere Island. Photographs that were taken at the time of Peary's ascent to the North Pole suggest that every bit of visible clothing being worn had been prepared by Native seamstresses.

It is clear that early 20th century explorers such as Leffingwell, Cook and Peary, being aware of the experiences of previous Arctic expeditions, opted for Native-made clothing, finding traditional Native materials and design most suited for this purpose.

The number of groups involved in exploration of the Canadian North increased at a rapid pace in the 20th century. The Canadian Arctic Expedition, which lasted from 1913 through 1918, brought together men from a variety of backgrounds to conduct anthropological, geological and zoological research in the western Arctic. The leader, Wilhjalmur Stefansson strongly believed that Native-made clothing was far superior to any made commercially. Nonetheless, a large quantity of clothing and textile supplies were ordered for the expedition; based upon the Anderson papers (Ottawa, Public Archives of Canada, Anderson Papers), it appears that the greatest quantity of commercially made garments were obtained from Jaeger's Sanitary Woolen System Co. of Montreal. Clothing purchased from this company, along with several other manufacturers, was intended for use by expedition members.

It is not clear how clothing and textile supplies were divided between the three Canadian Arctic Expedition ships as they sailed north for Herschel Island. This expedition, though renowned, was not an entirely successful venture because the ship Karluk was isolated from the others, became trapped in the ice, and disintegrated in January, 1914, making it necessary for the men to abandon the ship and set out on foot. Few men

survived. The diaries of William McKinlay (Ottawa, Public Archives of Canada, McKinlay diary) list the Jaeger clothing available, adding that they would:

use as much of the woollen clothing as possible in camp, but we must leave much of it behind, for we will not be able to carry it along, altho' it would make admirable summer wear. (McKinlay Diary, Anderson Papers)

As one reads the entries by McKinlay in his diary, one realizes that maintaining serviceable footwear was the major preoccupation of the survivors and that without the aid of the Native woman, Kiruk, who was accompanying them, it would have been an impossible task. Kiruk spent all day, each day, making footwear for the men.

Many writers have concluded that Inuit clothing is perfectly designed for cold weather conditions. It may or may not be, but it does appear that the clothing designed by manufacturers in the 20th century specifically for cold weather expeditions successfully utilized a number of design principles found in Inuit and Athapaskan clothing.

Clothing and footwear is now being manufactured that minimizes the "hobbling effect", that is, it is designed so as to not greatly inhibit body movement. The heavy seaboots and tight fitting Blucher boots left behind in caches by 19th century British explorers, when Native-style footwear could be purchased or duplicated, indicate the unsuitability of heavy leather footwear for land conditions in the North. Expedition clothing collections (for example, #51/1/14ab or #992, Scott Polar Research Institute, Cambridge, England) hold examples of light-weight, soft-soled footwear (that can be turned inside out to dry), which were made by men on shipboard from hide and fabric. It is not surprising to find that the men preferred the lighter weight footwear since present day studies indicate that the energy cost of weight carried on the feet far exceeds energy used to carry the same amount of weight on the back or in the hands.

The "hobbling effect" can also result from certain combinations of clothing worn on the upper and lower torso when materials are highly textured; this may cause increased energy expenditure beyond that associated with weight per se due to the friction between layers.

A factor that can be of importance in estimating the hobbling effect is whether the total clothing assembly utilizes single or multiple layering. The number of layers worn has been found to directly relate to the amount of thermal insulation provided by a total clothing assembly (Rogers and Sutherland 1971). Multiple layering permits entrapment of air for insulation, as well as providing flexibility when environmental conditions or energy expenditure of the wearer changes.

The British expedition members tended to utilize the concept of multiple layering; thus, to regulate body temperature a layer was added or removed. The manner of dress used by Natives and by those American explorers who utilized Native-made or styled Inuit and Northern Athapaskan clothing employed the concept of multiple layering less often. Rather, the presence or absence of hair on the hide and whether the fur side was worn inside or outside determined the degree of insulation provided by the garments. The entrapment of air to provide thermal insulation is thus controlled on traditional Native garments by the fur or lack of fur that is present for trapping air, rather than the number of layers.

