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# JOURNAL OF NORTHWEST ANTHROPOLOGY

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<i>The Hudson's Bay Company 1839 Fort Vancouver Censuses of Indian Population</i> Daniel L. Boxberger.....	1
<i>Umpqua/Eden Revisited: Notes on the Archaeology and Ethnohistory of a Lower Umpqua Indian Village on the Central Oregon Coast</i> Rick Minor, Don Whereat, and Ruth L. Greenspan.....	39
<i>Lamprey "Eels" in the Greater Northwest: A Survey of Tribal Sources, Experiences, and Sciences</i> Jay Miller.....	65
<i>Russian and Foreign Medical Personnel in Alaska (1784–1867)</i> Andrei V. Grinëv.....	85
<i>Debating the Complexity of Clovis: Insights into the Complexity Paradigm</i> Justin Patrick Williams.....	115

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# JOURNAL OF NORTHWEST ANTHROPOLOGY

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## THE HUDSON'S BAY COMPANY 1839 FORT VANCOUVER CENSUSES OF INDIAN POPULATION

Daniel L. Boxberger

### ABSTRACT

The Hudson's Bay Company *Census of Indian Population for 1839* provides a reference point to analyze the intergroup relations in the area adjacent to Fort Vancouver in the mid-1800s. This era saw the diminution of the Chinook and the ascendance of the Klickitat intertwined with the struggle for colonial control between the Hudson's Bay Company and the American settlers. There has been much misunderstanding concerning the aboriginal inhabitants of this region, from the beginning of American settlement to the present. An interpretation offered here suggests successive movements of Klickitat into the area from the northeast, which led to increased tensions among the settler populations and a conflation of different Native identities. Claims of preeminence were bolstered by competing interpretations of the rightful aboriginal owners of the land. An official copy of this primary source, obtained at the Hudson's Bay Company Archives, and its transcription offers a glimpse of the American Indian inhabitants in present-day Clark County, Washington, during this critical period of history.

### Introduction

I have known about the Hudson's Bay Company *Census of Indian Population 1839* for years, in its many and varied forms (Hudson's Bay Company 1839). I have used parts of it in the past for specific projects I was working on but the potential value of the information it holds was lost on me. It was not until I was asked by the Confederated Tribes of Grand Ronde to look into the question of the heirs of succession of the Willamette Valley Treaty (Treaty With the Kalapuya, Etc, 22 January 1855, 10 Stats., 1143) that I revisited the *Census*, and in particular the Fort Vancouver Section, and was suddenly struck by the value of the information it contained. It was then that I decided that I must consult the original in the Hudson's Bay Company Archives, in Winnipeg, Canada.

At Winnipeg I obtained three censuses made in the area surrounding the Hudson's Bay Company's Fort Vancouver, located north of present-day Portland, Oregon. The Klickitat census was the largest and most comprehensive, and describes the population that was living to the north and east. The Cath La-Cana-Sese and the Cath-Lal-Shlahah censuses describe the Chinook population living to the south of the Fort. Analyzed together, the Fort Vancouver censuses provide insight to the movement of peoples and intergroup relations during this critical period of history.

## The Columbia District Indian Census of 1839

The complete *Census of Indian Population 1839* consists of 53 "folios" that list the names of the adult male population and the number of family members for many tribes in the Hudson's Bay Company, Columbia District (Fig. 1). Most of the folios are written by the same hand and were obviously copied from other documents. Leland Donald (1997) points out that virtually all of the systematic population estimates for the Northwest Coast before 1880 comes from the censuses conducted by Hudson's Bay Company officers and compiled by James Douglas. He notes that "most are estimates, some made during or after a visit to a community but many others based on secondhand information, usually obtained from visitors to the post. It is best to regard all of the reports as estimates, although some of the estimates are clearly much better than others" (Donald 1997:183).

It is somewhat of a mystery why the *Census* was conducted, who ordered it, and what it was meant to accomplish. Douglas's correspondence suggests that the data were collected at the request of the Governor and Committee of the Hudson's Bay Company in London.

This is all the information I have been able to collect from private sources respecting this survey of the population, prospects of trade and other interesting points, I am currently unable to form any opinion until the arrival of Chief Trader Works report, in the Autumn. (Douglas 1839a)

The *Census*, however, only covers particular areas of the Columbia District. In addition to the area immediate to Fort Vancouver, censuses were prepared for Connolly's Lake, Babine Post, McLeod's Lake, Fort George, and Chilcotin Post, New Caledonia; Stuart's Lake and Fraser's Lake, Western Caledonia; Fort Alexandria; Cape Scot to Point Mudge (total population only); Fort Nisqually (total population only); and Fort Langley.

The *Fort Langley Census* was conducted by James Yale, and was likely the model followed when conducting the *Fort Vancouver Census*. In a letter to Yale, Douglas acknowledged receipt of the *Fort Langley Census* "Which is one of the most complete statistical accounts I have ever seen" (Douglas 1839b). Covering the area from Widby's Island to Point Roberts and across Vancouver's Island to Simpson Falls on the Fraser River, this latter census included a listing of the names of the adult male population and "Wives, Sons, Daughters, Followers, Canoes and Guns." The following groups were enumerated: Skadchads, Wholumie, Eusauke, Sinayamie, Eusanich, Samus, Cowaitchin, Nannimoes, Nonouse, Tsilholt, Tseashalt, Slohose, Skohomus, Misquiams, Quatlains, Smaise, Chilwaook, Cheenus, Lilliwhit, Pallalt, Steatan, Teats, Humcenah, and Qualthen. A table of the population from Skadchats to Qualthens completes the document.

Portions of the *Census of Indian Population for 1839* have been published, the *Census of Indian Population in Fort Nisqually District* was published with discussion by Herbert C. Taylor (1960; 1963), and the portion of the *Fort Langley Census* that enumerates the Halq'eméylem-speaking population was published in *A Stó:lō-Coast Salish Historical Atlas* (Carlson 2001:79).



Fig. 1. Hudson's Bay Company Columbia District, 1839, showing locations mentioned in the *Census of Indian Population 1839*. Map created by Nora Pederson.

## The Fort Vancouver Section

The Fort Vancouver section of the *Census of Indian Population for 1839* under consideration here was probably done after May 1839. It follows the Yale *Fort Langley Census* in enumerating adult males by name, wives, sons, daughters, followers, canoes, guns, and horses. The Fort Vancouver census apparently was part of a compilation emanating from Fort Vancouver that included Fort Langley, Fort Nisqually, and Fort George, and the "interior posts," but the Fort George and interior post sections have not been located. Exactly who conducted the *Fort Vancouver Census* is not in the record, but I suspect it was William F. Tolmie, an employee at the Fort. Tolmie, noted figure in the Hudson's Bay Company era, is most remembered for his role at Fort Nisqually, 1843-1859, during which time he was instrumental in developing agriculture in the south Puget Sound area. Dr. Tolmie was head of the Puget's Sound Agricultural Company, a subsidiary of the Hudson's Bay Company.

In 1838 John McLoughlin reported to the Governor and Committee that

According to Request I Beg to forward with the census of the native population about Vancouver Fort Langley Nisqually and Fort George—and the officers in charge of the posts in the Interior are instructed to Deliver the census of the native population about their Respective Establishments to Mr. Dougald McTavish who will forward them to you with this. The census from the Establishments on the coast will be here only this fall when it will be sent you by the *Cowlitz*. (Rich 1944:70–71)

Rich points out that this census record has not been traced, but in the “Census of the Indian Tribes in the Oregon Territory from Lat. 42° to Lat. 54° 40’ North derived from the Trading Lists of the H.B. Company and from the best obtainable information,” enclosed by Lieutenants Warre and Vavasour in their letter to the Secretary of State for the Colonies dated Fort Vancouver, 1 November 1845, the total Indian population is given as 86,948, so they obviously had access to the census data while visiting Fort Vancouver (Rich 1944:70–71). A copy of this census record is printed in Martin (1849:80–82) and Schafer (1909:61). A fuller census record compiled from estimates made in 1838 and later is to be found in Warre and Vavasour to the Secretary of State for the Colonies, Fort Garry, 16 June 1846, and part is used in Kane’s, *Wanderings of an Artist among the Indians of North America* (Kane 1859:Appendix). In 1840 the missionary John Frost was shown a census of three Chinook villages around the mouth of the Columbia River by James Birnie, who was in charge of the Hudson’s Bay Company post at Fort George. Frost notes that the census was collected in 1838 (Pipes 1934:58).

The official copy of *Census of Indian Population for 1839* at the Hudson’s Bay Company Archives in Winnipeg, Canada, consists of 53 folios placed inside of a cardboard folder with no further information in respect to provenance or purpose. When I first held this document in my hand I realized that it was not a typical report from the Columbia District. It was clean and crisp, even after 170 years. It did not have the stains, burn marks, and corrections so typical of dispatches from the “country.” It struck me that it was obviously a copy made in the same hand from reports sent to Hudson’s Bay Company headquarters, compiled from the many and disparate population reports scattered about in different repositories.

## The Fort Vancouver Censuses

In the “official” copy, Folio 15, the *Census of Indian Population at Fort Vancouver*, consists of six pages of information on three folded pages numbered 26, 27, and 28. A copy is filed at the Provincial Archives of British Columbia in Victoria, British Columbia, under the heading *Fort Vancouver (Columbia District) Miscellaneous, 1838–1839: Indian Census, 1838–1839*, (Hudson’s Bay Company 1838–1839) which appears to be a copy of the Winnipeg copy, not a copy of the original data sent to London. Some of the data are also included in James Douglas’s papers at the Provincial Archives of British Columbia under *Indian Population and Statistics: Notes on traditions and populations of the Indians of the Northwest Coast* (Douglas 1840s). There is also a compilation of much of the 1839 Census in the Private Papers of Sir James Douglas in the Bancroft collection, University of California, but the Fort Vancouver data is not included there. In this compilation, probably written in 1853, Douglas discusses the general process of the census gathering.

