Frederick Roehrig: A forgotten name in Salish linguistics

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Professor Frederick Louis Otto Roehrig, a distinguished philologist, linguist, and polyglot, traveled broadly in North America doing research on languages from several families. His research in the Pacific Northwest resulted in vocabulary lists from several Salish languages. Because the collected data often represent several dialects of the same language, they allow us to see some details about a language at the time of early contact. For example, Roehrig's lists are useful for the study of variation and change within the Central Salish language, Halkomelem.

KEYWORDS: Roehrig, Salish, Halkomelem

1. Introduction [1]

Professor Frederick Louis Otto Roehrig, a specialist in modern and ancient languages, left us a legacy of important documentary materials. Roehrig was a talented person: he held both a Ph.D. in philology and a medical degree and practiced otolaryngology.[2] His linguistic works include books and articles on Sanskrit, ancient and modern Arabic, Chinese, Japanese, Persian, Turkish, Malayan, Finnish, German, Irish, and French. In addition, he undertook research on a variety of North American languages, immersing himself in various tribal communities. Roehrig not only created vocabularies of Inuit, Dakota, and numerous Athabaskan and Salish languages, but also championed the cause of linguistic research in those languages. He passionately argued that "on this continent, researches in philology, ethnology, and history should have for their main object the languages and nations of America." (Roehrig 1874: 16).

This paper pays tribute to Roehrig's legacy. After a brief biography, an overview of his *Vocabulary of Salish Languages* (ca.1870) is given, with special attention to his work on the Central Salish language Halkomelem.

2. A Short Biography

Little is known about the life and work of F. L. O. Roehrig, even though his contributions are acknowledged in bibliographies of North American languages (Pilling 1893; Van Eijk 2008), and his works are preserved in the Smithsonian Institution Library. *Who was who in America* (1897-1942: 1050) provides only a short paragraph that briefly outlines the biography of this diversely talented personality. Additional interesting facts about his life are available from the genealogical research on German emigration to America by C.N. Smith (2004) and from the article published during the scholar's lifetime in *Trübner's American and Oriental Literary Record* (1874). Archival data from Cornell University provide additional information about Roehrig's teaching career (Cornell University 1996). Berry (1950), in his collection of sketches from *Cornell Alumni News,* presents some amusing

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[1] I acknowledge the support and guidance of Donna Gerdts, who not only provided the copy of Roehrig's manuscript, but also was abundantly helpful throughout the course of this work, especially in discussing details of Halkomelem dialectology.

[2] This specialist designation does not seem to have been given to any other Civil War surgeon (Peck 1982–2012).

stories about "this phenomenal linguist, this abyss of learning." Finally, Roehrig's obituary offers a few more details about his life and death (Pardo 1908). The following outline of his biography is based on the information provided in the above-mentioned sources.

F.L.O. Roehrig was born on January 19, 1819, in Halle, Prussia. While still a child, he fueled his interest in foreign languages by reading books from his grandfather's library. He quickly mastered not only the usual European languages, but also Hebrew, Arabic, Armenian, Georgian, Persian, Tatar, Mongolian, and several other Oriental languages. Equipped with this knowledge, he arranged for examinations in Arabic, Persian, Turkish, Russian, Modern Greek, Portuguese, Spanish, and Italian, receiving certificates from the Council of the University of Leipzig. He entered the University of Leipzig and quickly earned a Doctorate of Philosophy in Oriental languages and comparative philology.

His father's influence and his own linguistic achievements, including a book on Turkish idioms, secured him a diplomatic appointment as an attaché for the Prussian embassy in Turkey (1841). But shortly after arriving in Constantinople, Roehrig got involved in a public scandal between a high ranking officer of the Turkish Army De l'Or and a Russian diplomat, Count Stiepowisch, resulting in his giving up his appointment. After leaving Constantinople, he travelled in Africa and Asia, studying the languages, customs, and religious ceremonies of the people whose countries he visited. It is not clear when Roehrig came back to Europe, but in the late 1840s he lived in Paris, where he studied medicine at the University of Paris and where in four years he earned a degree of Doctor of Medicine and Surgery. He practiced medicine in Paris, simultaneously teaching languages at the Royal Oriental Academy. On October 25, 1848, he received the Volney prize for linguistics from the Imperial Institute of France.[3]

In 1853, he came to the United States and became assistant librarian of the Astor Library of New York; however, he soon resigned due to his restrained financial circumstances. Dr. Roehrig again started practicing medicine, moving west, where he speculated in land, started an apothecary's shop, and even tried his hand at journalism. From 1858 to 1861, he was a Professor of Medical Sciences at the Medical College in Philadelphia. At the same time, he taught foreign languages at various universities.

During the Civil War, he served as a surgeon in the US Army (1861–1867). It was during that time that he became interested in North American languages. He worked for three years in the military hospital in West Philadelphia, and was stationed in South Carolina and then the Dakota Territory, where he became familiar with the Dakota and Chippewa languages (Smith 2004). Roehrig says:

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[3]The Volney Prize was a prestigious linguistic prize awarded by the for work in . The Prize was founded by Constantine Volney in 1803 and was originally a gold medal worth 1, 200 francs (Leopold 1999: 83). Another linguist with connections to research on Salish languages, Claude Hagège, won the prize in 1981.

