

MEASLES, 1847-1850

The First Modern Epidemic in British Columbia

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WITH THE ARRIVAL OF the steamer *Beaver* in 1836, the Hudson's Bay Company (HBC) brought modern industrial technology to the Northwest Coast. An unintended consequence of this innovation was the enhanced mobility of Old-World diseases. In this instance, a combination of the *Beaver*, other HBC transportation systems and Native trading patterns produced the first epidemic to affect much of the area that is now British Columbia — the measles epidemic of 1847-1850. Similar interactions of disease, technology and culture have been described elsewhere.¹ Here, I draw upon and expand the picture presented in a recent article by the American anthropologist Robert Boyd² in order to argue that this measles epidemic, and not the smallpox epidemic of 1862-1863, was the first "modern" epidemic in British Columbia.

Beginning in 1846, measles spread from the American Plains northwards to the Canadian Prairies and westwards across the Cordillera. Boyd demonstrates that the epidemic entered British Columbia from the Columbia River watershed via coastal and interior routes in the winter of 1847/48. I begin with the latter.

INTERIOR ROUTES

From Ft Colville in December 1847, Boyd describes the spread of the measles to Kamloops and Ft Alexandria by early January 1848 (see Figures 1 and 2). To this, two additions can be made. First, there is

¹ See A. J. Ray, "Diffusion of Diseases in the Western Interior of Canada, 1830-1850," *Geographical Review* 66 (1976): 139-157; C. D. Dollar, "The High Plains Smallpox Epidemic of 1837-38," *Western Historical Quarterly* 8 (1977): 15-38. My thanks go to Richard Mackie and Susan Marsden for their critical comments and advice.

² Robert Boyd, "The Pacific Northwest Measles Epidemic of 1847-1848," *Oregon Historical Quarterly* 95, no. 1 (1994): 6-47.