Census of the Indian population on the NW. Coast as far as could be ascertained collected at different times for some years back, from different sources of the best information. It is difficult to get correct information on the subject. The Tribes are often known among their neighbors by different names sometimes they bear the name of their Chief sometimes of the place where they generally reside and by other designations. But as this has been collected with great care, and much trouble it is perhaps as near the truth as can be well ascertained under existing circumstances as far as it goes. (Douglas 1853:25)

It is reasonable to conclude that there are scattered census data, many of which have not been located, and that the “official” copy of the *Census of Indian Population 1839* was compiled from these diverse sources.

It is the three censuses of the groups adjacent to Fort Vancouver that are the subject of this article: the Sahaptin-speaking Klickitat, and two Chinook-speaking groups, the Cath La-Canasese and the Cath-Lal-Shlalah. These three tabulations are particularly interesting because they document the transition from a Chinook-controlled territory to a Klickitat-dominated territory in the area of present-day Clark County, Washington. The censuses were conducted shortly after the epidemics of 1830–1833, which profoundly impacted the Chinook, reducing their population by upwards of 90%.

The censuses mark the preeminence of two Chinook villages on the Columbia River near Fort Vancouver, which were the consolidation of other villages recently depopulated. These two Chinook villages represent two of the “Columbia River Tribes” that were party to the Willamette Valley Treaty and consolidated on the Grand Ronde Indian Reservation in 1856. The Klickitat census tabulates the population that became dominant in the area adjacent to the Fort and was beginning to expand into the Willamette Valley. This band, or bands, of Klickitat would eventually be removed to the Yakama Indian Reservation although they were not part of the Klickitat bands who were signatory to the Yakama Treaty (Treaty with the Yakama, 9 June 1855, 12 Stat. 951).

The original census is reproduced here (Figs. 2, 3, 4, 5) with accompanying transcriptions (Tables 1, 2, 3, 4). While every effort was made to ensure each transcription is accurate, including checking it against the original, undoubtedly errors have crept in. Comments on the individuals noted and the importance of the data comprise the analysis that follows.

### *The Kliketat Census*

Dr. William F. Tolmie claimed credit for the number of Klickitats that were resident about Fort Vancouver. In a letter to Joseph Howe, Secretary of State for the Provinces and Superintendent of Indian Affairs, recounting his experience working with Indians, Tolmie boasted that “. . . the various tribes known on the Columbia River as Klikatats had by this time [1836 to 1841] so much changed their notions that the Company’s large fields were mostly ploughed by Indians, who around Vancouver were friendly and useful in every way possible.” In an 1878 letter to Mrs. F. F. Victor, regarding her inquiries on early Oregon history, George Roberts recalled that “we employed a great many Indians at Vancouver often 8 to ten ploughs & as many harrows running with them—mostly of the Thlicatat tribe, those Indians were hunters and root diggers & were kept away from the Fort by the river Indians until Dr Tolmie was trader & took a kindly interest in them. The Doctor (McLoughlin) was proud of having so many Indians employed & always held out to the missionaries that that was the way to civilize them to teach them to work” (Roberts 1962:183).

No 15  
Census of Indian Population  
at Fort Vancouver  
Kliketat Side

26

N <sup>o</sup>	Indian Name	Wm	Ind	Chryso	Wh	Pop	Cons	Wm	Ind
1	Wattamchi	1	1	1		4	1	2	Blue Jacket, Hunter
2	Stout:chan	1				2	2	1	
3	Wap:toth:loh	1	1			2	1	1	
4	Wah:muy:muy	1	1	1		4	1	2	Trapper
5	Wash:cen:us				2	3	1		
6	Ten:huch	1	1			3			
7	Alapayo	1	3	1		6	2	1	Trapper
8	Cow:th:na:pukis	1	1		1	4	1	2	Trapper
9	Sack:ielach	1				2	1		
10	He:um:ma:chie	2	1	3	1	1		1	Trapper
11	Stuy	1	2	1		3			
12	Wallech:pyke	1		1		3	1	1	
13	Gullenush			1		3	1		
14	Sack:ielach	1				2			
15	Shak:nap:tham	1				2	1	1	
16	Pap:stul:han	1	1	1		4	1	1	
17	Cow:huch	1	1			3			
18	Syapay	1	2			4	1	2	Beaver Trapper
19	Sela:ba:st	1		1	1	4			
20	He:um:ma:chie	2	2	3		7	3	3	Beaver Trapper
21	Teesh:chat	1		1	2	2			Beaver Trapper
22	Knas:se	1		1		2	2		Trapper
23	Pal:us	1		1		3	1		Trapper
24	Thin:quid	2	1	1		5			Beaver Trapper
25	He:um:ma:chie	1				2			
26	Wet:ach	1	1			3	1		Trapper
27	Pal:us	1	1	1		4	2	2	Beaver Trapper
28	Wet:ach	1	2	1		5	1	1	Trapper
29	Wet:ach	2	2	1	1	7	1	2	1
		32	14	21	8	113	15	23	25

Fig. 2. Page 1 of the Kliketat Census of the Fort Vancouver section of the Hudson's Bay Company Census of Indian Population, 1839.

TABLE 1. PAGE 1 KLIKETAT CENSUS OF THE FORT VANCOUVER SECTION OF THE HUDSON'S BAY COMPANY CENSUS OF INDIAN POPULATION, 1839.

Nº 15

26

**Census of Indian Population  
At Fort Vancouver  
Kliketat Tribe**

No	Indians Name	Wives	Sons	Daughters	Followers	Total Population	Canoes	Guns	Horses	
1	Wattamchi	1	1	1		4		1	2	Horse Jockey & Gambler
2	Slouta Chun	1				2	2	1		
3	Wap-tath lah	1	1			3		1	1	
4	Wah-muy-muy	1	1	1		4		1	2	Deer Hunter
5	Wash een nis				2	3		1		D°
6	Ton-hinch	1	1			3				
7	Aleepayo	1	3	1		6	2	1		Canoe maker
8	Ow-cha na pikes	1	1		1	4		1	2	Deer hunter
9	Sach leilach	1				2		1		
10	Wee um machie	2	1	3	1	8			1	Killed in fray 1838
11	Stehye	1	2	1		5				
12	Wallachpyke	1		1		3	1		1	
13	Yulowash	1		1		3	1		1	
14	Paclaleiwit	1				2				
15	Shah-wap-sham	1				2		1	1	
16	Papsteileh	1	1	1		4	1		1	
17	Kew hugh	1	1			3				
18	Syapas	1	2			4	1	2		Beaver Trapper
19	Tola-ha wit	1		1	1	4				
20	Mee ouwachie	2	2	3		7	3	3	7	Beaver Trapper
21	Teesh chat	1		1	2	5				Deer Hunter
22	Kas-as-see	1		1		3		2		D°
23	Pal was	1		1		3		1		D°
24	Thlin queet	2	1	1		5				Beaver Trapper
25	Wa-moola-shat	1				2				
26	Meetzah	1	1			3		1		Committed suicide 1838
27	Yul eet zin	1	1	1		4		2	2	Beaver Trapper
28	Keal-lach	1	2	1		5	1	1	1	D°
29	Kawasyach	2	2	1	1	7	1	2	1	
		32	24	21	8	113	13	23	23	

No.	Indian's Name	Men	Boys	Children	Women	Grand Total	Men	Boys	Children	Women	Remarks
30	Lavial	1			3	115	1				
31	Shumleach	3		3	1	8					Trapper
32	Yech. Shannat	1				2					Beaver Trapper
33	Shag. nat	1			2	4	1				
34	Shan. nat	1		1	1	4				3	Trapper
35	Shan. nat	1	2			4					
36	Shannat	2	1	1		5					
37	Shag. nat	1	1	1		4					
38	Shag. nat	1	1		3	1					
39	Shag. nat	2	2	3		5				3	
40	Shag. nat		1	1		3					
41	Shag. nat	1	2	2	1	7				1	
42	Shag. nat	1	2			4					
43	Shag. nat	2	1	2		4				2	
44	Shag. nat	1			2	4				1	
45	Shag. nat	2		1	2	4				1	
46	Shag. nat	1	1		2	5					
47	Shag. nat	1		1		3					
48	Shag. nat				1	2	1				
49	Shag. nat	1	2	3	1	8				1	
50	Shag. nat	1				2				1	
51	Shag. nat	1	2	1		5					
52	Shag. nat	1		1		3					
53	Shag. nat	1	2	1		3				1	
54	Shag. nat	1	1	1	1	5					
55	Shag. nat	1	1	1		4					Beaver Trapper
56	Shag. nat	1	1	1		4					
57	Shag. nat	1	1	2		5				3	Beaver Trapper
58	Shag. nat	1	3			3				3	
59	Shag. nat	2	1	1	1	1				1	
60	Shag. nat	1				2				1	
61	Shag. nat	1	2	1	1	2				4	
		66	52	51	30	162	18	45	50		

Fig. 3. Page 2 of the Kliketat Census of the Fort Vancouver section of the Hudson's Bay Company Census of Indian Population, 1839.

TABLE 2. PAGE 2 KLIKETAT CENSUS OF THE FORT VANCOUVER SECTION OF THE HUDSON'S BAY COMPANY CENSUS OF INDIAN POPULATION, 1839.