> In the year 1866 the writer of this article spent the interval from the 4th of July to the 26th of November in constant intercourse with the Dakota or Sioux Indians, near Fort Wadsworth, Northern Dakota Territory. Previously to his going to that out-of-the-way region he had happened to make himself in some measure acquainted with the languages of several of the Indian tribes, particularly with the Chippewa tongue; and he then at once directed his attention to the language of those Indians in whose immediate neighborhood he was going to reside for a while, namely, the Sioux Nation, or Dakotas (Roehrig 1872: 3).

According to K.J. Trubner (1874: 5), Roehrig soon became fluent in both of those languages. After the war, from 1868 to 1869, Roehrig became acting librarian of the United States Surgeon-General's office in Washington.

The post-war years gave him an opportunity to focus once more on his academic career. From 1869 through 1885 he held the position of a Professor in Sanskrit and modern Oriental languages at Cornell University. Roehrig started his career at Cornell as Assistant Professor of French, but shortly after he was teaching a variety of Oriental languages. *The Register and Catalogue* of Cornell University for 1879–80 provides the following record of this development:

> Professor Roehrig gives instruction in the living Asiatic Languages and in Sanskrit, Old Persian and Arabic. Prof. Roehrig commenced with an elementary course in Chinese, which lasted two years. He then added instruction in Japanese (grammar, practical exercises in the Hiragana characters, etc.) At the same time, he delivered lectures to the students on Mantchoos, Turkish, the Tartar languages, Turanian Philology, etc. A two years' course of Arabic followed, and finally Sanskrit has become one of the principal objects of this department. The Professor also presents to his classes, in succession from year to year, grammatical outlines and philological sketches of such languages of the East, as may be most instructive and of particular interest to the student of ethnographical philology and general linguistic science (Cornell University, 1996).

In 1886, Roehrig left his position at Cornell, moving with his son Frederick[4] to California. He spent the rest of his life there, working first as an instructor in Sanskrit at the University of Southern California from 1886 to 1895, and from 1895 until his death he was a lecturer in Semitic languages and Oriental philology at Stanford University. Roehrig died on July 14, 1908 in Pasadena, California.

Roehrig was a chevalier of the Imperial Order of the Medjidiyeh in Turkey. He was also a member of the American Philosophical Society, the Asiatic Society of Paris, the Oriental Society of Germany, the American Oriental Society, the American Philological Association, and an honorary member of the Council of the Gaelic Union of Ireland. He was also the author of numerous compositions for the piano.[5]

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[4]Frederick Louis Roehrig, (1857–1948) was a famous architect, particularly known for his many landmark buildings in Pasadena, California, including the Hotel Green.

[5]His great-uncle was the German-born British composer George Frederick Handel.

3. Among the pioneers in the field

It was during his time as a professor at Cornell that Roehrig engaged in various field work expeditions and developed his credentials as an expert in North American languages. The *modus operandi* of the language researchers of this inceptive period was to travel through the region collecting vocabularies as they went.

According to Goddard (1996: 25), the first records of Salishan languages were produced by Alexander Mackenzie (1764–1820), who in 1801 published short vocabularies of twenty-five words each of Shuswap (the "Atnah" tribes) and Bella Coola (Friendly Village). This attempt was shortly followed by Alexander Henry (1765–1814), who apparently travelled to the Pacific coast to help establish the fur trade. His journal extends from 1799 to 1812, and between 1808 and 1809, he recorded vocabularies of about 300 words each of several Interior Salish dialects (Pilling 1893: 32).

By the mid-nineteenth century more serious scholarship started gaining steam. Among the early contributions, the vocabularies of Tolmie (1841), Hale (1838–1842), Gibbs (1863), Gatschet (1877), Tolmie and Dawson (1884), Eells (1885), and Boas (1886) were especially important, as they helped to differentiate the languages and dialects within the Salish family (Pilling 1893: 53–54). Surprising as it may seem, by the end of the 19th century Salish languages were explored and documented to the point that J.C. Pilling, the compiler of "Bibliography of Salishan Languages", could proclaim that "of the numerous stocks of Indians fringing the coast of north-west America few have been as thoroughly studied or their languages so well recorded as the Salishan" (1893: 53).

It is not quite clear from the available sources when Professor Roehrig went on his expedition to collect data for his vocabularies and how his expedition was funded. However, we know that in 1879 the Bureau of Ethnology was founded after Congress appropriated funds for the continuation of research among North American Indians that had begun under several federal geological surveys, especially the Geographical and Geological Survey of the Rocky Mountain Region (a.k.a. the Powell Survey)[1869] and the Geological Survey of the Territories (a.k.a. the Hayden Survey)[1871] (Bureau of American Ethnology 1878–1965). Perhaps Roehrig's field work was performed under the mandate of those surveys. The director of the newly established Bureau of Ethnology was John Wesley Powell, who served from 1879 to 1902, and under whose leadership the Bureau became a "major force in the growth of the nascent science of anthropology by undertaking several broad and basic anthropological research projects sponsoring extensive and intensive field research by its staff and collaborators" (Bureau of American Ethnology 1878-1965).