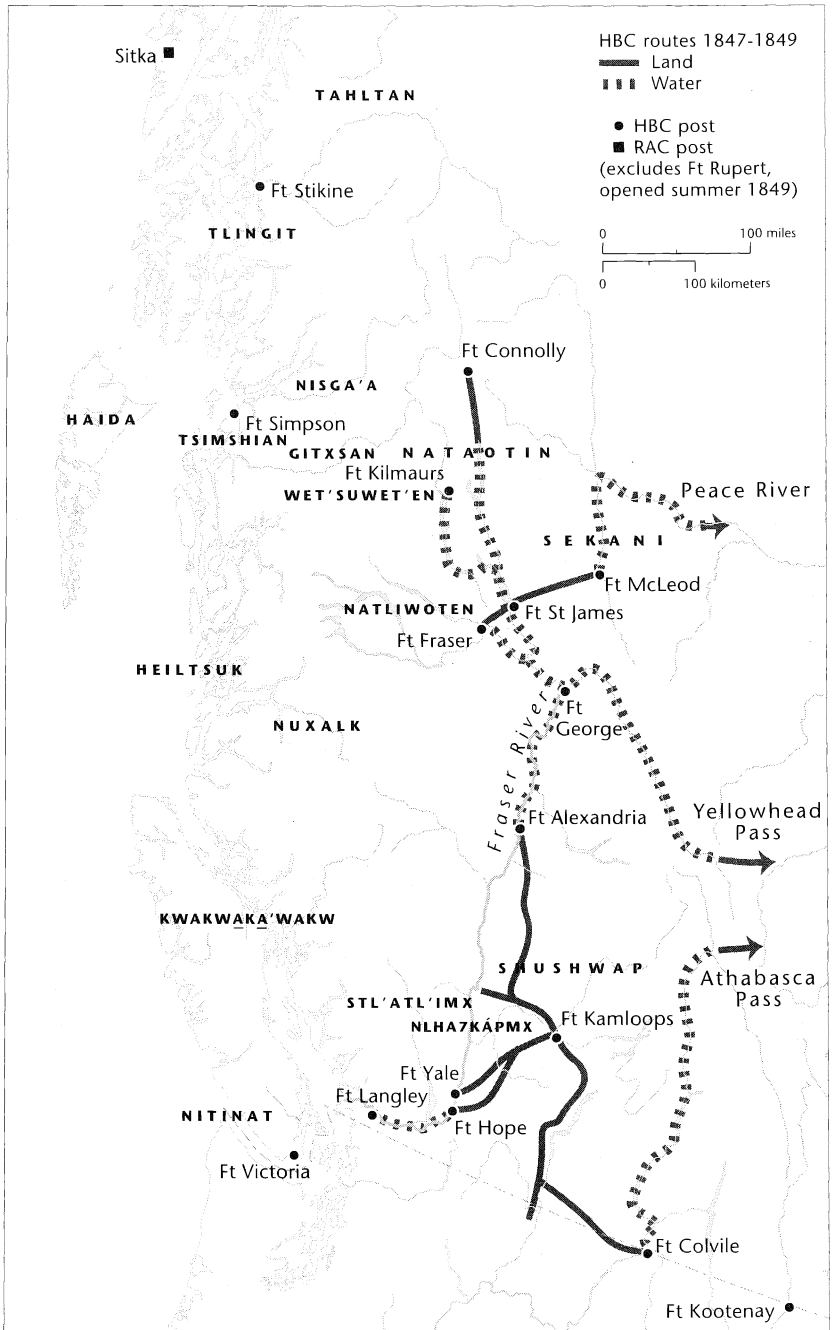


FIGURE 1 Native groups and HBC forts and routes.

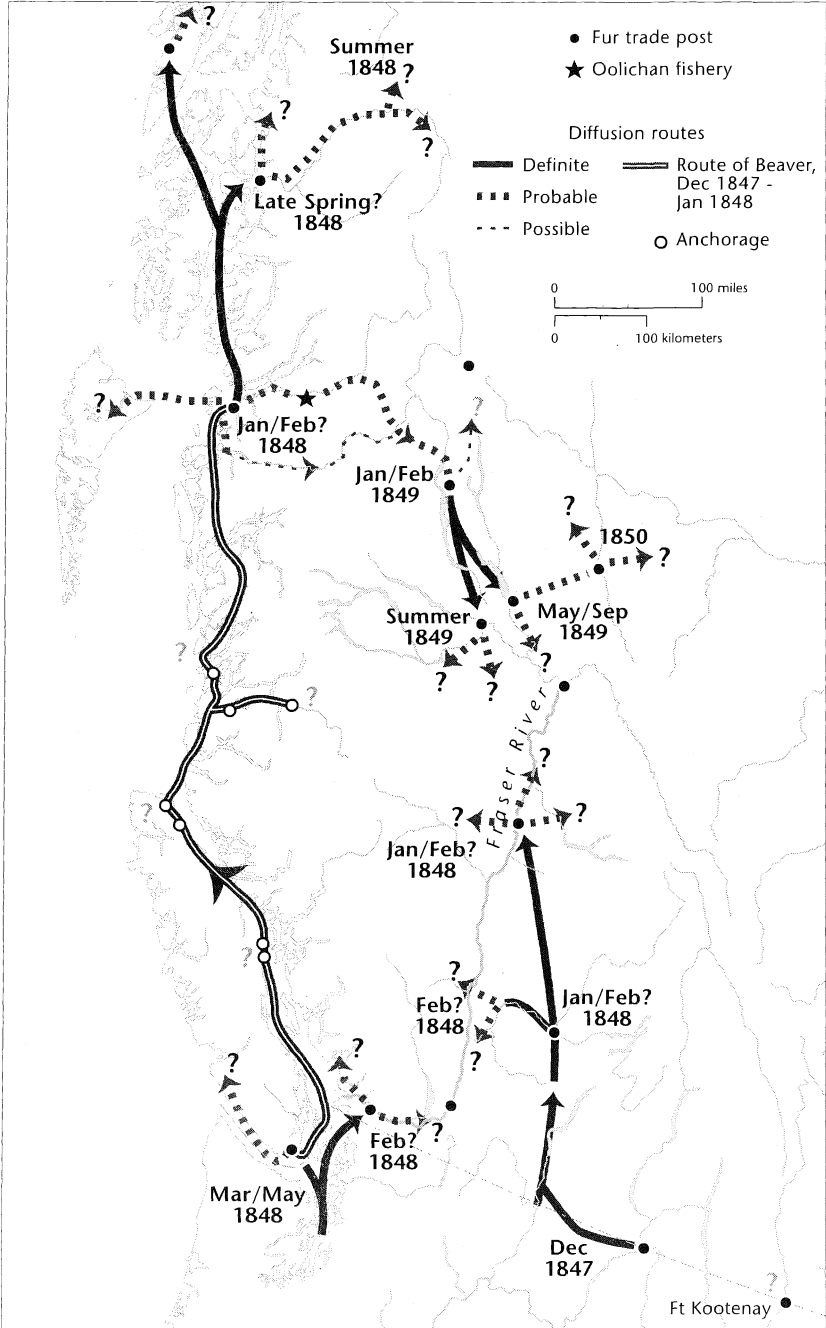


FIGURE 2 Diffusion of measles, 1847-1850.