No	Indians Name	Wives	Sons	Daughters	Followers	Total Population	Canoes	Guns	Horses	Remarks
		32	24	21	8	113	13	23	23	
30	Caniat	1			3	5		1		
31	Stimeilooch	3		3	1	8		1		Gambler
32	Yooch-shamat	1				2		1	1	Beaver Trapper
33	Shy o mit	1			2	4	1	1	1	
34	Wian a shat	1		1	1	4		1	3	Deer hunter
35	Yew an chanweeh	1	2			4		1	1	D°
36	Skannewah	2	1	1		5			2	
37	Cashie	1	1	1		4				
38	Steh ha wit	1	1		3	6				
39	Tah we tax	2	2	3		8		1	3	
40	Tewlah	1		1		3		1		
41	She past	1	2	2	1	7		1	1	
42	Schat leim	1	2			4				
43	Pat weh	2	1	2		6		2		
44	Too-wel-pie	1			2	4		1		
45	Sque ama chan	2		1	2	6		1		
46	Con kie	1	1	2		5				
47	Waha na ney	1		1		3				
48	Ca na sach				1	2	1		1	
49	Wach ta sin	1	2	3	1	8		1	1	
50	Tap na wash	1				2		1	1	
51	Seem quilh	1	2	1		5				
52	Sca ma cah	1		1		3				
53	Quan qua na mish	1	2	1		5		1		
54	Step cheh	1	1	1	1	5				
55	Wiey puch	1	1	1		4	1	1	1	Beaver trapper
56	Sno chits	1	1	1		4		1		
57	Sawa keis	1	1	2		5	1		3	Beaver trapper
58	Mulla Mullah	1	3			5	1	1	3	D°
59	Lalamahan	2	1	1	1	6		1		D°
60	Wanashie	1				2		1		
61	Squinum	1		2	1	5		1	4	
		66 <sup>1</sup>	52	50 <sup>2</sup>	30	262	18	45	50	

<sup>1</sup> I count 37 in this column, added to 32 from the previous page would total 69.

<sup>2</sup> I count 30 in this column, added to 21 from the previous page could total 51.

										27
	Indians Name	Chiefs	Men	Boys	Girls	Total Population	Canoe	Gun	Blow	
	Continued	66	32	38	31	262	15	22	50	
62	Kamehapie	1				2	1	1		
63	Kalamah	1				2				
64	Kameksee		1			2			1	138
65	Katchie	1	2	1		5		2		138
66	Melah	1	1	1		4	1	1	1	138
67	Katchie	1		1		3	1	2		138
68	Channataw	1	1	2		5				
69	Katchie	2	2			5				
70	Katchie	1		1		3		1		
71	Katchie	1		2	1	6				
72	Katchie	1	4	1		7	1		1	138
73	Katchie	1				2				
74	Katchie	2				5	1	1	1	
75	Katchie	1	2			4		1		
76	Katchie	1	2			4				138
77	Katchie	1		1		3				138
78	Katchie	1	1	1		4		1	2	138
79	Katchie	1	1			3	1	1		
80	Katchie	1	3	1		6		1		
81	Katchie	2	3			5		1	2	138
82		68	77	63	33	345	24	38	67	
83										
84										
85										
86										
87										
88										
89										
90										

Fig. 4. Page 3 Kliketat Census of The Fort Vancouver Section of the Hudson's Bay Company Census of Indian Population, 1839.

TABLE 3. PAGE 3 KLIKETAT CENSUS OF THE FORT VANCOUVER SECTION OF THE HUDSON'S BAY COMPANY CENSUS OF INDIAN POPULATION, 1839.

27

No	Indians Name	Wives	Sons	Daughters	Followers	Total Population	Canoes	Guns	Horses	
	Continues	66	52	50	30	262	18	45	50	
62	Hamshapie	1				2	1	1		
63	Calapisk	1				2				
64	Wach-askie		1			2			1	Died 1838
65	Watch-allie	1	2	1		5		2		Deer hunter
66	Metats	1	1	1		4	1	1	1	Beaver trapper
67	Wo it a mash	1		1		3	1	2		D°
68	Channatux	1	1	2		5				
69	Pacha wa tash	2	2			5				
70	Twe-pietie	1		1		3		1		
71	Nanny-as	1		3	1 <sup>s</sup>	6				
72	Sach a leim	1	4	1		7	1		1	Beaver trapper
73	Yath a nash	1				2				
74	Yack as Keilah	2			2 <sup>s</sup>	5	1	1	6	
75	Tama leileh	1	2			4		1		
76	Tech y lak	1	2			4			2	Man of Medicine
77	Wulpassee	1		1		3				D°
78	Qut leh	1	1	1		4		1	2	Horse dealer
79	Stath la mecoh	1	1			3		1	1	
80	Wa no watch	1	3	1		6		1	1	
81	Tuchsa pie	2	5			8		1	2	Beaver trapper
82		88 <sup>1</sup>	77	63	33 <sup>2</sup>	345	24	58	67	

<sup>1</sup> This total should be 91 given the correction noted above.

<sup>2</sup> Initially I thought the superscript was a "5" as in 1.5 slaves, perhaps suggesting co-ownership or partial freedom. After reviewing the original and consulting other information I have come to the conclusion that it is an "S." I have several reasons for believing so. First, in scrutinizing the original it was clear that the superscript was not similar to the number 5s elsewhere in the document. Second, elsewhere in the document where a superscript appears a printed, capital letter is employed, i.e., in the Cath-lal-shlah census number 8 Che chum nak <sup>A</sup> and number 11 Chechum nak <sup>B</sup>. Third, the numbers don't add up if 0.5 is assumed, but the columns add up correctly using the whole numbers. Fourth, no other census used this designation. Fifth, in the Cath-lal-shlah census number 21 Qualthanash is noted as a "Liberated Slave," the total for his family is designated 2<sup>s</sup>. Sixth, in 1837 Douglas was directed to put an end to slavery in the vicinity of the Hudson's Bay Company posts. A letter from Hudson's Bay House to Douglas stated that "even the Term "slave" must on no consideration or account be applied to any inmate or resident of the Company's establishments" (Hudson's Bay Company 1837). The Columbia District officers were under pressure from London to account for the alleged practice of slavery. The missionary Herbert Beaver, in residence at Fort Vancouver from 1836 to 1838, accused Hudson's Bay Company employees of participating in the slave trade. McLoughlin had to account for the accusations. After 1834 it was illegal for British subjects to hold slaves (Donald 1997: 240-243). The Hudson's Bay Company employees had to be careful about how the issue of slavery was put in the official record. In a letter to the Governor and Committee John McLoughlin explained Columbia District policy. "The plan I now follow, of considering every person without distinction, residing on our premises as free British subjects, who may at any time, under the Company's protection, assert the exercise of their absolute and legal rights, will greatly mitigate the evils of slavery" (McLoughlin 1838). The foregoing leads me to the conclusion that the superscript "S" is code for slaves. It is not clear why "followers" and individuals enumerated with the superscript "S" are differentiated in the censuses. Most discussions of the Hudson's Bay Company 1839 census assume followers means slave, however, it is clear something else is going on that we still have not identified.

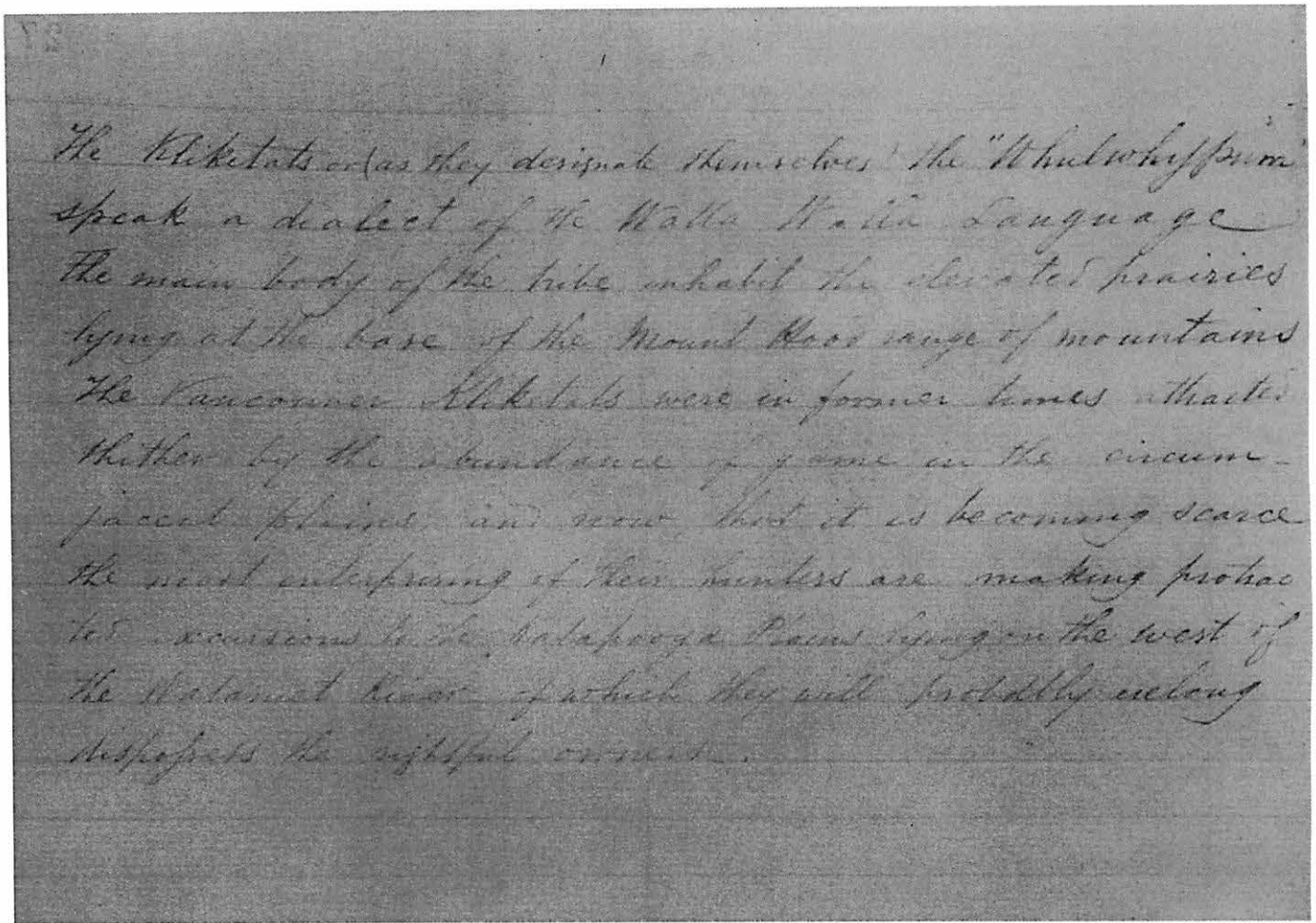


Fig. 5. Page 4 Klikitat Census of the Fort Vancouver Section of the Hudson's Bay Company Census of Indian Population, 1839.