The First Annual Report of the Bureau presented by Powell in 1881 acknowledges, among other contributors, Professor F.L.O. Roehrig: "Much assistance has been rendered the Bureau by a large body of scientific men engaged in the study of anthropology, some of whose names have been mentioned in the report and accompanying papers." The name of Roehrig is found on the long list of contributors and compilers of different North American vocabularies: "with this paper will be found a number of vocabularies collected by himself, Mr. George Gibbs, General George Crook, U.S.A., General W. B. Hazen, U.S.A., Lieut. Edward Ross, U.S.A., Assistant Surgeon Thomas F. Azpell, U.S.A., Mr. Ezra Williams, Mr. J. R. Bartlett, Gov. J. Furujelm, *Prof. F. L. O. Roehrig* [italics – E.B.], Dr. William A. Gabb, Mr. H. B. Brown, Mr. Israel S. Diehl, Dr. Oscar Loew, Mr. Albert S. Gatschet, Mr. Livingston Stone, Mr. Adam Johnson, Mr. Buckingham Smith, Padre Aroyo; Rev. Father Gregory Mengarini, Padre Juan Comelias, Hon. Horatio Hale, Mr. Alexander S.Taylor, Rev. Antonio Timmeno, and Father Bonaventure Sitjar" (Powell 1881).

From this and other available sources, it becomes clear that Roehrig had gained recognition as an authority on the languages of North America. Pilling (1892) states that "while in charge of the philologic collections made by the Smithsonian Institution, Dr. Gibbs was accustomed to refer the material relating to the several linguistic families to specialists throughout the country, in order that he might have the benefit of their knowledge of the subject. In pursuance of this policy Prof. *lloehrig* [sic] was called upon for assistance, and the collections relating to a number of families in the northwest were sent to him for criticism, among them the Athapascan." Trübner (1874: 5) provides another interesting insight into Professor Röhrig's contribution to the cause:

> For the last few years he has, during his leisure hours, occupied himself with the study of the North American Indian Languages, and his dissertation "On the language of the Dakota and Sioux Indians," published by the Smithsonian Institution, proves him to be a man who can contribute something substantial and really interesting in a department in which so little has been done up to the present time. Since the death of his collaborator, the late George Gibbs, he has been charged with the elaboration of the manuscripts collected by that scholar, which bear upon the Indian languages, and we have been informed that several interesting works, forming part of these literary remains, will shortly appear in the "Proceedings of the Smithsonian Institution," with commentaries by Professor Röhrig.

Pilling confirms the fact, explaining that when Gibbs passed away in 1873, he was engaged in superintending the printing for Smithsonian Institution of a "quarto volume of American Indian vocabularies". After his death, the publication of those vocabularies was entrusted to W. D. Whitney, J. H. Trumbull, and F. L. O. Roehrig (Pilling 1893: 26).

4. Roehrig in the Salish world

Professor Roehrig's expeditions to the Pacific Northwest yielded a manuscript housed in the Smithsonian Institution. There was a peculiar note on the old catalogue card, saying that the manuscript was sent to the Bureau of American Ethnology on June 6, 1928, by Franz Boas, "who apparently had the manuscript in his possession for some time" (see the Appendix). The Smithsonian Institution catalogue record provides the description of the manuscript, preserving its original orthography for the names of the languages surveyed together with the standard modern equivalents for some of them (see the Appendix). The manuscript contains the comparative vocabularies of the following twenty-five Salish languages, dialects, and sub-dialects: Flathead, Kalispelm (Kalispel), Spokan, Skoyelpi, Okinaken (Okanagan), Schitsui, Shiwapmukh (Shuswap), Piskwaus (Pisquows), Clallam, Lummi, Nooksahk (Nooksack), Nanaimooh (Nanaimo), Tait, Poanhooch or Spokomish, Noo-so-lupsh, Skagit, Kwantlen, Komookhs (Comox), Toanhooch, Kwinaiutl, Cowlitz, Chemakum, Belhoola (Bella Coola), Lilowat, Nikutemukh (Couteaux or Samena).

Since the manuscript preceded the modern classification of Salish languages (Thompson & Kinkade 1990) by more than a hundred years, each location Roehrig worked at was given its own entry in his notes, as was common practice at the time. Thus, the manuscript includes lexicons from different languages (Clallam, Lummi, Nooksack, etc.) at the same level as dialects and subdialects (Skagit, Nanaimo, Kwantlen, Tait), and on one occasion—the name of a tribe (Toanhooch) stands for the name of the language (Lushootseed).

The manuscript contains the "Vocabulary", which is described in the catalogue record at the Smithsonian Institution Library as follows (the original orthography has been preserved):

> Title: Three comparative vocabularies of the Salish languages
> Part I – 1 "Comparative Vocabulary of the [Interior] Salish Languages." No date. 47 pages, approximately 180 terms.
> Part II – " II Series. Comparative Vocabulary of the [Coast] Salish Languages." Ithaca, New York, November 15, 1870. 86 pages, approximately 200 terms.
> Part III – "Synoptical Vocabulary of the [Interior and Coast] Salish languages (comprising the languages which are more exclusively treated in the 2nd Series of Comparative Vocabulary)." No date. 16 pages, approximately 190 terms.