Instead of shedding garments to control body temperature, Native clothing design utilized the "chimney or venting effect". Such garments were cut with wide necks so that the garment could be pulled away from the neck to vent off body heat and moisture. The Native parka was also cut to fit loosely around the torso. American explorers often commented on this feature as being important and wore the parkas either belted or unbelted to aid in the regulation of body temperature. As Leffingwell pointed out, this loose cut also made it possible to place the arms and hands inside the garment near the torso when necessary.

Generally, although many exceptions can be found, the Americans followed the Native practice of using pull-over garments with dropped or non-existent shoulder seams, while the British expedition clothing designers tended to make coats with front buttoned openings and the standard European shoulder seam. British clothing utilized more woolens and canvas, while American clothing utilized more furs. This difference may be more a reflection of the size of the crews than of actual preference. Both groups adopted the Native practice of providing sufficient ease or looseness so as not to constrict movement.

As one traces the design of clothing provided to explorers through the decades, one can see the influence of Native design practices. However, it is in the actual provision of clothing to men on the expeditions that the Native seamstress has failed to receive acclaim. Those expeditions that succeeded in achieving their goals very commonly did so because of the provision of skins by the native hunters and the processing of these skins and sewing of clothing by Native women. Without the contribution of these seamstresses, it is doubtful that the accomplishments of many well-known explorers would have resulted.

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THE GEOLOGIST
EARLY DAYS IN ALASKA

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The history of exploration in Alaska is well documented, as are the explorers. Men like George Stoney, Hudston Stuck and Alfred Schanz left historians with a unique record of Alaska before the turn of the century. But one interesting aspect of Alaskan exploration has been overlooked - the role of geologist as explorer. Between 1898 and 1930, geologists with the U.S. Geological Survey, in the course of their scientific duties, explored thousands of miles of uncharted land in Alaska. What made these geologists' work most compelling was the role they acquired as chroniclers of Alaskan life. Those intrepid geologists left a fascinating account of life in Alaska spanning thirty-two years. Accordingly, the professional papers and bulletins written by the geologists are a valuable cache of historical information and are worth investigating.

The year 1898 was significant for Alaska, because for the first time since its purchase in 1867, the territory demanded national attention. Attention was focused on gold. With mineral resources as the impetus, the U.S. Geological Survey embarked on its first field season in Alaska in the spring of 1898. From most accounts, the first season was a success. According to Alfred Brooks (1953:283)

The first season's work resulted in about 3,000 miles of instrumental traverses, with reconnaissance maps of an area of nearly 30,000 square miles, besides a more accurate survey of about 2,000 square miles.

That geologists were able to complete such in-depth work was remarkable in light of the environment and lack of logistical support capabilities. There were no public roads, thus, supplies had to be shipped from Puget Sound ports, to be further transported by horse and foot from south-eastern Alaskan ports.

The most comprehensive survey of 1898 was led by Joseph Spurr and covered the Susitna River region of south-central Alaska. Spurr and his men ascended the Yenta, a branch of the Susitna, and then portaged supplies and equipment to the Kuksokwim River, descending it to the mouth, then re-turning to Cook Inlet by way of the Alaska Peninsula. In that same field season, Alfred Brooks began the first of twenty-four surveys he was to complete during his career in Alaska. Brooks explored the two major southern branches of the Yukon River - the Tanana and White Rivers. Excerpts of his survey follow:

Our party, with the three other expeditions of the Geological Survey, embarked at Seattle on the U.S. Gunboat Wheeling on the 5th of April, and after a delightful voyage amid the grand scenery of the inland passage was landed at Skagway on the 11th of April...Our party and Mr. Barnard's crossed the White Pass on the snow about the middle of April and made their way to Bennett City, at the head of Lake Bennett, in British Columbia. Our outfit, including canoes and five months provisions, was hauled to the foot of the pass, and finally carried the rest of the distance by dog teams and pack animals. (Brooks 1900:431-32)

Brooks also writes of the perils of geological survey work:

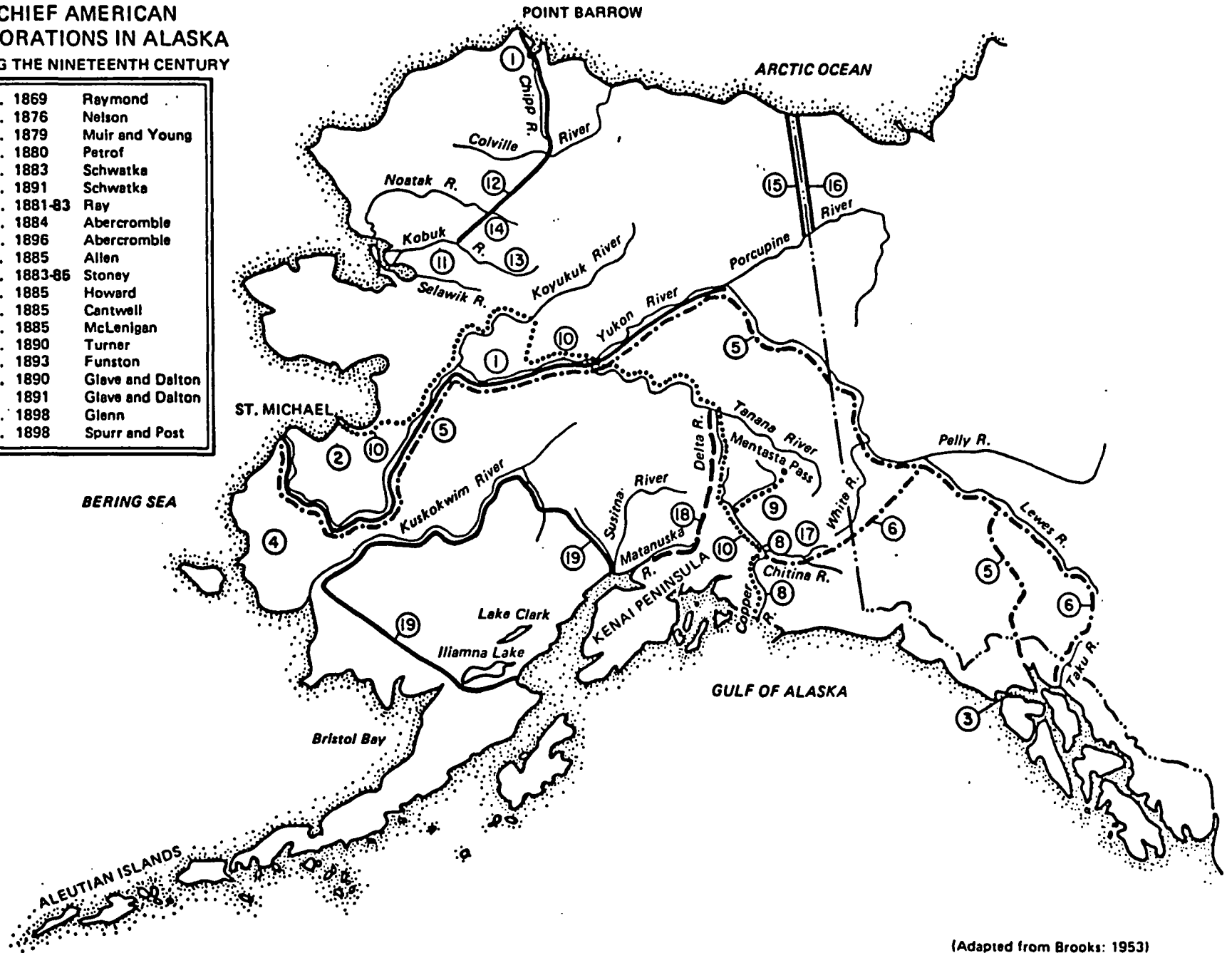
From Bennett City we continued our journey across the ice to Marsh Lake...After two days of somewhat perilous navigation among the ice flows,...we reached clear water at the lower end of Marsh Lake. The following day we reached Miles Canyon... Miles Canyon can be run in a good boat or canoe by anyone skilled in handling boats in rapid water. (Brooks 1900:432-33)

More than once a geologist was killed because "mother nature" was underestimated.

Therefore, even though the U.S. Geological Survey had not taken on the task of surveying Alaska in a rash manner, the experiences of the geologists was often akin to that of the prospector; they often did not know what lay ahead. For geologists to record scientific as well as general observations, they were required to keep daily logs of their work. Usually, at the end of the field season, those field notes were edited and prepared as professional papers and U.S.G.S. bulletins.