TABLE 4. PAGE 4 KLIKETAT CENSUS OF THE FORT VANCOUVER SECTION OF THE HUDSON'S BAY COMPANY CENSUS OF INDIAN POPULATION, 1839.

The Klikitats or (as they designate themselves) the "Whulwhypum" speak a dialect of the Walla Walla Language.  
 The main body of the tribe inhabit the elevated prairies lying at the base of the Mount Hood range of mountains.  
 The Vancouver Klikitats were in former times attracted thither by the abundance of game in the circumjacent plains and now that it is becoming scarce the most enterprising of their hunters are making protracted excursions to the Kalapooya Plains lying on the west of the Walamat River of which they will probably ere long dispossess the rightful owners.

While Tolmie certainly encouraged Klickitat involvement with fur trade economy, Klickitat movements into the area had been going on long before Fort Vancouver was established in 1825. The well-used Klickitat Trail, which crossed the Cascade Mountains from Trout Lake to the Lewis River, was utilized for trade with the Chinook and for hunting, trapping and gathering (see Norton, Boyd and Hunn 1983; 1999). Alexander Henry (1992:715) noted on April 9, 1814, that “the Mount St Helens Indians were assembled on the Columbia, on their way to the Willamette to hunt deer this summer, as they usually do.” With the diminution of the Chinook population along the Columbia River and the Kalapuya population in the Willamette Valley in the 1830s, the Klickitat were poised to move into the area permanently, eventually expanding as far as the Umpqua and Coquille Valleys in southern Oregon.

Two villages of Klickitat near Fort Vancouver were identified by George Gibbs in 1853. Gibbs recorded his information in consultation with Tolmie but Tolmie had left Fort Vancouver in 1841 and so his village site information more likely correspond to the situation as it existed in 1839. Tolmie was at Fort Vancouver for brief periods in 1833 and 1843. He was stationed at Fort Vancouver from 1836 to 1841 (Tolmie 1963). See Table 5 for a true transcription of Gibbs’s place names near Fort Vancouver (Gibbs 1853).

Of the seven villages in Gibbs’s list, two, possibly three, are identified as Klickitat (it is not clear if Scap-poose is a Klickitat village or a Klickitat place name for Ka-se-no’s former village). We know that there were Klickitat villages at Fourth Plain and LaCamas Prairie and possibly others. Some information is referenced from Yahotowit who was a Taidnapam Klickitat leader in the area in the 1850s (discussed below). It is not clear which village or villages comprise the 1839 census. Historically there were at least four Klickitat villages near Fort Vancouver, but how many of these were extant in 1839 is not certain. It is likely that the main concentration was at Fourth Plain where Tolmie was most interested in establishing farming operations. The 1856 General Land Office T2N R2E map shows an Indian Village in Section 5 on Fourth Plain, it was most likely Klickitat (General Land Office Records 1856). By that time, however, it was probably a Klickitat village with both Xwalxwaipam and Taidnapam Klickitat families.

“Xwalxwaipam,” is from the village name at the junction of the Little Klickitat and Klickitat Rivers. “In these early years what may be regarded as the centre of their territory was in the vicinity of the fall of Clickitat creek near its injunction with the larger stream of that name. The place they called Hwáhlhwai, and themselves Hwáhlhwaipūm” (Curtis 1911a:37–38).

The Xwalwaipam Klickitat expansion noted in the comments in the Fort Vancouver census would be reiterated by George Gibbs sixteen years later and the US Government would consider the Klickitat interlopers in the area west of the Cascades, eventually removing them to the Yakama Reservation:

After the depopulation of the Columbia tribes by congestive fever, which took place between 1820 and 1830, many of that tribe made their way down the Kathlapūtl (Lewis River), and a part of them settled along the course of that river, while others crossed the Columbia and overran the Willamette Valley, more lately establishing themselves on the Umkwa. Within the last year (1855), they have been ordered by the superintendent of Oregon to return to their former home, and are now chiefly in this part of the Territory. The present generation, for the most part, Look upon the Kathlapūtl as their proper country, more especially as they are intermarried with the remnant of the original proprietors. (Gibbs 1877:170–171)

As early as 1851, the Superintendent of Indian Affairs for Oregon Territory would note “For a distance of about eighty miles from the Cowlitz River to the Cascades there are now no real

TABLE 5. INDIAN NOMENCLATURE OF LOCALITIES IN WASHINGTON &amp; OREGON TERRITORIES: CHINOOKAN AND SALISHAN.

? Klikatat	Wilt-Kwil-lut, village a little below Rainier (Yahotowit)
	Nai-a-kook-wie, Ne-ah-ko-koi, Tolmie. Village of St. Helens
	Scap-poose. The creek at Milton, emptying into the Willamet slough. It was formerly <del>Chenas</del> Ka-se-no's village.
Tolmie	Nah-mun-ne-min. S. side Sauvie's I.
	Wilt-Kwu, (Klik). Vill. At mouth of Cathlapootl, or Lewes' R. and also the lower part of the river. How - it' h Tolmie, Cow-ilk, Franchere Tolmie makes Wul-tuk <u>Klik</u> I-Now-ilth Chinook
	Wah-wa-chih-as ( <del>Klik</del> ) "the oaks", or "place of oaks" Tolmie. Around Lewes house, near the Cathlapootl. (Klikatat.)
	Cath-la-pootl. Franchere gives this name to the vill. At mouth of the Wilt-kwu. Tolmie thinks it is the mouth of Lake River. It is Chinook not Klikatat. The name was obtained for Wilt-kwu river.
	Cha-la'h-cha, "fern," The prairie on the Cathlapootl.
	Ya-Kohtl South fk of Cathlapootl.
	Mult-na-bah. (Mult-no-mah) Two villages below mouth Of the Willamet Franchere
	Willamette R. (Infra) properly spelt Wa-la'met
	Cath-la-nam-i-min (Yahotowit). A vill. a little below where Portland now stands.
	Wa-kan-a-sis-se Village on the N. side Columbia, nearly opposite mouth of Willamet.
	Skits-out-kwa Tolmie. Site of Ft. Vancouver.
	At-a-snca-kas ("place of turtles") the low ground above the Fort. <u>Klik</u> . Tolmie.
	Wut-se-a'i-as <u>Klik</u> . Mile Creek. Tolmie.
	Wash- se - shoo-kul, Washugal R.
	Is-a'h-lich, the prairie a little above Switzlers', opposite Ft. Vancouver. Tolmie, <u>Klik</u> .

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Source: Gibbs 1853. True transcription of Gibbs's field notes on Chinookan and Salishan place names.

owners of the land living. It is occupied by the Vancouver Indians, of whom it will have to be purchased" (ARCIA 1851:204). Although the term "Vancouver Indians" has frequently been applied to any Native people in and around Fort Vancouver, it was usually intended to refer to the Klickitat. Despite this observation, there were indeed Chinook still in the area, descendents of the original inhabitants who would later be party to the Willamette Valley Treaty.

Joel Palmer, Superintendent of Indian Affairs for Oregon Territory during the tumultuous years from 1853 to 1857, recognized the recent movement of the Klickitat into the Willamette Valley. In his earliest report to Commissioner of Indian Affairs George Manypenny, Palmer

voiced concern over this Klickitat expansion (ARCIA 1853). In 1854 the Klickitat paid a visit to Indian Agent Edward Geary to defend their rights to “traverse the Willamette and Umpqua Valleys and to reside in this country for the purpose of trade and hunting.” A right they stated they had bought from the Kalapuyas “many years ago.” “Many years ago” may date back to 1832 when the Hudson’s Bay Company established a post on the Umpqua River, in which the Klickitat likely participated. While the Klickitat defended their rights to the Willamette and Umpqua Valleys to traverse and hunt, they also admitted they did not own the country. The Klickitat informed Geary that the country of their tribe was north of the Columbia River and expressed their interest in negotiating a treaty for those lands (Geary 1854). The Yakama Treaty, however, was negotiated in the absence of the Vancouver Klickitat. Although Klickitat are named in the treaty the ceded lands do not include the area claimed by the Xwalwaipam Klickitat. The Klickitat were agitated at the neglect of their input at the Yakama Treaty negotiations and chose not to participate in the Willamette Valley Treaty negotiations (Palmer 1855b). Shortly after negotiating the Willamette Valley Treaty (22 January 1855), Palmer received complaints from settlers about intrusions and indicated their understanding that the Klickitat would be returned to Washington Territory. For example, in a letter to Joel Palmer, settlers of the Coquille Valley complained of the Klickitats killing all of the elk in the valley, threatening that if the proper authorities do not keep the Klickitats away from the valley, “we will, if necessary, resort to arms and expel them by force” (Palmer 1855a). It was not until the Yakama War that Oregon was effective in expelling the Klickitat. All of the above contributed to the participation of some of the Xwalxwaipam and Taidnapam in the hostilities.