The English index to the "Vocabulary" (Part II & Part III) consists of a list of 190–200 words (respectively), basically the list given by Gibbs (1863). In the "Philology" section of the "Instructions", Gibbs suggested a list of words that "in view of the importance of a uniform system in collecting words of the various Indian languages of North America, adapted to the use of officers of the government, travellers, and others … is recommended as a Standard Vocabulary." Apparently, the Gibbs list was adopted as a basis for arrangement of vocabularies of North American languages at that time, as Dawson and Tolmie (1884) also used it. The list includes several classes of words: nouns, adjectives, numerals, pronouns, and verbs, though the emphasis in this work is on nouns, which constitute the majority of the "Vocabulary". Nouns are organized by thematic fields, such as surrounding environment, forces of nature, human body, everyday objects, household items, kinship terms, animals, and plants.

At the time of Roehrig's work circa 1870, the International Phonetic Alphabet was not yet adopted; it was first published in 1888. However, some attempt had been made to develop a standard alphabet for representation of the sounds of North American languages. In the introductory note to his vocabularies, Tolmie (1884: 9) explains: "the alphabet… closely follows that recommended by Gibbs in his "Instructions for Research Relative to Ethnology and Philology of America". Thus, by the time Roehrig compiled his vocabulary, there had already been devised the "universal alphabet … applicable to all languages". Hence, we can assume that Roehrig used Gibbs' system for encoding his data. The evidence comes from comparing Roehrig's orthographic conventions to those suggested by Gibbs.

The Gibbs system is based on the Roman alphabet with some additional features to be used for transcribing "unfamiliar" sounds. For example, Gibbs recommended to use of a macron above a vowel to represent a long vowel and a curved breve to represent a short one ($\bar{a}$, $\breve{a}$), and to use a superscript (^{n}) to represent nasals. In his instructions on consonants, Gibbs (1863: 19) asserts that letter *q* is "not to be used: for *qu* write *kw*"; the combination of letters *GH* is to be used for "a sonant guttural aspirate…; other compounds like the clucks occurring in Chinook, &c. , to be represented by *kl, tkl, tlk,* &c., according to their analysis" (Gibbs 1863: 18). The fact that Roehrig adopted Gibbs' system for his vocabulary explains why his data does not differentiate between velars and uvulars; why labialized velars /k^w/ are represented by letters <KW>, and why /ʔ/ is missing from the transcription. At the same time, we observe that Roehrig did not strictly follow Gibbs' orthography: in some cases glottalized stops are written with the additional symbol < ' >, /č/ is represented by <ch> or <tch>, /ə/ is represented by <ū >, and vowel length by doubling the corresponding letters (as seen in examples like

kwūl-la, chah-lish, klatch-ten, klaa-kut). All the words in the vocabulary are divided into syllables, which facilitates the process of reading and analyzing the data. Still, because Roehrig did not offer sufficient explanation of his transcription, it is difficult sometimes to understand what letters or combinations of letters represent which of the Salish phonemes in the manuscript, and it is only by working backward from our knowledge of the modern languages that we can interpret his writing.

5. A Halkomelem puzzle

Among other Salish languages and dialects, the "Vocabulary" contains words from three different dialects of Halkomelem, one of the Central Salish languages of southwestern British Columbia. According to Elmendoff and Suttles (1960) and Gerdts (1977), Halkomelem consists of three dialects: Upriver (Stalo) in the Chilliwack vicinity, the Downriver dialect in the Lower Mainland (area of the delta of the Fraser River), and the Island dialect spoken on southeastern Vancouver Island. Currently, Halkomelem is spoken by around fifty first language speakers of the Island dialect; the other two dialects have few if any living first language speakers (Donna Gerdts, p.c.). In the data compiled at the time when all three dialects were actively spoken, the Halkomelem dialects are represented in Roehrig's work by Nanaimo, a subdialect of the Island dialect, Kwantlen (a subdialect of the Downriver dialect, and Tait, a subdialect within the Upriver dialect.

The question of what was the earliest work on the Halkomelem language deserves special attention here. Hill-Tout (1903: 17), in the preface to his report on the ethnological survey of Canada, states: "thus far no systematic attempt to elucidate the dialectical peculiarities of the Halkome'liim speech, outside of my own efforts, has been made as far as I have been able to learn." However, contrary to Hill-Tout's claim, the first vocabulary that included Halkomelem data goes back to 1841, when J. Scouler published data collected by W. F. Tolmie –"Vocabularies of the northwest coast of North America" that contained, among other Salish languages, the Downriver dialect (Musqueam subdialect) of Halkomelem.[6]

This observation is confirmed by Goddard: "The first extensive information on Salishan languages was Tolmie's vocabularies of Bella Coola, Okanagan, Musqueam Halkomelem, Clallam, and Nisqually Lushootseed" (Goddard 1996: 37). Throughout his later years, W.F. Tolmie continued compiling vocabularies of Indian languages, which he published in 1884 in collaboration with Dr. G. M. Dawson of the Geological Survey of Canada as "Comparative vocabularies of the Indian tribes of British

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[6]Interestingly, Tolmie and Scouler referred to the Halkomlelem as the "Kawitchen" (Cowichan). Scouler as well as other scholars of his time believed that "the Kawitchen tribe…[as it] appears, from an examination of their language, to be a mixed race … as might be inferred from their position, intermediate between the territories of the Okanagans and Nootkans" (Scouler 1841: 225). The same use for "Cowichan" is found in the Tolmie's "Vocabularies": "Kawitchen. Spoken at the entrance of Trading River, opposite Vancouver's Island" (Scouler, p. 242). The explanation of this confusion is offered by Suttles (2004, XXIV): "The Halkomelem language and its speakers were formerly often identified as "Cowichan" (spelled variously) as by Boas (1890: 806; 1897: 320), Hodge (1910, 1:355), and the Department of Indian Affairs (Canada 1970: 28–35), but this usage runs counter to others. Note that the native usage the name "Cowichan" (*qəẃəcəṅ* in the Island dialet) is restricted to the people of the Cowichan River and environs on Vancouver Island, though at one time extended the name "Cowichan" to all of the contiguous Coast Salish north of Puget Sound, including speakers of as many as seven Salishan languages (Tolmie and Dawson 1884; Newcombe 1904; Goddard 1934).