evidence that measles extended from the Shushwap people in the vicinity of Ft Kamloops to the Stl'atlimx (Lillooet) and/or the Nlh7kápmx (Thompson).³ Writing from Kamloops in March 1848, John Tod stated:

Within the precincts of the Fort, where the sanitary precautions recommended were more readily observed the number of deaths were comparatively few, but in the directions of Frasers River those diseases, I am informed, have been exceedingly fatal.⁴

Second, the epidemic may have extended northeastwards from Ft Colville into Kootenay territory; the “influenza” of the subsequent winter certainly did.⁵

From Ft Alexandria, Boyd is uncertain about the course of the epidemic, commenting that HBC precautionary measures may have stopped its spread “further north into New Caledonia; measles is not mentioned in surviving records of the region.”⁶ In fact, there is evidence that measles reached New Caledonia — the HBC district administered from Ft St James — but in an unexpected manner.

After travelling through New Caledonia in the summer of 1849, Eden Colville reported: “In the upper parts of Fraser’s River . . . the natives have suffered considerably from the ravages of the smallpox.”⁷ Colville confused measles and smallpox, and his geography is rather vague;⁸ other HBC sources, however, are more specific.⁹

³ The Lillooet and Thompson, respectively, of earlier literature.

⁴ HBCA, George Simpson Correspondence Inward (GSCI), D 5/2I, J. Tod to Simpson, Thompson River, 21 March 1848. John Tod may be referring to the major fishery and trading site near Bridge River on the Fraser River, which he had visited late in 1847. During his stay, he learned of the Whitman murders and vaccinated some seventy “Indians.” But his visit could have been the reason the epidemic reached this area (Madge Wolfenden, ed., “John Tod: Career of a Scotch Boy,” *British Columbia Historical Quarterly* 18, nos. 3-4 (1954): 224-27.

⁵ D. Chance, “Influences of the Hudson’s Bay Company on the Native Cultures of the Colville District,” *Northwest Anthropological Research Notes* 2 (1973): 120. He cites a letter written by Anderson in April 1850. If this surmise is correct, then the Kootenay “census” of December 1848 was taken after the impact of the measles epidemic (BCARS, Addit. MSS 1912, J. R. Anderson Papers, box 10, file 6).

⁶ Boyd, “Measles Epidemic,” 23.

⁷ Colville to Pelly, 15 October 1849, in E. E. Rich, *London Correspondence Inward from Eden Colville* (London: Hudson’s Bay Record Society, 1956), vol. 19, p. 2.

⁸ Colville was governor of Rupert’s Land at the time (*ibid.*, xiii). He arrived at Ft St James, via the Peace River and Ft McLeod, just after the epidemic abated, and he continued southwards to Ft Alexandria and the mouth of the Fraser River. See note 12 below.

⁹ Other sources indicate the general impact of the epidemic in New Caledonia. See A. G. Morice, *The History of the Northern Interior of British Columbia* (Smithers: Interior Stationery, 1978) 257; Douglas to Governor, 5 December 1848, in H. Bowsfield, ed., *Fort Victoria Letters, 1846-1851* (Winnipeg: Hudson’s Bay Record Society, 1979), 107.

On 1 February 1849, the Ft St James Journal records the arrival of Michel Lacroix from Ft Kilmaurs, who brought with him the news that the measles epidemic was "raging" and had "already carried off Seven Indians of that Post." Ft Kilmaurs was located on Babine Lake, northwest of Ft St James, and it was frequented primarily by the Nataotin and Wet'suwet'en. By the middle of March, the outbreak had passed.¹⁰ At the end of May, however, measles was reported at Nak'azli, the Necosliwoten village adjacent to Ft St James, having run "amongst the upper villages" to the north and west of Stuart Lake. Early in August, the Ft St James Journal noted that measles was raging "most dreadfully" at all the villages in the vicinity of the fort.¹¹ It also reached into the fort, where, as late as September 3, all the women were "laid up."¹² By this time, the epidemic had spread southwestwards to Fort Fraser, where, in the middle of August, the Natliwoten were reported to be "suffering."¹³

Nothing more is known about this particular extension of the disease, but, in the summer of 1850, news was received from the opposite direction. The Sekani, who frequented Ft McLeod and territory to the northeast of Ft St James, had suffered from "Sickness and starvation" during the previous winter.¹⁴ A later journal entry sums up the situation: "This poor Tribe suffered dreadful privation last winter from sickness and famine, at least one fourth of their number fell victim to it.¹⁵ The "sickness," it seems safe to assume, was the measles,¹⁶ its

¹⁰ HBCA, Ft St James Journal (FSJJ), B 188/a/20, 1 February and 14 March 1849. On the latter date Lacroix brought news that all was well, but there are no further details.