At the outbreak of the Yakama War of 1855 there was considerable consternation amongst the settler population in the Willamette Valley and southwest Washington. While there was no real armed conflict in the area, it did offer an opportunity to begin restricting the movement of Native people throughout the area. Two events of note, however, did embroil the Klickitat and Cascades. The incident at Battle Ground which resulted in the death of Umtuchs, and the Battle of the Cascades, which resulted in the execution of Tumulth and eight other Cascades Indians. These two incidences have been discussed at length and need not be repeated here, the Indian side of the stories is usually buried in the historical accounts. For the Cascades Battle, see Virginia Miller (daughter of Tumulth) in Curtis (1911a:26–28) and Chuck Williams, a descendent of Tumulth, recounting of the family oral tradition in Williams (1980). On the death of Umtuchs see Strong (1906) and McWhorter (1935).

Ultimately 199 Klickitat were restricted to the temporary Vancouver Reservation at the outset of the Yakama War, and then removed to the temporary White Salmon Reservation, where local Indian Agent Fields enumerated 60 men, 67 women, 46 children between the ages of 2 to 10 and 26 infants (Fields 1856). The White Salmon Reservation existed from 1856 to 1859 and “consisted of the Vancouver and Lewis River tribe of Klikatats and the Cascade Indians... numbering three hundred and forty persons” (ARCIA 1857:348). The White Salmon Reservation was disbanded with the ratification of the Yakama Treaty in 1859. The expectation of the Indian agents was that the Klickitat would remove to the Yakama Reservation. Apparently some did but others returned to Clark County where a number of Klickitat remained until the 1890s when they were removed to the Yakama Reservation. At least one Klickitat, Wawalux Umtuts, possibly the son of Chief Umtuch, took out a public domain allotment in north Clark County in 1870. It was sold in 1883, probably upon removal to the Yakama Reservation (General Land Office 1870). Numerous other Umtuch descendents reside on the Yakama Reservation to this day.

There has long been confusion over the tribal affiliation of the Lewis River Klickitat. Melville Jacobs gathered information on the Klickitat language in the 1920s working with Joe Hunt and Susan Hunt in Husum, Washington. J. J. Spencer, Peter McGugg and Sampson Quempts

assisted as translators. Jacobs was adamant in his insistence on the distinction between the two major Klickitat groups, the Taidnapam of the upper Cowlitz River and the Xwalxwaipam of the Lewis River, a confusion that was exacerbated during the Indian Claims Commission hearings of the 1960s and a confusion that lingers to this day (Cowlitz Indian Tribe 1997).

A recent controversy over the Cowlitz Indian Tribes' proposal to acquire trust land in Clark County and construct a casino on the site was based partially on the claim that they have traditional rights to the area through the "Lewis River Cowlitz," referring to the Taidnapam. The controversy goes back some years at least to the Cowlitz Indian Claims Commission (ICC) adjudication in 1969 (21 Ind. C. Comm. 143; CIA Pet. Ex. A-1044—A-1045). The ICC found that "Plaintiffs expert, Dr. [Verne] Ray, identifies the aborigines along Lewis River as 'Lewis River Cowlitz. However, virtually all of the contemporary as well as the historical and anthropological reports have identified the aborigines on the Lewis River as belonging to other tribal groups—specifically the Chinook and the Klickitat.'" "Klickitat" here referring to the Xwa'lxwaipam. The ICC determined that the term "Lewis River Cowlitz" was invented by Ray for the Cowlitz claim. The term "Lewis River Taidnapam," however, does have validity considering the movements discussed here.

In 1984 I argued that the movement of Sahaptin speakers west of the Cascade Mountains was facilitated by the introduction of the horse, possibly as early as the 1730s (Boxberger 1984). While this argument focused on the Taidnapam on the upper Cowlitz River, arguably the same was true of the Xwalxwaipam of the Lewis River. As early as 1839 Tolmie referred to the Klickitat at Fort Vancouver as Xwalxwaipam. As late as the 1920s Melville Jacobs, the foremost authority on the Klickitat language, noted that "Klickitat has suffered confusion in popular usage. While often used for the xwa'lxwaipam of the Lewis, White Salmon and Klickitat rivers, it has been applied frequently to the adjacent Ski'n and Yakima bands, while the upper Cowlitz Ta'iDnapam—who must not be grouped with the xwa'lxwaipam either linguistically or geographically—are very often termed Cowlitz Klickitats. Apparently Klickitat has been used by whites to apply to Sahaptins in and about the Cascades of Washington" (Jacobs 1931:96).

The confusion may be attributed to the series of movements that were taking place in the mid-1800s. First was the increase in the size of the Xwalxwaipam population in the vicinity of Fort Vancouver after 1825 and expanding into the Willamette Valley from the 1830s to 1855. Second was the subsequent movement of Taidnapam Klickitat from the area between the headwaters of the Lewis and Cowlitz rivers south into the Clark County area. The Taidnapam and Xwalxwaipam were undoubtedly intermarried, and both were also with the Chinook and Kalapuya. This interpretation could explain the "confusion" Jacobs mentions and the use of both Taidnapam and Xwalxwaipam to refer to the Klickitat in the area immediate to Fort Vancouver. The term Taidnapam was not used in the area until the mid-1850s. The earlier records of the Hudson's Bay Company are consistent in the identification of the Fort Vancouver Klickitat as Xwalxwaipam.

Tolmie reiterated this distinction in 1859. In a letter dated "Nesqually, March 14, 1859," William F. Tolmie responded to questions posed by John Keast Lord for information on the Indians around Fort Vancouver. Of the "Kliketat" Tolmie noted: "1) Whyulwhypum, wooded and prairie country between Vancouver and the Dalles, W.T. 2) Tait-inapum. Base of Mount St. Helens, and headwaters of Cowlitz and Lewis rivers. . . ." Tolmie was stationed at both Fort Vancouver and Fort Nisqually and therefore had intimate knowledge of both the Xwalxwaipam and Taidnapam. In his letter to Lord, Tolmie explained why the term Klickitat has led to much confusion:

In former times, prior to the advent of whites, the Whulwhypum used to plunder and kidnap the Chinooks of the Columbia river, whose country extended from The Dalles to the ocean; . . . By the Chinooks, the Whulwhypum were called Kliketat. And by the Puget's Sound Indians the Yakimaws are called "Stobshaddat," both words signifying robber or plunderer. . . . As the Whulwhypum dwelling on the prairies to the east and north of Vancouver became first known to the whites—the Hudson's Bay people of Vancouver—as "Kliketats," as the term was euphonized, so the name has of late been applied to the language, and to all Indians speaking it. The Kliketats—the term is used collectively—being excellent hunters, had within the last quarter of a century extended themselves through-out the Walamet valley and as far southward as the confines of California, becoming rich by supplying the American settlers in these countries with venison and horses. The Kliketats, although getting the upper hand of the aboriginal owners of these new hunting grounds, did not settle permanently therein, but in small parties were continually revisiting their native lands. In 1854, the territorial government of Oregon compelled these Indians to return to their homes, and withdraw permanently from southern Oregon, where their presence was annoying to the settlers. In 1855 they were treated with for the sale of their lands, which gave rise to the Indian war of 1855–1856, in which the Kliketats bore a principal part. (Lord 1866:244–247)

Earlier it was noted that some of the information from William F. Tolmie on place names in the vicinity of Fort Vancouver was incorporated into Gibbs's manuscript. Both Gibbs and Lord were members of the 1859 Boundary Commissions; apparently all three collaborated in gathering information on the Klickitat.

All of the above leads me to conclude that most of the 81 men listed on the 1839 Fort Vancouver census were Xwalwaipam, however it is more complicated than that. None of the names on the Klickitat census are positively identifiable. Unlike the other posts in the Columbia District, the Fort Vancouver records do not identify very many Native people by name. The practice of keeping a daily journal noting the comings and goings at the posts was not followed at Fort Vancouver, therefore few individual names exist in the historical record. Some names stand out in the census, but even these cannot be identified positively.

For example, consider number 11, Stehye. A man named "Stee-high" signed the Medicine Creek Treaty of 1854. Usually spelled "Stahi," he was a brother-in-law of the famous chief Leschi. Leschi was Sahaptin through his mother's family and sided with the Yakama during the Yakama Wars of 1855–1856, for which he was tried and sentenced to death. The Medicine Creek Treaty tribes included Sahaptin groups (e.g., Meshal) who resided in the area around Mount Rainier and had ties with the Yakama. It is not entirely implausible that this Stahi was at Fort Vancouver in 1839 but there is no corroborative evidence.

Stehye had three children recorded in the 1839 Fort Vancouver census so he would have been minimally in his mid-thirties sixteen years later in 1855. I would prefer to consider the similarity coincidence barring any corroborative evidence, especially considering that Stahi was active in the lower Puget Sound area.