Columbia, with a map illustrating distribution." Among words from other Salish languages and dialects, this work included 240 words from the Nanaimo and Kwantlen subdialects of Halkomelem. The next step in documenting Halkomelem was most likely undertaken by Gibbs in 1858, when he recorded 200 words from what he believed was "the Kwantlen language"[7] (Pilling 1893: 27).

Thus, Roehrig's vocabularies, compiled around 1870, represent one of the first attempts to compare several Halkomelem sub-dialects. Unfortunately, some of Roehrig's records are phonetically or semantically inaccurate. On some occasions, probably due to the absence of a lingua franca between him and his informants, he entered a word with a related meaning for one or more of the subdialects. Since he had no analysis of the inflectional morphology, he sometimes recorded inflected forms of words. Several of his forms are verbs with the first person singular subject clitic pronoun (*cən or cəl*) attached, e.g.

él̓‐tén‐chin (Kwantlen)

and

iíl‐tul‐chel (Tait) (*eat*)

(Part II: p. 81).

In some examples, determiners and possessive pronouns are linked together with a stem as one word:

sen‐taan (mother) (Part II: 4);

ne‐mum‐na (child) (Part II: 5).

Despite the above mentioned difficulties, Roehrig's data generally mirror forms collected in modern times.

5.1 Phonological variation

Proto-Salish /n/ corresponds to Downriver and Island /n/, but to Upriver /l/ (Elmendorf and Suttles 1960). Thus, the Upriver dialect had a total merger of /n/ and /l/. This implies that, at some point in

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[7]The Kwantlen people used to reside primarily in villages near present-day New Westminster, although they occupied many locations along the Lower Fraser. They moved to their main settlement when Fort Langley was established in the 19th century, to control and maintain a trading advantage with the Hudson Bay Company in Fort Langley.

time, the Upriver dialect developed the phonological feature that became the most salient phonological characteristic of the Upriver dialect. The data from the Nanaimo, Kwantlen, and Tait, since they represent speakers from all three dialects, allows a glimpse into the status of the feature in 19th century Halkomelem. Elmendorf and Suttles (1960: 5) propose an isogloss for this feature in the Matsqui-Whonnock area, a view shared by Gerdts (1977). Kwantlen is considered the furthest east of the Downriver subdialects and Matsqui is the furthest west of the Upriver subdialects.[8] So the Kwantlen are at the edge of the isogloss.

According to Roehrig, out of 44 Halkomelem cognates containing /n/ or /l/, the Nanaimo subdialect has /n/ in 43 words and /l/ interchanging with /n/ in one form "knife":

Klatch–ten. (kl and tl interchanging here, l as well as 'l and 'n.)

However, the Kwantlen data show that /n/ is used in only 27 out of 42 words, while in 10 words there is /l/, and in 5 words /l/ and /n/ are interchanging (which does not always coincide with the modern glossing of these words), see for example:

yil liss (with the liquids 'l & 'n interchanged.) (to oth)

laam (go)

Surprisingly, the Tait data reveal that while /l/ was pronounced in 27 out of 40 words, nevertheless /n/ was recorded in nine, while four words were recorded with alternations between the two consonants. See, for example:

te–lik–sen (duck)

naa–tatl (n for l.) (morning)

slatt (with the interchange of the liquids 'l and 'n.) (night)

Today, the merger of /n/ and /l/ is complete; /n/ has completely disappeared in Upriver Halkomelem.

Another interesting observation is made by comparing Roehrig's data to that of Tolmie and Dawson (1884). Even though only fourteen years separate Roehrig's manuscript from the publication of Tolmie and Dawson's work, apparently Tolmie and Dawson had never seen Roehrig's lists, and Roehrig, in his

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[8]The distance between Matsqui and Kwantlen is only around 30 kilometers.

turn, had not been influenced by Tolmie's publication of 1841 (*see* above). Their glosses for the same words are recognizable, but differ significantly phonetically. These differences are especially significant when it comes to the *n/l* feature in the Halkomelem dialects.

The comparison of the above mentioned sources has yielded other words where Kwantlen /l/ in Roehrig's data corresponds to /n/ in Tolmie and Dawson's data. These include: shoes (moccasins), I (me), tooth, and go (*see* the Table below).

Table 1. A comparsion of four Kwantlen words

	Roehrig (1870)	Tolmie and Dawson (1884)
shoes (moccasins)	s'kulk-hyul	sluk-shin
I (me)	ta-al-sa	un̲sē
tooth	yil-liss	yin-nis
go	lā-am	nam

It is not clear what to make of these data, except that the situation in Kwantlen remained very unstable for at least several decades.