¹¹ *Ibid.*, 31 May 1849, 31 July 1849. The other villages were Pinchie, Yakooche, Tachie, and Kusche (Grand Rapids). See M. Tobey, "Carrier," in W. C. Sturtevant, ed., *Subarctic: Handbook of North American Indians*, vol. 6 (Washington: Smithsonian Institution, 1981), 414; D. Hudson, "Traplins and Timber: Social and Economic Change among the Carrier Indians of British Columbia" (PhD dissertation, University of Alberta, 1983), 48-49.

¹² HBCA, FSJJ, B 188/a/20, 3 September 1849. Ten days later, the journal records the arrival of Eden Colville.

¹³ *Ibid.*, 18 August 1849.

¹⁴ *Ibid.*, 25 June 1850.

¹⁵ *Ibid.*, 20 November 1850.

¹⁶ The sickness is not identified in the journal, but Douglas states that the fur returns of New Caledonia would have been better

had there been less suffering and fewer deaths among the industrious Secanics . . . The distress to which they were reduced, in the winter of 1849 is truly deplorable; did their suffering, on that occasion, proceed from want of fire arms and ammunition, or from the debility succeeding measles, we made it a point in former times, to supply them largely with ammunition, of which they require a very large stock, for winter consumption and I think it would be well for you to institute an enquiry, as to amount of the supplies given them at present in case it should be too limited. (HBCA, Ft Victoria Correspondence Outward [FVTCO], B 226/b/3, Douglas to Manson, Ft Victoria, 21 April 1851)

impact having been magnified by a less abundant environment and, probably, by the interruption to Sekani hunting.¹⁷

These observations concerning the Nataotin, Sekani, and "Carrier" peoples of Ft St James and Ft Fraser pose an epidemiological problem. If measles appeared in Ft Alexandria in January 1848, why was it not reported at Ft St James until more than a year later? And why did it appear initially to the northwest, at Ft Kilmaurs? The answer, I think, is clear: the epidemic did not spread north from Ft Alexandria; rather, another route of infection brought the measles to northern New Caledonia via the Skeena River and/or the Nass River. To substantiate this claim requires reviewing the situation along the Northwest Coast.

COASTAL ROUTES

Boyd identifies southern and northern routes of diffusion on the coast. The southern routes were created by a combination of Native agency and the movement of HBC personnel. This combination brought the disease to Puget Sound, the lower Fraser Valley (Ft Langley), and southern Vancouver Island (Ft Victoria).¹⁸ It is possible that the measles then spread to the Nitinat, a Nuu-chah-nulth people on the west coast of Vancouver Island. The evidence on this point consists of an account of the Pacheena Nitinat published in 1858: "They were formerly more numerous, but war with the Songish Indians has reduced them to this number [twenty] in connection with smallpox which ravaged them some eight years since. They were at that time nearly annihilated."¹⁹ This could be a reference to the smallpox epidemic of 1853, but the dating is more appropriate to the measles.²⁰

The second, more spectacular route, concerns the steamer *Beaver*.

¹⁷ Located on Arctic drainage, there were no salmon runs in McLeod Lake territory. Jenness provides a narrative which may refer to these events. It involves the death of an HBC clerk at Ft McLeod and the revenge wrought by his Cree wife, which resulted in the death of "more than half the Sekani" by a malady involving swollen legs. See Diamond Jenness, *The Sekani Indians of British Columbia* (Ottawa: Department of Mines and Resources, 1937), 25-26. The HBC clerk was John McIntosh, who was in charge between 1844 and 1845.

¹⁸ The *Beaver* left Victoria on 20 December 1847, and the first report of measles did not occur until 13 March 1848. As Boyd notes, an infected man was sent to Ft Langley at the end of December. The only reference to measles in that area was for April (HBCA, Log of the *Beaver*, C 1/207, FVTJ, B 226/a/1).

¹⁹ This information, collected by the west coast trader W. E. Bamfield, came from Native sources (*Victoria Gazette*, 14 August 1858).

²⁰ The Nitinat rarely visited Ft Victoria, but the disease could have been transmitted through the Makah of the Neah Bay area, who often came to the fort to trade (HBCA, Ft Victoria Journal [FVTJ], B 226/a/1, 22 May and 3 June 1846, 28 June 1849).