**CHIEF AMERICAN
EXPLORATIONS IN ALASKA
DURING THE NINETEENTH CENTURY**

1. 1869	Raymond
2. 1876	Nelson
3. 1879	Muir and Young
4. 1880	Petrof
5. 1883	Schwatka
6. 1891	Schwatka
7. 1881-83	Ray </td
8. 1884	Abercromble
9. 1896	Abercromble
10. 1885	Allen
11. 1883-86	Stoney
12. 1885	Howard
13. 1885	Cantwell
14. 1885	McLenigan
15. 1890	Turner
16. 1893	Funston
17. 1890	Gieve and Dalton
18. 1891	Gieve and Dalton
18. 1898	Glenn
19. 1898	Spurr and Post



-58-

(Adapted from Brooks: 1953)

Thus, historians now are able to understand life in Alaska before 1930. Some of the best ethnographic accounts come from the published works of the U.S. Geological Survey. An excellent example of this is the account of F.C. Schrader, who in 1898 accompanied the U.S. Army in its exploration of the Copper River region. Schrader kept an accurate journal of what he did and what he saw. Some of his experiences are abstracted here:

The principal object of the expedition... was to gather all information of general and economic value, and to find, if possible, an all-American route, railroad or otherwise, from tide water to the gold districts of the Upper Yukon in the interior.
(Schrader 1900:347)

Schrader noted the perils of survey work in the winter:

At Valdes (sic), and strung out with their tents and outfits along the trail toward the glacier, we found hundreds of prospectors who had preceeded us into the snowy country...During the week's snowstorm already noted, the fall of snow on the summit and the upper reaches of the glacier seems to have been phenomenally great...Toward the close of the storm a large snow slide had taken place on the western side which extended to the edge of camp at the base of the summit, where it buried some caches, tents, etc., beyond recovery. It also buried eight or ten people, of whom, so far as known, all but two were dug out alive.
(Schrader 1900:349-352)

Such was the reality of exploration in Alaska at the turn of the century. Invariably, the worst conditions geologists faced were in winter. Walter C. Mendenhall, another geologist assigned to a U.S. Army expedition, recalled a winter incident:

The move was accomplished with some discomfort, but the new camp itself proved to be relatively luxurious. It became evident very soon, however, that we were just between the two seasons when mapping or geologic work could be done to advantage. Earlier the snow was firm and fair progress could be made over it with snowshoes...Just then, however, it varied in depth from a few inches to a few feet, and was so soft and full of water that often a man on his snowshoes would sink to his knees or deeper. Travel under such conditions was so laborious as to be practically impossible. (Mendenhall 1900:247)

At the turn of the century, coal was becoming an important source of energy in Alaska. Accordingly, the U.S. Geological Survey sent men to discover and survey possible sources of coal. In 1902, Arthur J. Collier was "detailed to make an examination of the coal deposits along the Yukon River in Alaska" (Collier 1903:9). Collier and his party spent three months studying the geology and coal resources of 1,200 miles of the Yukon River and surrounding areas. Collier concluded from his survey that "the coal mined on the Yukon has been burned principally on river boats for steaming purposes. A smaller amount has been consumed for domestic purposes at Dawson and other points along the Yukon. The coal has been used in competition with wood cut along the river, and as the supply of wood becomes exhausted the demand for coal will naturally increase" (Collier 1903:67). The geologists had no crystal ball, but they were often adept at forecasting the future, as is evident in Collier's thoughts about the future of oil in Alaska:

Some of the companies operating steamers have begun making arrangements to use oil for steaming purposes on the Yukon. Should the use of oil prove practicable, it will retard the development of the Yukon coal mines. The oil can probably be purchased and transported to depots along the Yukon at an expense little, if any, greater than the cost of coal or wood at present prices. (Collier 1903:67)

A significant program begun in 1904 by the U.S. Geological Survey was the yearly reports on Alaskan mineral resources. It was around that time that the geologists' role as ethnographer reached its zenith. The annual reports summarized the year's exploration activities and discoveries and included the history of exploration and discussions of human resources according to region. Perhaps most interesting is that the reports were of text-book quality. The sections on transportation are particularly good reading. Of course, if one reads Alfred Brooks' Blazing Alaska's Trails, that fact becomes more obvious. In fact it was largely through Brooks' efforts that the U.S. Geological Survey was so successful in Alaska.