An additional complicating factor is that there has also been some sporadic shifting of earlier /l/ to /n/ in some dialects, especially in certain families of the Musqueam subdialect of Downriver Halkomelem (Donna Gerdts, p.c.). The differences in the dialects can be seen in the indigenous name for the language: Island *həl̓q̓əmiṅəm̓*, Downriver *hən̓q̓əmiṅəm̓ or hən̓q̓əmiṅəm,* and Upriver helq̓̇əmeyləm (Suttles 2004: xxiii–xxiv). Roehrig provided the word for "grass" with optional /n/ for Nanaimo (which doesn't coincide with its modern pronunciation); /l/ for Kwantlen and /l/ for Tait; however, Tolmie and Dawson recorded /l/ for that word in Nanaimo and /n/ in Kwantlen.

Roehrig's data:
Grass
Nanaimo: *sah-whun (the liquids 'l' and 'n' being interchangeable)* (Part II: p. 37) (cf. saxʷəl);
cf: Kwantlen: *sach-whul*; Tait: *sach-hwul* (Part II: p. 37).
Tolmie and Dawson's data (1884):
Grass
Snanaimooh: tzāw-hul
Kwantlen: *sa-whun*

The data show that,while /n/ was fairly stable in the Island dialect, there was variation between /n/ and /l/ in both Downriver and Upriver dialects. While /l/ was generally stable on the Island, there was at least one lexical item that allowed /n/ as an alternative form. Thus, the examples above reveal some inconsistencies in /l/ and /n/ merging across the Halkomelem area, which can lead us to the idea that the total merger to /l/ in Upriver Halkomelem happened in the relatively recent past. Roehrig captured a moment in time when this feature was still in transition.

Interestingly, Roehrig's data demonstrate that Nooksack, the neighboring Central Salish to the south, is mostly "an /l/ language": out of twenty-nine Nooksack cognates, twenty have /l/, five have interchanging /n/ and /l/, while only four have /n/:

shmäalt (mountain, stone; also *eggs*.)

'spelh-hal, (the liquids *l* and *n* interchanging.)(val
ley)

(star).

This is an important discovery because it reinforces the point that the change of /n/ to /l/ did not happen all at once and in once place. There could have been some "pockets" in the Nooksack territory where /l/ was dominant, perhaps influenced by neighbouring Chilliwack speakers.

Roehrig's data might be used to study other sound shifts, for example the shift of /s/ to /θ/ and /ċ/ to /t̓θ/. None of the three words for "bone" (*n'sahm/ tes-sah-lum / sum-tsus*) that he recorded match the modern equivalent, cf. Island *sı́ᶿam̓*. However, as his representation of affricates is inconsistent, it is more difficult to be confident about how to interpret his transcription.

Another feature in the described material is the sporadic omission of the nominalizer prefix /s-/ in all three dialects. The described data present the following examples:

Night:
    Nanaimo: *natt*; Tait: ***s-latt*** (Part II, p. 25),
Wind:
    Kwantlen: ***spa-halse***; Tait: *pa-halse;*
    and a radically different word for "wind" in Nanaimo: *s'chuch-hum* (Part II, p. 28).
Thunder
    Kwantlen: ***s'ho-hwahs***; Tait: *ho-hwahss*
Axe
    Kwantlen: *kū-kome-il*; Nanaimo: *skū -kum* (Part II: p. 19).

This observation leads to the claim that the nominalizing prefix /s-/ was not required on certain nouns at the time of the survey. Even today there are differences between dialects and subdialects on the use of this prefix on certain words.

5.2 Lexical divergence

The "Vocabulary" allows us a glimpse into the lexicon of the Halkomelem dialects of the second half of the 19th century, a time when all three dialects were actively spoken. Approximately thirty years after the date of Roehrig's manuscript, Hill-Tout (1903: 3) reported:

> "Indians inhabiting the Lower Fraser District comprise in all some fourteen or fifteen
> separate tribes… Collectively they are known to themselves as the *Halkȏmê'lEm* or
> *Henkȏmê'nEm* people… This division of the Salish is not confined to the Mainland.
> An important branch of it is found on Vancouver Island. … The speech of both

branches, although exhibiting interesting dialectical differences, is mutually intelligible."

In Part II of the "Vocabulary", Roehrig brings into focus the lexical differences in Halkomelem Salish. He suggests that "totally unrelated words" are used across the area where Halkomelem was spoken for the seventeen words listed in the table below. Although it is hard to agree with this position (thorough phonological comparison would reveal that many of these words are related), it would be interesting to compare Roehrig's data with the current distribution of these words in all three Halkomelem dialects.