With one of its crew suffering from measles, the steamer carried the disease along the coast. Boyd traces the *Beaver's* stopping points and observes that measles "subsequently appeared at all these locations for which records exist."²¹ It may be more accurate to say that the *Beaver* carried the measles to Ft Simpson and that it was later reported at Sitka and Ft Stikine.²² I wish to make two arguments here: (1) for the area south of Ft Simpson, the evidence for an epidemic is, at best, equivocal; and (2) once at Ft Simpson, the disease spread through Native trading channels, both along the coast and into the interior.

For the area south of Ft Simpson there are only retrospective accounts taken from Native informants. Such sources are difficult to date, a problem compounded by the tendency to lump measles and smallpox together. Since, for part of the central coast, the measles epidemic of 1848 was bracketed by the smallpox epidemics of 1836 and 1862, respectively, uncertainty is rampant.

In January 1848, the *Beaver* stopped to trade among the Kwakwaka'wakw in the vicinity of Cape Mudge, Beaver Harbour and Suchartie Bay. Two accounts, both mentioning smallpox, suggest an epidemic at some time prior to the establishment of Ft Rupert in 1849.²³ The smallpox epidemic of 1836 may explain this, but contemporary sources indicate that it did not reach Vancouver Island.²⁴

²¹ Boyd, "Measles Epidemic," 34.

²² James Douglas attributed the *Beaver's* low 1848 fur returns to "the Measles which also severely afflicted the Natives of the District wherein the Steam vessel carries on trade" (HBCA, Ft Vancouver Correspondence Outward [FVRCO], B 223/b/38, Douglas and Ogden to Governor and Commissioner, 5 December 1848 [published in Bowsfield, *Fort Victoria Letters*, 22]).

²³ George Blenkinsop, who served at Ft Rupert from 1849 to 1857 and, later, was the first Indian agent for the Kwakwewth Agency, wrote about the history of the settlement at Alert Bay in 1888:

There is, however, abundant evidence to prove, both by living testimony and by the remains and relics of by-gone days, that Alert Bay was formerly the home of a large Indian population. In fact, they abandoned the place only in 1837-1838, on the first appearance of smallpox, when great numbers of them perished. (Canada Legal Surveys Branch, Vancouver Office, Reserve Correspondence, vol. 14, p. 161, Blenkinsop to Powell, 14 February 1884)

In 1916, Charles Nowell stated:

Before the Hudson's Bay came and built there [Ft Rupert], there was an Indian house there, but they had small-pox there and lots of people died in the houses and then what Indians were left moved across the Bay, and when they came back the old village site was claimed by the Hudson's Bay Company's men. (National Archives of Canada [NAC], RG 10, vol. 11,025, file AH 6, McKenna-McBride Royal Commission, Hearings of Kwakiutl Band at Ft Rupert, evidence of Charles Nowell, p. 15)

²⁴ The best evidence comes from George Simpson, who visited McNeill Harbour in 1841:

They have been exempted from the smallpox, though their brethren, both to the south of the Columbia and in Russian America, have suffered severely from that terrible scourge. To secure them a continuance of this happy immunity, we begged permission from the chiefs of the Quakeolths to vaccinate the children of the tribe; but, as they neither did nor could

Possibly, these latter sources are mistaken; alternatively, they may refer to the 1848 measles epidemic.²⁵ That the Kwakwaka'wakw population declined during the 1840s is indicated by an 1849 report from Ft Rupert: "These Indians have also greatly decreased since your Honour's [George Simpson] visit to this place in 1841 — in fact they are vanishing rapidly from one end of the coast to the other."²⁶

For the Nuxalk (Bella Coola) and the Heiltsuk (Bella Bella) the situation is not much different. McIlwraith, in the early 1920s, collected some information about epidemics among the Nuxalk. Several accounts concern the impact of smallpox upon settlement patterns and the abandonment of particular villages. Most references are undated, but, in discussing the Dean River area, McIlwraith states that "about eighty years ago [c. 1840-1845] a smallpox epidemic so reduced the villages on the Kimsquit that the survivors abandoned them and moved to the Dean."²⁷ Olson, in his studies on Wakashan speakers of the central coast, collected occasional, undated references to smallpox.