Number 36, Skannewah, may be coincidence but this name is so similar to the famous trader Scanewah that there must be some connection, although it is impossible to state for certain. Scanewah first appears in the Hudson's Bay Company records in the 1820s by which time he was already an accomplished trader, bringing goods to Fort Vancouver, supplying horses over the Cowlitz Trail where he was a common presence, and acting as guide between Fort Vancouver and Fort Langley (MacLachlan 1998:24). Sir George Simpson would remark in 1825 that

“Schannaway the Cowlitch Chief,” along with Concomely and Casseno, the Chinook chiefs, controlled the trade in the lower Columbia River area. In his 1830 publication Simpson stated:

. . . nearly the whole of the Furs got now at this place pass through the hands of three Chiefs or principle Indians viz. Concomely King or Chief of the Chinooks at Point George, Casseno Chief of a Tribe or band settled nearly opposite to Belle vue Point and Schannaway the Cowlitch Chief whose track from the borders of Pugets Sound strikes on the Columbia near to Belle vue Point. . . . (Simpson 1931:86)

Scanewah accompanied the Hudson’s Bay Company expedition to Fort Langley in 1828 and was murdered by Cowichan near Point Roberts. Scanewah was undoubtedly Salish Cowlitz but could one of his offspring have intermarried with the Klickitat? Scanewah was a powerful trader from the Columbia River to Puget Sound and he intermarried with a number of tribes, which was the custom to create kin ties for economic and political alliances. One of his wives was from as far as the Klallam. At least three of his daughters married Hudson’s Bay Company personnel: Victoria to Simon Plamondon at Cowlitz Station, Harriet to Jean Baptiste Chalifoux at Fort Nisqually, and Mary to John McLeod at Puget Sound Agricultural Farm near Fort Nisqually. He had at least one son, Stockum, identified as Scanewah’s son and recognized as Cowlitz “chief” by Indian Agent Milroy in 1878 (Cowlitz Indian Tribe 1997:33). Whether or not the Skanewah of the 1839 census is related to the Scanewah who died in 1828 cannot be determined.

The two Klickitat that figured most prominently in the history of the area around Fort Vancouver in the 1850s were Umtuch and Yocatowit; neither name appears on the 1839 census. Umtuch was killed at Battle Ground shortly after securing a peace with Captain William Strong and agreeing to go to the temporary reserve at Vancouver. Umtuch was generally considered the “chief” of Cathlapootle and has been identified with various tribal affiliations. He was likely Taidnapam and he may have been married to a Cathlapootle Chinook woman, but neither is certain. Umtuch’s niece, Catherine Cosike, was referred to as belonging to the “Cathlapoodle Tribe, a branch of the Klickitat” in 1915. Less than a dozen “Cathlapoodle” were residing in the area at that time (Sunday Oregonian, August 8, 1915). Umtuch’s seven-year-old daughter Mary was identified in 1854 baptismal records as “daughter of Humptux an Indian who lives at the mouth of the Lewis River” (Munnick 1972:148). Gibbs was told by Yocatowit that Umtuchs was a Taidnapam “his proper country was not Wiltqa, but in the mountains at the foot of St. Helens, on the head of the Cowlitz. His people were always quarreling and he left them” (Gibbs 1855-1856 cited in Minor and Toepel 2008:4-73). The ethnonym Taidnapam is not referenced in the Lewis River area until 1854 when Indian Sub-Agent for the Southern District of Washington Territory William Tappan outlined the tribes in his jurisdiction. In discussing a band of Klickitat at the mouth of the Cowlitz River, Tappan remarked “they were originally from the interior and approached the Columbia as the lands became vacated by the Chinooks.” He distinguished the Taidnapam from the Klickitat but pointed out that they intermarried and were in the process of becoming “one and the same people.” Later that same year Tappan would propose a reservation to be set aside at Chelatchie Prairie, a place frequented by all of the tribes in the area.

The largest band of Tai tina pans are living in the valley of the Cathlapootle river and are the most interesting Indians in the Southern District. They are not all Tai tin a pam proper, for there are some Click a tats among them but they are so intermarried that they consider themselves one and the same people. In fact the Tai tin a pans are but a band of the Click atats which is a large tribe occupying an immense region of Country. (Tappan 1854a)

Those upon the Cathlapoodle (Tie tin a pams) will I think be willing to go to a reserve in the Cha latchee prairie, retaining however a right to their fisheries, and to winter their horses in the valley they now occupy. Here I think those of the Cowlitz and about Van Couver could be gathered the land is unsurpassed by any in the Territory and in the heart of the best berry district frequented by all of their tribes. (Tappan 1854b)

Tappan was urging Governor Stevens to stake out the land for the proposed reserve at Chelatchie Prairie as early as February, even if a treaty should not be made for some time. Coincidentally Tappan had a land claim on the north shore of the mouth of the Lewis River directly across from the Cathlapootle village (General Land Office 1854).

Upon Umtuch's death, Yocatowit became the primary leader of the Klickitat. He was sketched by Gustav Sohon at Fort Vancouver in 1856, along with a number of other tribal leaders (Sohon 1856). At a council with Washington Territorial Governor Isaac I. Stevens at Fort Vancouver in August 1856, Yocatowit was asked by Governor Stevens where he was from. "Here the Governor put this question to Yocatowit. 'To what portion of this country did you originally belong? To which he answered that he originally belonged to, and came from the country at the head of Puget Sound and that he would like to live there' (Stevens 1856). He acknowledged that his tribe did not originally own this country but conquered and won it. This further confirms my interpretation that the Taidnapam were recent movement (ca. 1850s) into the area adjacent to Fort Vancouver.

Instead of encouraging Yocatowit to return north, Stevens told those present that "You have conquered this land and it is your own. We treat with you as its conquerors. You have the possession, and the possessors are the ones with whom we treat." Stevens encouraged them to go to the temporary White Salmon reservation for one year and then remove to the Yakama Reservation acknowledging that they were not party to the Yakama Treaty. To which Yocatowit agreed. "I want to go into the country between the White Salmon, Klickitat and Yakama rivers. There is plenty of fish, roots, berries, game and everything we want. It is also our own country." Yocatowit also agreed to gather all the Klickitats from "[Governor Joel] Palmer's Reservation in Oregon" and take them with him.

Stevens approved stating that it was to be a temporary arrangement to try for one year. "I have as yet made no treaty with you – I have not bought your lands. You still own them: but I will advise you to go to the Yakama country... I make no treaty with you but I wish you to go there and try the place." He further promised that he would hold their interest in lands at Vancouver, but not make a treaty with them at the present, leaving open the possibility that a treaty was to be concluded with them in the future, which, of course, never happened. The area of southwest Washington Territory was to remain non-treaty.

### *The Cath La-Cana-Sese Census*

The name Cath la-cana-sese is derived from the self-designation of the Chinook people in the area of Vancouver Lake. The prefix *galá-* (usually Anglicized as Cathla-) refers to "those of." *Galák'anasisi* "those of the butterball duck" is often rendered "Wakansisi" (Silverstein 1990:545). The Cath la-cana-sese census lists just nine adult males (Fig. 6; Table 6). The name that stands out is Kiesno "the Chief," an individual who figured prominently in the area in the first half of the nineteenth century. The historical references to Kiesno, mostly from the Hudson's Bay Company records, have been discussed in Spencer (1933). Kiesno, or Casino, first appears in written history

in May 1811. Gabriel Franchere refers to "Keasseno" as the Chief of "Thlakalama" (Kalama) (Franchere 1904:246). Just two months later Alexander Ross noted that "Kiasno" was Chief of the village at the mouth of the Willamette River, which would be just across from the later location of Cath la-cana-sese (Ross 1849a:106). Obviously, Kiesno was already leader of the Chinook communities along the Columbia River by 1811.

Kiesno would eventually become a powerful leader of the Chinook from the Cascades to the Cowlitz River and up the Willamette River to the Falls, his influence was also felt as far as the Cascades. Kiesno was married to Ilchee, daughter of Chief Concomly, with whom he shared the control of trade on the lower Columbia River between Fort George and Fort Vancouver. After Concomly died in 1830 Kiesno became the undisputed leader of the Chinook.

28

*Cath la-cana-sese Tribe - Village situated on the Columbia River about 10 miles below Vancouver  
Language a dialect of the Chinook*

No.	Indians Name	Wives	Boys	Girls	Adults	Total	Population	Notes
1	Kiesno (the Chief)	3		1	8			Beaver trader
2	Chena Chonah	1			2	1	1	Fur Seal Hunter
3	Caps tak	1			1	1	1	
4	Sho guach	1			2	1	1	
5	Ketaguash	1		2	6	10	1	
6	Te-as-na-ans	1			2	1		
7	Francois	2	1	1	5			
8	Matlimatthleh	1			2		2	
9	Takotle each	1			2		1	
		12	1	3	12	37	5	6

Fig. 6. Cath la-cana-sese Tribe of the Fort Vancouver Section of the Hudson's Bay Company Census of Indian Population, 1839.

TABLE 6. CATH LA-CANA-SESE TRIBE OF THE FORT VANCOUVER SECTION OF THE HUDSON'S BAY COMPANY CENSUS OF INDIAN POPULATION, 1839.

Cath la-cana-sese Tribe\_ Village situated on the Columbia River about 10 miles below Vancouver - language a dialect of the Chenook

No.	Indians Name	Wives	Sons	Daughters	Followers	Total Population	Canoes	Guns	Horses
1	Kiesno (the Chief)	3			4 <sup>s</sup>	8			Beaver trader
2	Chona Chonah	1				2	1	1	Deer + Seal Hunter
3	Capstak	1			2	4	1	1	
4	Sho quach	1				2	1	1	
5	Ketaquash	1		2	6 <sup>s</sup>	10	1		
6	Te-as-na-was	1				2	1		
7	François	2	1	1		5			
8	Watimalthleh	1				2		2	
9	Yakettle Cook	1				2		1	
		12	1	3	12	37	5	6	

Paul Kane did a portrait of Kiesno in 1847, whom he referred to as "Casenov." Kane described Kiesno's sufferings from the epidemics of the early 1830s: "His own immediate family consisting of 10 wives, four children and 18 slaves, were reduced in one year to one wife, one child and two slaves" (Kane 1859:175).