By 1909, geologists were surveying all regions of the territory. One of the most successful surveys of 1909 was the Iliamna expedition led by G.C. Martin and F.J. Katz. In their report, Martin and Katz found that "previous to 1909... when the surveys whose results are here presented were made, accurate maps and knowledge of the geology and the distribution and occurrence of the mineral resources of the Iliamna region, except for the shores of Cook Inlet, were almost entirely lacking" (1912:21). Transportation development was an important part of U.S. Geological Survey publications. Martin and Katz's section on transportation in the Iliamna region is an excellent example:

this region is accessible by water, there being two well-traveled routes leading to it...A good horse trail leads from the head of Iliamna Bay to Iliamna village, a distance of about 12 miles...A good wagon road has been built...as far as the Dutton Copper prospects. (1912:21)

Most of the information contained in Martin and Katz's report was abstracted from their field notebooks, and these notebooks have become important sources of historical research material.

It is interesting to note that survey exploration contributed to some non-governmental exploration. For instance, Martin and Katz's work in the Iliamna region spurred further exploration by the National Geographic Society in 1915:

Dr. Robert F. Griggs, following the pioneering expedition led by George Martin in 1912, headed a small party of scientists to explore the region along the coast and to study the effects of the ashfall on the vegetation. (Stuebaker and Womble 1979:7)

We can thank Martin and Katz for their contribution to our knowledge of Katmai National Park and Preserve.

During and through World War I, U.S. Geological Survey work continued. A major 1917 survey dealt with the Lake Clark and central Kuskokwim Region

Under the direction of Philip S. Smith, the expedition ended its work with an impressive array of accomplishments. The party spent ninety-nine days in the field and of that forty-three days were spent on the move. They completed fifty-three days of actual survey work and lost only three days to inclement weather. The end result was the mapping of 4,800 square miles and in addition, "the positions of certain previously unknown features were determined with more precision, data were obtained concerning the geologic and physiographic character and history of the region, and some notes were made about the flora, fauna, climate and population of the area explored" (Smith 1917:19). Smith exhibited the ethnographic character of many Alaskan geologists in describing the village of Sleetmute:

the only two settlements on the Kuskokwim seen by the writer were Georgetown and Sleetmut...Sleetmut consists of several native shacks and a store run by the only white man in the village. It is on the north bank of the Kuskokwim, a short distance below the mouth of the Holitna. It is said that "sleit" means whetstone and "mut" means people. The whetstones, for which this place was named, apparently came from the contact-metamorphosed sandstone that outcrops near the mouth of the Holitna. (Smith 1917:37)

Perhaps the Smithsonian Institution would have been wise to employ U.S. Geological Survey geologists as ethnographers. Smith's paragraph on the origin of a native people is fascinating.

U.S. Geological Survey work continued at an increased pace after World War I. Many of the pioneer Alaskan geologists were still trekking across Alaska in the name of geology. J.B. Mertie was certainly one of those men. His name is synonymous with accuracy, adventure and accomplishment. In 1929, he investigated the mineral resources of northwestern Alaska, in response to the nation's burgeoning need for oil. Like others before him, Mertie turned ethnographer. His 1929 account of the survey includes an extensive section on inland settlements wherein he describes the villages of Jim Town, Allakaket, Soo City, Union City and Bergman. Fifty years later, only one of these exists.

Nineteen-thirty marks the turning point in the style and substance of U.S. Geological Survey work in Alaska. The change was sudden. Though there does not exist, to any recent knowledge, a memo or directive to that effect, it came to be that after 1930, survey publications became purely technical and were no longer flavoured with historical and ethnographic accounts of life and people in Alaska. There could be any number of reasons for the sudden change, but none really explain the motives behind the decision.

This investigation of the U.S. Geological Survey work in Alaska between 1898 and 1930 has shown that the geologist was important, not only as a scientist, but also as a chronicler of Alaskan life. Many geologists, through their writings, have made known the lifestyles of the native cultures indigenous to Alaska. Some geologists left photographic records of Alaska as well. Whatever their contribution, geologists have left historians with a unique record of Alaska, records which are not used often enough.

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