These uncertainties disappear once Ft Simpson is reached. As Boyd demonstrates, HBC sources document the arrival of the measles and its spread among the Tsimshian. The impact was compounded by an outbreak of fever, likely influenza, in the summer of 1848. John Work, writing from Ft Victoria the following November, reported:

The sickness and deaths among the Indians and the despondency created thereby had such an effect upon them that for a time it was thought their trade would be a complete failure, but in time the natives forgot their misfortune and resumed their energy and the trade revived and in the end turned out as nearly as well as last year.²⁸

appreciate the unknown blessing, we preferred leaving things as they were. (George Simpson, *Narrative of a Journey Round the World During the Years 1841 and 1842*, 2 vols. [London: Henry Colburn, 1847], 189)

See also James Gibson, "Smallpox on the Northwest Coast, 1835-1838," *BC Studies* 56 (1982/83): 69, 77.

²⁵ Also, in 1850, Douglas makes a suggestive comment. He says that he had "given two glasses of Vaccine Matter in charge to Mr Beardmore for use at Fort Rupert. It is quite fresh and will I trust prove good" (HBCA, FVTCO, B 226/b/3, Douglas to Blenkinsop, Ft Victoria, 13 November 1850).

²⁶ HBCA, GSCI, D 5/26, Blenkinsop to Simpson, 28 September 1849. In 1841, Blenkinsop had travelled through the area with George Simpson's party on the *Beaver*. There is reason to think that other factors contributed to this decline.

²⁷ I have only skimmed the surface of the ethnographic literature on the central coast peoples. See, T. F. McIlwraith, *The Bella Coola Indians*, 2 vols. (Toronto: University of Toronto Press, 1992), 16. First published in 1948.

²⁸ British Columbia Archives and Records Service [BCARS], Addit. MSS 635, Donald Ross Papers, file 226, John Work to Donald Ross, 28 November 1848. Work notes that one-third of

It seems unlikely that the *Beaver* played any role in the diffusion of the epidemic beyond Ft Simpson. After a five-week stop at the fort, the crew was probably no longer infectious when the vessel continued its journey northwards.²⁹ Moreover, Native trading patterns provide an adequate explanation for the further spread of the disease. The trading networks of the local Tsimshian tribes extended from Milbanke Sound to the Stikine river and from the Queen Charlotte Islands to the upper Skeena and the upper Nass.³⁰

An account, published in 1860, concerning the career of a Haida chief known as "Captain John," indicates that measles had reached the Queen Charlotte Islands — an area not visited by the *Beaver*:

About twelve years ago, the measles broke out among the Oregon Indians . . . It spread up the coast and finally reached the Hydah lodges. A slight knowledge of the treatment of the disease, which "John" had acquired during his sailing with Capt. Lucas, proved of great use to him now; and he not only cured those of his own family, but such others of his tribe as sought his assistance. The cunning fellow, however, knew how to charge a good price for his services, and, like many white physicians, always exacted a good round fee. By this means he acquired (for an Indian) great wealth, and eventually became chief of the Hydahs.³¹

The precise timing of the arrival of measles among the Stikine Tlingit is uncertain, but it was "much later in the season" than was its

the men "were unfit for duty with influenza and other ailments" during the summer. In another letter, written the same month, he stated that the measles "was followed by a fever which was worse than itself and very nearly carried off the third and fourth daughters" (BCARS, Ermatinger Papers, A/B/40/Er 62.4, Work to Ermatinger, 9 November 1848).

²⁹ The *Beaver* reached Ft Simpson on 5 January 1848 and departed on 15 February. During this period, a stoker was listed as "sick" from the time of arrival until 22 January; and on 11 February there is an ambiguous comment about a crew member returning to his assigned duty following the illness of another crew member (HBCA, Log of the *Beaver*, C 1/207).

³⁰ The principal trading routes are shown in G. MacDonald, G. Coupland, and D. Archer, "The Coast Tsimshian, ca. 1750", in R. Harris and G. Matthews, ed. *Historical Atlas of Canada: From the Beginning to 1800* (Toronto: University of Toronto Press, 1987), plate 13. Each route was controlled by a specific group. See: M. Halpin, "The Tsimshian Crest System: A Study Based on Museum Specimens and the Marius Barbeau and William Beynon Field Notes" (PhD diss., University of British Columbia, 1973), 111; University of British Columbia, Special Collections [UBCSC], Barnett Papers, file 9, vol. 1, p. 43; and University of British Columbia Library [UBCL], W. Beynon, Narratives 52 and 161, microfilm, reel 7,173.

³¹ *Daily Colonist* (Victoria), 5 July 1860.

arrival at Ft Simpson.³² Other evidence, noted below, indicates that the epidemic also spread up the Stikine River to the Tahltan, trading partners of the Stikine Tlingit. The latter ascended the Stikine River to the vicinity of Telegraph Creek, primarily in June and July, to trade and procure salmon.³³ This timing, suggesting a late spring/early summer outbreak on the lower Stikine, fits reasonably well with the limited information from contemporary sources cited above.