By 1839 he had three wives, no children and 4 slaves. With the establishment of Fort Vancouver in 1825 Kiesno established his village at Cath la-cana-se, or "The Fishery." This village was located at Hewlett Point, on the Columbia River just upstream from present-day Frenchman's Bar Park in Clark County. By 1852 William Dillon had taken a Donation Land Claim at the site (General Land Office 1854).

Kiesno died in 1849. George Gibbs related information he gathered on Kiesno in 1854:

Ca-se-no the great chief of the Upper Chinooks died in the fall of 1849 at a very advanced age, & having survived nearly all his people. His proper Tribe at Souvie's Island and Scappoose once numbered 4 or 5000. He was Klikatat on the mothers side. (Gibbs 1853 cited in Minor and Toepel 2008:4-74)

Gibbs would later correct his assertion that Kiesno was Klikatat:

Kéh-as-no's house was always at Scappoose, not at Wiltqua [mouth of Lewis River]. It appears that he was not of Klikatat blood, but became chief over the Klikatats and all the adjacent people. In former times he was always making war. He took the children & made slaves of them. The men he put in his house, *Kahqua guard house*. All his people died with the cold sick. None of his sons are living. (Gibbs 1855-1856 cited in Minor and Toepel 2008:4-74 through 4-75)

Kiesno's people at Wakanasisi were removed to the Grand Ronde Reservation in 1856. John Wacheno testified in 1905 that "Old Chief Keosnose who lived on the Columbia River owned a good many slaves. He died before the Indians moved in here but his wife Mary Ann came here" (Grand Ronde Tribal Archives 1905:36).

Number 2, Chona Chonah was probably a young man in 1839. He was married but had no children. Chona Chonah appears again in the historical record in 1856. In preparation for removal to the Grand Ronde Reservation the Wakanasisi were enumerated by Thomas Smith along with the "Klatskania" (Clatskanie) (Table 7). In this census Chona-Chona was identified as 1st Chief and as having two children. In a letter to Joel Palmer dated 8 January 1856, Thomas Smith, "local agent for the Indians in the vicinity of St Helens," placed the "Nepechuck" on a temporary reserve at Milton, Oregon. The name Nipitchak was the place name for Milton, Oregon, not an ethnonym (Grand Ronde Tribal Archives 2009). Smith described the territory of the Nepechuck and Klatskania as

The section of country claimed by these two bands extends from Cathlamett on the Columbia River to the head of Sauvie Island and back as far as the summit of the mountains dividing the river bottom from the Falatine plains. In addition to the above the Ne-pe-chuck Indians claim a strip of country on the north side of the Columbia river. They live principally by hunting and fishing and some few of their number cultivate small patches of vegetables. They have quite a number of large Chinook Canoes, and are very expert in navigating them. (Smith 1856)

While Kiesno and Chona Chona are listed on the 1839 Hudson's Bay Company census for the Cath la-cana-sese Village, other connections could not be made between the 1839 and 1856 censuses suggesting that neither were complete. Since we only know the English name for Mary Ann Keosnose we can only speculate that she may have been one of the two women identified as heads of family in Smith's 1856 census. The 1856 census is rather odd considering the distribution of men, women, boys and girls. Perhaps because of the warlike atmosphere at the time the young males were absent.

In 1839 Wakanasisi, "The Fishery," was an important part of the Fort Vancouver operations. As its name suggests, the village supplied fish to the post and the descriptions of Kiesno indicate that his village was responsible for mediating much of the trade coming into the Hudson's Bay Company operations on the lower Columbia River. The Fishery had been a much more important part of Hudson's Bay Company operations prior to the 1830–1833 epidemics.

The census ratio of 5.25 adults per child (Table 8) is certainly indicative of a population in severe decline. Although with a total population of only 37, of whom one-third are identified as followers, it is difficult to draw conclusions, especially considering that the followers are not identified by sex or age. By 1856 the population was still small (20) and still composed of a high adult to child ratio (3.0). Followers were not identified in the 1856 enumeration. William Tappan described the "Fishery Indians" in his 1854 report to Isaac Stevens as having once been a "great tribe" but now were greatly diminished (Tappan 1854a). During the removals of 1856 the residents of both Cath la-cana-sese and Cath-lal-shlalah were removed to the Grand Ronde Reservation as opposed to the White Salmon Reservation. Testimony given in 1905 at Grand Ronde, identified the Clackamas, Oregon City (Willamette Falls) Tumwater, Wałatla Tumwater and Wakanasisi as having been removed to the Grand Ronde Reservation. There was obviously a great deal of confusion on the part of the US officials in trying to sort out the various groups in the vicinity of Fort Vancouver and a great deal of rumor as to what would become of them. Evidence of this confusion comes from a letter from William Dillon to Isaac Stevens dated 8 June 1856.

Dillon took out a Donation Land Claim at the site of Wakanasisi and was apparently concerned that the Klickitat would be settled there. It appears that the rumor amongst the local settlers was that the Klickitat were going to get a reservation in the area. This was about the same time that Tappan was recommending a reservation at Chelatchie for the Taidnapam. Dillon was concerned that the Klickitat were going to occupy the fishery, which had been recently vacated by the Wakanasisi.

I am informed by Mr. Fields who has charge of the Indians at Vancouver that the authorities at that place intends to send those indians which they have in charge down her to occupy the old fishery 7 miles below Vancouver and Cituate on my land claim . . . it has been the general understanding of the American Citizens that this band of clickitat Indians did not own the land there. It is known that they have never pretended to own or occupy the fishery aforesaid but it has bin occupied every year since the year 1848 by a small band of indians who deny any one relation or joint occupancy with the Clickitats and the said small band is now on the grand rond reserve in Oregon Territory, or so it is stated. (Dillon 1856)

In February 1856 Joel Palmer distributed treaty goods to the Nepechuck (Table 7) but apparently never secured their signature on the Willamette Valley Treaty. Nevertheless the ceded lands of the "Clow-we-wallah's of the Tumwater tribe" in the Willamette Valley Treaty extend along the lower Willamette River from Willamette Falls to the Columbia River and then along the Columbia River to Oak Point taking in the territory of the Cath la-cana-sese (Belden 1855).

### *The Cath-Lal-Shlalah Census*

The Chinook-speaking Cath-lal-shlalah Tribe is the "Shahala" of Lewis and Clark, who first described the Shahalas as residing from the Cascades to "Wappeto Island" (Sauvies Island). Lewis and Clark noted the "Wah-clallah Tribe of Shahala Nation," on their map of the area below the Cascades. Lewis and Clark recorded that the Shahala had ties between the Cascades and the Willamette Falls and consisted of several tribes. Lewis and Clark's Wah-clallah (also spelled Wah-clel-lah) would be the Wah-lal-la (Walatla) of the Willamette Valley Treaty. In Clark's 1806 Estimate of Western Indians, he describes the Shahala Nation along the Columbia River from the Cascades to the mouth of the Lewis River and along the lower Multnomah River distinguishing the Shahala from the Multnomah.

*Sha-ha-la* Nation reside at the Grand rapids of the Columbia and extend down in different Villages as low as the Multnomah river Consisting of the following tribes viz: *y-e-huh* above the rapids, *Clah-clel-lah* below the rapid, the *Wah-clel-lah* below all the rapids and the *Ne-er-cho-ki-oo* 1 house 100 sole on the S. side a few miles above the Multnomah R.

*Mult-no-mah* Tribe reside on Wap-pa-tow Island in the mouth of the Multnomah, the remains of a large nation; *Clan-nah-quehs* Tribe of Multnomah's on Wappato Island below the Multnomahs; *Ne-mal-quin-ner's* a Tribe of Multnom's South Side of the Multnomah River 2 mis. above its mouth; *Cath-la-com-mah-tup's* a Tribe of Multnom's South Side of the Wappato Island on a slew of the Miltnr; *Cath-lah-nah-qui-ah's* Tribe of Multnomies reside on the S W. side of Wappato Island; *Clark Star* N. resides on a Small River which discharges itself on the S W. Side of

Wappato Island; *Cla-in-na-ta*'s resides on the S W. Side of Wappato Island; *Cath-lah-cum-ups* on the main Shore South West of Wappato Island; *Clan-nar-min-na-mun*'s on the S. W. side of the Wappato Island; *Quath-lah-poh-tle*'s N. reside on the S W. of the Columbia above the Enterance of *Cha-wah-na-hi-ooks* river opposite the Low pt. of Wappato Isd (Lewis and Clark 2005a).

Often referred to as the "Cascades," or the Walatla, this tribe was prominent in the trade and fishing activities at both the Cascades and Willamette Falls. Two "Wah-lal-la" leaders signed the Willamette Valley Treaty, Tum-walth and O-ban-a-hah; and two leaders signed on behalf of the Clow-we-wal-la, or Willamette Tum-water band, Lal-bick, or John and Cuck-a-man-na, or David (Treaty With the Kalapuya, Etc, 22 January 1855, 10 Stats., 1143). These ties with the Willamette Valley became evident to Joel Palmer during the Middle Oregon and Willamette Valley Treaty negotiations in 1855. Palmer explained that the Walatla had closer ties to the Columbia River

TABLE 7. SMITH'S ENUMERATION OF THE NEPECHUCK BAND, 1856.