Table 2. Seventeen items showing lexical divergence in Halkomelem

	English	Nanaimo	Kwantlen	Tait
1	Indians	n'set-whul- mūh	n'shi-ai-ya	ta-whul-le-mūh
2	arm, hand, fingers	chah-lish (arm & hand)	taa-ls	chah-lich (arm)
3	body	s'ee-lush	s'eh-lish	kwul-la
4	toes	s'hun-na-shet	sluch-h'yil	sluch-h'yin
5	warrior	kwam-kūn	k'-kul-lo-wutl	n/a
6	tobacco	spaht-lum	spaht-lum	smāa-lich
7	sky	chee-tsilt	swai-yill	cheh-chil
8	day	tank-skwai-il	t'na-w'ai-ilt	sweh-yil
9	wind	s'chuch-hum	spa-halse	pa-halse
10	ice	speh-ū	spee-ū	slel-lukw
11	island	skw-sass	kl-chaas	kleht'l-chus
12	pine	klaā-kut	lai-yilp	n/a
13	deer	hah-pit	klk-ten-na	smai-ess
14	sturgeon	kwu-toi-sin	kū-tai-sin	kwah-wuts
15	eight	te-kah-cha	tuk-kah-cha	tuk-āat-za
16	knife	klatch-ten	klāatch-til	klaats-tai
17	ear	kwun-nun	kwai-ihe	n/a

The brief comparison of the seventeen words presented in the table above with modern equivalents provided by Gerdts (1977), Gerdts et al. (1997), Suttles (2004), and Galloway (2009) reveals that in some instances the alleged differences between the dialects can be explained by the fact that Roehrig's translation is inaccurate (as in items 1, 5, 7, and 8):

Item1. Indian is *xʷəlməxʷ*. What Roehrig recorded as "Indian" in Kwantlen is merely "friend"/"relative", cf. Island *syeẏə*.

Item 5. Warrior is Island *staməš* Upriver *stó:méx*. Roehrig recorded a word for "strong", cf. Island *ḱʷaḿkʷəḿ*.

Item 7. Sky is Island *skʷeyəl*, Downriver/Upriver *sweyəl*. Roehrig recorded "high above" *cicəł* for Nanaimo and Tait.

Item 8. Day is the same word as SKY. For Nanaimo and Kwantlen instead of the word "day", the phrase *təńa kʷeyəl* "today" was recorded.

On the other hand, in some instances the Vocabulary might be archaic words that are no longer used in Halkomelem area (items 3, 4, 5, 7, 11):

Item 3. The modern word for "body" in Nanaimo and Kwantlen is *sməstímaxʷ* , while *k̓ʷəl̓ə* is reserved for "belly"or "stomach". Thus, *s'ee-lush / s'eh-lish* may represent an archaic word for this concept.

Item 4. "Toe" is Island *snəx̌šən,* which corresponds to *sluch-h'yil/ sluch-h'yin* (interchangeable 'l' and 'n') as recorded by Roehrig. The word *s'hun-na-shet* (Nanaimo) might be an archaism.

Item 6. In the modern Upriver dialect the word *sṗo:tl̓em* ("tobacco") has replaced the old word recorded by Roehrig (*smāa-lich*).

Item 10. The word for "ice" in the Upriver dialect is *spi:w̓* (cf. Nanaimo *spiw̓*); another word for this concept is found in Chemainus, Nanoose area: *sθimaʔ* . Thus, *slel-lukw* provided by Roehrig may be an archaism.

Item 2. In all three of the modern Halkomelem dialects "arm", "hand", and "finger" are separate words, e.g. Island *t̓eləw̓ / celəš / snəx̌cəs*. Therefore, it would be interesting to confirm Roehrig's claim that hand/arm were not distinguished in Nanaimo amd Teit, and that in Kwantlen there was only one word for all of the three concepts.

Nevertheless, many of the dialect differences seen in Roehrig's data (e.g. items 11, 13, 14, 15, 16) can be confirmed in modern sources.

Item 11. "Island" is Island *skʷθeʔ*. The alternate form recorded by Roehrig for Kwantlen (*kl-chaas*) is phonologically similar to the modern Upriver form – *tl'cha:s* (Galloway 2009: 1326). The same cognate is found in Gerdts (1977) for Downriver Halkomelem *ƛ̓'č̓é:s / ƛ̓'č̓és* (p. 202*)*. At the same time, the form provided by Roehrig for Nanaimo (*skw-sass*) may represent the Saanich cognate – *skʷcaʔs* (Gerdts 1977: 202).

Item 13. "Deer" is Island *haʔpət, mawəč* (a word from Chinook jargon), or *sməyəθ (*also "meat"). However, Gerdts (1977) provides two words for deer: *sméis* and *t'liktəna* ("long ears"); it is obvious that the latter is the same word as the one recorded by Roehrig for Kwantlen-*klk-ten-na*. Surprisingly, there is no mention of this word in the Hess's article on the distribution of Central Salish words for 'deer' (1979).

Item 14. "Sturgeon" is *skʷa:wəč ~ skʷawəč* (Galloway 2009: 1583). This form is phonologically similar to what Roehrig recorded as *kwah-wuts*.

Item 15. "Eight" is *teʔcəs* in Island*;* however the form *tqá:ts,* which coincides with the Roehrig's *tuk-āat-za* is provided by Galloway for the Upriver dialect (2009: 735). At the same time, the form *tqɛ́cɛʔ* (cf: *te-kah-cha / tuk-kah-cha*) is also recorded by Gerdts for the Mainland (1977: 200). This form has cognates in Squamish, Northern Puget Salish, Southern Puget Salish, Twana, and Nooksack (Gerdts 1977: 200).

Item 16. "Knife" is *šə́ptən* or *ʔəx̌tən* on the Island (Gerdts 1977: 202), and *lha:ts'tel* in the Upriver dialect (Galloway 2009: 1337). This word is very close phonologically to what Roehrig recorded as *klatch-ten /klāatch-til/ klaats-tai*. This form is also cognate with Squamish *ɬáč'tn* and Sechelt *ɬáč'tən* (Gerdts 1997: 202).