At Ft Stikine, as at Ft Simpson, the measles was followed by influenza, and the mortality extended into the ensuing winter. George Blenkinsop reported that:

Old Seix, the head chief, died last winter, and upwards of a hundred others; the very severe cold being the cause. The different tribes in the neighbourhood of Stekine have, during the past few years, greatly diminished; many of them one third.³⁴

Information on measles in Tahltan territory is provided by T. P. W. Thorman, a missionary who resided on the Stikine River early in the twentieth century.³⁵ From Tahltan informants, he learned of two major "smallpox" outbreaks: the first occurring between 1832 and 1838; the second occurring between 1847 and 1852 (this latter outbreak was, undoubtedly, measles). Because Thorman does not fully differentiate between these two outbreaks, little can be linked specifically to the 1848 measles epidemic. Thorman singles out three particularly devastating consequences of these epidemics. First, some groups were completely eliminated. In Thorman's words,

[the] stories of these two waves of smallpox are well summed up by the Indians as they recounted stories everybody died, just like the

³² The *Beaver* was at Ft Stikine on 16 February 1848, which does not fit well with this description. The vessel did return to Ft Stikine, but it is difficult to see why the later rather than the first visits should have been responsible for spreading the disease.

³³ The Ft Stikine Journal (1840-42) indicates two periods when trading parties would depart for "the Interior": (1) between late June and mid-July and (2) September (HBCA, Ft Stikine Journal, B 209/a/1). See also, J. A. Teit, "Field Notes on the Tahltan and Kaska Indians," *Anthropologica* 3 (1956): 51; and Simpson, "Narrative," 210-11.

³⁴ HBCA, GSCI, D5/26, Blenkinsop to Simpson, 28 September 1849, written from Ft Rupert. In a letter from Ft Simpson, John Work indicates that this sickness reached the Stikine around November: "The last letters received from Fort Stikine were dated in November. All were well and the trade fair. We have lately learned by Indian report that much sickness prevails among the Stickeen Indians. Several very sudden deaths have taken place and among the rest Seeux the head chief" (HBCA, A 11/67, London Correspondence Inward from Ft Simpson, Work to Barclay, 15 February 1849).

³⁵ BCARS, F/3/T39, T. P. W. Thorman, miscellaneous materials relating to the Tahltan Indians.

rabbit sickness, only somebody left here & there with no friends or relatives. we often saw somebodys bones childrens bones too on the mountains & in the forests & not know who they were.

Second, knowledge of the past was destroyed.³⁶ Of this incalculable cultural loss, Thorman wrote:

The unsurmountable barriers, to a connected history of the Tahl Tans or a brief summary of historical events through legends, was the loss at the time of the smallpox of almost all the story tellers and the discontinuance of the time honoured Daksh Khit (The Story Tellers Guild or Academy).³⁷ Each tribe had its authentic Story teller who instructed in the true method of narrating stories with a strict adherence to a word for word repetition as taught to her pupils so that it might pass unaltered from generation to generation.

Third, some resource sites could never be used again. The best example of this is the major fishery at "Chican-ahda," where there were no longer enough "constructors and operators" for the "intricate system of ladders, traps, and scaffolding attached to the bank or projecting over the swirling waters."³⁸

I return now to the question of the spread of measles to Babine Lake. Two potential routes, both indigenous trade routes, can be identified. One, extending up the Skeena River to its confluence with the Bulkley River, was used by the Gispaxlo'ots (a Tsimshian tribe) to trade with the Gitksan and Wet'suwet'en.³⁹ Usually, there were three trips a year, the first after the initial oolichan harvest on the coast (i.e., at the end of April or beginning of May).⁴⁰ From the mouth of the Bulkley River, a well-used trail ran eastwards via the Suskwa Valley to

³⁶ Evidence from the coast suggests that the 1835-1838 smallpox epidemic was particularly hard on the elderly. Of this, Gibson writes: "At Sitka all ages and both sexes were smitten but the elderly the most and the young the least. At Fort Simpson the elderly and also the men bore the brunt of the disease; women, children and slaves were least affected" (Gibson, "Smallpox," 73).

³⁷ Elsewhere in his manuscripts, Thorman provides an account of the Daksh Khit, including the role they played and the training they received.

³⁸ Chicanada was a fishing site on the south bank of the Stikine River, about five miles above Telegraph Creek. See Sylvia Albright, *Tablian Ethnoarchaeology* (Department of Archaeology, Simon Fraser University, 1984), no. 15, pp. 85-87.

³⁹ For a discussion of this route, see S. Marsden and R. Galois, "The Tsimshian, The Hudson's Bay Company and the Geo-Politics of the Fur Trade," *Canadian Geographer* 39, no. 2 (1995): 169-83.

⁴⁰ See the statement by Matthew Johnson (Canadian Museum of Civilization, Barbeau Files, BF/16.10).

Babine Lake.⁴¹ This route stretches what is known of the timing of the epidemic at Ft Simpson, but it cannot be ruled out.

A little to the north of Ft Simpson, at the mouth of the Nass River, was the principal oolichan fishery of the north coast. Each year, between the middle of March and the beginning of May, thousands of people came to fish and/or trade: Tsimshian, Nisga'a, Haida, Tlingit, Gitksan, and, occasionally, some Wet'suwet'en.⁴² If measles reached this concourse — and the timing fits — about two months after its arrival in Fort Simpson, then the conditions for its wide geographic spread are obvious.⁴³ From the mouth of the Nass River a combination of canoe routes and "grease trails" extended across to the Skeena and to the mouth of the Bulkley.

CONCLUDING REMARKS

The diffusion of measles from the southern coast to the northern coast was a function of HBC technology and organization.⁴⁴ Native trading patterns, stimulated and to some extent channelled by the distribution of HBC posts, accounted for its subsequent spread. In combination these two systems of communication ensured that the measles reached much of the area that is now British Columbia. In my opinion, the measles of 1847-1850, not the smallpox of 1862-1863, was the first modern epidemic in this region. Moreover, the geographical scope of the measles epidemic strengthens the case for significant Native depopulation before White settlement.

Native accounts, however preserved, are crucial to in the reconstruction of disease geography. Such accounts are often difficult to interpret, particularly with regard to dating, and must be carefully contextualized. Nonetheless, for many areas they are the only sources

⁴¹ For a description, see the journal of Simon McGillivray Jr, who travelled along the trail in 1833 (HBCA, GSCI, D 4/126, nos. 31-33).

⁴² Accounts of the "traditional" Coast Tsimshian annual round are contained in: MacDonald et al., "Coast Tsimshian," plate 13; M. Halpin and M. Seguin, "Tsimshian Peoples: Southern Tsimshian, Coast Tsimshian, Nishga, and Gitksan," in W. Suttles, ed., vol. 7, 1990: 269-71. *Northwest Coast: Handbook of North American Indians*, (Washington: Smithsonian Institution, 1990). For a graphic portrayal of the situation in the mid-1850s, see, R. Galois and A. Ray, "Plate 19," in R. Gentilcore ed., *Historical Atlas of Canada: The Land Transformed, 1800-1891* (Toronto: University of Toronto Press, 1993).

⁴³ Work stated that, at Ft Simpson, the epidemic "had run its course, before the beginning of April" (Douglas and Work to Governor, 5 December 1848 [published in Bowsfield, *Fort Victoria Letters*, 21-22]).

⁴⁴ I am not persuaded by claims for a 1770s pan-coastal smallpox epidemic. For a critique of this claim, see Cole Harris, "Voices of Disaster: Smallpox around the Strait of Georgia in 1782," *Ethnohistory* 41, no. 4 (1994): 591-626.

of information available, and, as Thorman's notes illustrate, they provide a vivid portrayal of the devastation wrought by epidemics such as measles and smallpox.

Quantitatively, Boyd is probably correct in suggesting a mortality rate of about 10 per cent. However, in many areas, the aftershock of fever and/or influenza likely increased this rate. Douglas and Work, writing from Ft Victoria in December 1848, estimated that about one-tenth of the population trading at Ft Simpson had died.⁴⁵ However, two weeks earlier, in a private letter, John Work offered a different assessment:

The measles committed sad ravages among the poor Indians and carried off great numbers of them . . . The disease was brought by the American immigrants and spread over the whole country this side of the mountains, in every quarter it was more fatal than even the smallpox in 1836.⁴⁶

This serves as a reminder of the quantitative uncertainties surrounding early epidemics. But the general picture in British Columbia is becoming clearer. Disease was an integral and devastating component in the dialectic of contact.

⁴⁵ Douglas and Work to Governor, 5 December 1848, B 223/b/38 (published in Bowsfield, *Fort Victoria Letters*, 21-22).

⁴⁶ BCARS, Ermatinger Papers, A/B/40/Er 62.4, Work to Ermatinger, 9 November 1848. Work was in charge of Ft Simpson, but the letter was written from Ft Victoria.