Item 17. "Ear" is *q̓ʷu:n̓* (Chemainus, Nanoose) or *q̓ʷənən̓* (Nanaimo) (Gerdts 1997), and *qw'o:l* (Upriver) (Galloway 2009: 1268). Taking into account the discrepancies in Roehrig's transcriptions, these can be viewed as the same words at the time of the "Vocabulary".

Item 9. Wind *scɑxʷəm* (wind) and *spəhéls* (wind, breeze). In the case of a word "wind", we can observe that both words co-exist in all three dialects with slightly different meanings.

In sum, Roehrig's "Vocabulary" can be valued as a unique document that has passed on to us archaic forms of some Halkomelem words and gives us a glimpse at variation in the dialect continuum. The lexical differences discussed above can be due to the natural language processes, such as lexical replacement and semantic shifting, that have happened in this language in the last hundred years. To get a more complete picture of lexical differences between Nanaimo, Kwantlen, and Tait subdialects in the second half of the nineteenth century, it would be beneficial, perhaps, to compare the available data from the vocabularies by Gibbs (1858) (never published), Tolmie and Dawson (1884), and Hill-Tout (1903) with that of Roehrig; as well as trace the lexical differences within Halkomelem from a diachronic perspective. In sum, Roehrig's "Vocabulary" can be valued as a unique document that has passed on to us archaic forms of some Halkomelem words.

6. Conclusion

Roehrig's "Vocabulary" represents one of the first attempts at creating a comparative vocabulary of Salish languages. It is a relatively sparse resource, reflecting the low level of linguistic knowledge that was available at that time, and an approach to the subject consisting of collecting a short wordlist and then moving on to the next location. In addition, glossing is misleading, morphological parsing is incomplete, and the data phonetically inaccurate. These factors contribute to the relatively limited recognition of the "Vocabulary" by modern scholars. Frederick Roehrig has become a forgotten name in Salish linguistics.

But to Roehrig's credit, the archival materials we have reviewed in this paper are useful resources for the study of Salish languages, as they provide material traces associated with otherwise intangible cultural heritage—the language of indigenous communities and peoples. Today, all Salish languages are endangered. Roehrig's attempt to collect vocabularies of First Nations languages in the Pacific Northwest is still valuable as an historical record, especially as some subdialects on Roehrig's list are already no longer spoken. For example, Roehrig's vocabularies allows us to roll back the clock a century and a half to 1870, a time before tape recordings existed, and catch a glimpse at phonological and lexical shifts in progress in Halkomelem.

Moreover, pioneers in the field such as Professor Roehrig foresaw the importance, urgency, and the magnitude of this endeavour by insisting that "an immense deal has to be done in this domain, the real labors of thorough and exhaustive investigation having not even yet begun." (1872: 16) Thus, linguists of Roehrig's generation were instrumental in establishing the centrality of research on First Nations languages to the field of North American linguistics and anthropology, a mission that resonates with the modern linguist.

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Appendix

From the Smithsonian Institution catalogue record
Three comparative vocabularies of the Salish languages

Creator:	Roehrig, F. L. O., M. D.
Title:	Three comparative vocabularies of the Salish languages
Contained in:	Numbered manuscripts 1850s-1980s (some earlier)
Phy. Description:	149 pages
Bio / His Notes:	One dated November 15, 1870, Ithaca, New York.

Part 1 "Comparative Vocabulary of the [Interior] Salish Languages. No date.
47 pages, approximately 180 terms. Comprative vocabulary of the following Salish languages: "Selish proper or Flathead", "Kalispelm" (Kalispel), "Spokan", "Skoyelpi", "Okinaken" (Okanagan), "Schitsui", "Shiwapmukh" (Shuswap), "Piskwaus" (Pisquows).
Part 2 " II Series. Comparative Vocabulary of the [Coast] Selish Languages." Ithaca, New York, November
15, 1870. 86 pages, approximately 200 terms. Comparative vocabulary of the following Salish languages: "Clallam", "Lummi", "Nooksahk", (Nootsak), "Nanaimooh" (Nanaimo), "Tait", "Poanhooch or Spokomish", "Noo-so- lupsh", "Skagit", "Komookhs".
Part 3 "Synoptical Vocabulary of the [Interior and Coast] Selish languages (comprising the languages which are more exclusively treated in the 2nd Series of Comparative Vocabulary....)." No date. 16 pages, approximately 190 terms. Comparative vocabulary of the following Salish languages: "a) Clallam", "b) Lummi", "c) Nooksahk" (Nottsak), "d) Nanaimooh" (Nanaimo), "e) Kwantlen", "f) Tait", "g) Toanhooch", "h) Noosolupsh", "i) Skagit", "k) Komookhs" (Comox), "l) Kwinaiutl", "m) Cowlitz", "n) Chemakum", "o) Belhoola (Bella Coola), "p) Lilowat", "q) Nikutemukh" (Couteaux or Samena) "Nikutemukh," "a name corrupted by the Canadians into

Summary:	Couteaux, also called Samena."--cf. Gibbs' notes, Manuscript Number 742.
Provenance:	"Sent to Bureau of American Ethnology June 6, 1928 by Franz Boas, had apparently been in his possession for some time."--note on old catalog card.
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