Heads of Families	Men	Women	Boys	Girls	Total
<b>Ne-pe-chuck band</b>					
Chonâ-Chonâ 1st Ch	1	1	1	1	4
Quâl-lâ-chin 2nd do	1	1		1	3
Ye-al lâh	1	1		1	3
Wie-yam	1				1
Sam-i-yâh	1	1			2
Quâ-mâh	1				1
Hâ-to-on		1		1	2
Yak-shan oit	1				1
Sty-yâ was	1	1			2
Wâ-câ-cow-an		1			1
<hr/>					
Total	8	7	1	4	20

TABLE 8. THE 1839 HUDSON'S BAY COMPANY CENSUS DATA RATIOS.

**Kliketat**

Ratio of Adult Free Women to Adult Free Men <sup>1</sup>	Ratio of Adults to Youth	Ratio of Sons to Daughters	Ratio of Total Free Population to Followers <sup>2</sup>	Ratio of Men to Canoes	Ratio of Men to Guns	Ratio of Men to Horses
1.12	0.82	1.22	0.10	0.31	0.72	0.83

**Cath la-cana-sese**

Ratio of Adult Free Women to Adult Free Men	Ratio of Adults to Youth	Ratio of Sons to Daughters	Ratio of Total Free Population to Followers	Ratio of Men to Canoes	Ratio of Men to Guns	Ratio of Men to Horses
1.34	5.25	0.33	1.75	0.56	0.67	0

**Cath-lal-shlalah**

Ratio of Adult Free Women to Adult Free Men	Ratio of Adults to Youth	Ratio of Sons to Daughters	Ratio of Total Free Population to Followers	Ratio of Men to Canoes	Ratio of Men to Guns	Ratio of Men to Horses
1.07	0.52	0.55	0.65	1.10	0.94	0.07

<sup>1</sup> Three of the men enumerated were dead but since they were included in the census total I have included them here.

<sup>2</sup> About 10 percent of the population of Followers are designated "S" which denotes slave.

below the Cascades and would only consent to leaving their homelands if they were assured they would not be removed east of the Cascade Mountains. Oregon Territorial Governor Joel Palmer did not have jurisdiction in Washington Territory and could only negotiate lands in Oregon Territory so he added a proviso in Article 2 of the Willamette Valley Treaty that lands on the north side of the Columbia River in Washington Territory may be dealt with at a later date.

None of the names on the Cath-lal-shlalah census are positively identifiable (Fig. 7; Table 9). Many of the Cascades were being referred to by English or French names in the historical record and so often their traditional name is lost. Three names stand out but any connection to individuals is tenuous. Number 1, Sy la mish is remotely similar to Schluyhus, leader of the village at Washougal, across the Columbia River from the location of Cath-lal-shlalah. Schluyhus's daughter Betsey married Richard Ough, a Hudson's Bay Company employee, about 1838. They later took a land claim at the site of Betsey's village and the town of Washougal was platted on their homestead in 1880 (Fairhurst 2006:18–20). Number 14, "Ta walth" is similar to Tum-walth, the Walatla treaty signatory. In a 2007 interview with Ida Altringer and Josephine Towers, the elders of the descendants of Tumulth, they requested that his name be spelled consistently "Tumulth" (Altringer and Towers 2007). They also shared the family genealogy and the family's oral tradition of Tumulth's execution. At the time of his execution in 1856 Tumulth

had 4 daughters, the oldest, Virginia Miller was a young girl at the time but old enough to have a vivid recollection of the circumstances surrounding the incident, which she related to Edward Curtis in the early 1900s (Curtis 1911a:26–28). This is a family tradition that was also recorded by another Tumulth descendent in 1980 (Williams 1980). Tumulth was probably not older than 40 at the time of his death and likely much younger. If he were in his mid-30s to 40 in 1856 that would make him around 20 in 1839; the Ta walh on the 1839 Hudson's Bay Company census was married in 1839 but had no children, so that would be consistent. The other Walatla treaty signatory, O-ban-a-hah, was also involved in the Cascades incident. Both Virginia Miller and Chuck Williams relate that Obanahah was spared execution. A "Wap-on-a-ha" is listed as resident of the Guard House at the Vancouver Reserve after the Cascades incident (Fields 1856).

It is not inconceivable that some of the individuals enumerated in the Cath-lal-shlalah census were Klickitat; intermarriage was common between the Chinook and Klickitat by the 1850s (Gibbs 1877:170–171). Horses, indicative of the Klickitat, are noticeably lacking. This would suggest Chinook dominance, especially when we compare the ratio of horses with the ratio of canoes. Only two horses were enumerated and both were owned by one individual. Thirty-two canoes are listed with seven individuals owning more than one (overall ratio of 1.10).

It is also likely that there may have been individuals from above the Cascades or from lower Chinook present at the time the census was taken. One name in particular is intriguing. Number 25, "Quallaskin," is similar to "Qua losh kin" a Dog (Hood) River Wasco signatory of the Middle Oregon Treaty (Treaty with the Tribes of Middle Oregon, 22 June 1855, 12 Stats., 963), and also to Skolaskin, the Sanpoil prophet. I would rule out Skolaskin but Qua losh kin could possibly be the 1839 Quallaskin. In the 1839 census Quallaskin had two wives, three children and seven followers. He was probably not a young man in 1839 but then the leaders who signed the treaties tended to be older individuals, so it certainly is within the realm of possibility.

The Cath-lal-shlalah village is identified in the census as being located "on the banks of the Columbia opposite Fort Vancouver." Gibbs gives a near-by place name "Is-a'h-lich" as the "prairie a little above Switzlers' opposite Ft Vancouver" (see Table 5). His notation suggests that Tolmie identified this as a Klickitat name. Gibbs gives Is-a'h-lich" as the name of a prairie, not as a village name, therefore suggesting that it is a Klickitat place name not the Cath-lal-shlalah village name. The village was located near Switzler's Ferry, on the mainland just upstream (southeast) from Hayden Island, (called Vancouver Island in the 1850s). John Switzler established a land claim there and started ferry service across the Columbia River in 1846. By the Willamette Valley Treaty the Walatla ceded this area and were to remove to a reservation when "a suitable district of country shall be designated for their permanent home." Joel Palmer identified the ceded lands of the Walatla in a report on the Willamette Valley Treaty (1855b) and with the establishment of the Grand Ronde Reservation in 1856 they were removed there. Palmer's diary notes that the Clackamas, Wallalla and Cloewalla, numbering some 160 people, were removed to Grand Ronde on 3 April 1856 (Palmer 1856).

The Cath-lal-shlalah village was utilized as a temporary reserve at the beginnings of the Yakama War. In November 1855 Lot Whitcomb would report to Joel Palmer that "I have collected all the Indians on the south side of Columbia River between the mouth of Sandee and the Willimette River together encampment three miles above Mr Switzlers. No nearly 100—all quiet and friendly no fears of outbreaks" (Whitcomb 1855).

*Cath-lal-shlalah Tribe Summer village  
Columbia Cascades winter Village Banks of the Columbia  
opposite Fort Vancouver - Lingard's report of 1839*

No.	Indian's Name	Age	Sex	Height	Weight	Complexion	Build	Stature	Remarks
1	Sy-la-mesh	3	2	2	2	11	2	1	
2	Sak-wah	2	1	1	1	1	1	1	
3	Saka-ne-by-ah	1	1	1	1	3	2	2	
4	Tech-peth	1	1	1	1	3	1	1	
5	Tamoyan	1	1	1	1	3	1	1	
6	Sak-wah	1	1	1	1	2	1	1	
7	Hin-ah-wah	1	1	1	1	2	1	1	
8	Cho-cham-wah	1	1	1	1	4	1	1	
9	Sar-hacks	2	1	1	1	11	3	1	
10	Tzel-y-cham	1	1	1	1	3	1	1	
11	Cho-cham-wah	1	1	1	1	3	2	2	canoe trapped
12	Cho-wa-pan	1	1	1	1	2	1	1	
13	Tark-sick	1	1	1	1	2	1	1	
14	Ta-wah	1	1	1	1	2	1	1	
15	Lam-wah	1	1	1	1	3	2	2	
16	Tama-wah	1	1	1	1	2	1	1	
17	Ki-sie	1	1	1	1	1	1	1	
18	Shanth	1	1	1	1	3	1	1	
19	Tom-wah	1	1	1	1	2	2	1	
20	Wak-ah	1	1	1	1	2	1	1	
21	Tuath-wah	1	1	1	1	2	1	2	trapped canoe
22	Tuaya	1	1	1	1	1	1	2	
23	Tu-yah	1	1	1	1	2	1	1	
24	Say-see-wah	1	1	1	1	2	1	1	
25	Tuath-wah	2	1	2	7	13	2	1	
26	Karack-wah	1	1	1	1	4	1	1	
27	Mah-wah	1	1	1	4	4	1	1	
28	Patni-palai	1	1	1	1	1	1	1	
29	See-wah	2	1	1	1	1	1	1	
		31	11	31	39	142	32	28	2

Fig. 7. Cath-lal-shlalah Tribe Of The Fort Vancouver Section Of The Hudson's Bay Company Census Of Indian Population, 1839.

TABLE 9. CATH-LAL-SHLALAH TRIBE OF THE FORT VANCOUVER SECTION OF THE HUDSON'S BAY COMPANY CENSUS OF INDIAN POPULATION, 1839.

Cath-lal-shlah Tribe summer village  
Columbia Cascades—winter village Banks of the Columbia  
opposite Ft Vancouver Language a dialect of the Chinook

No.	Indians Name	Wives	Sons	Daughters	Followers	Total Population	Canoes	Guns	Horses
1.	Sy la mish	3	3	2	2 <sup>s</sup>	11	2	1	
2	Sak wak	2	1	1		5	1		
3	Saka mowhynak				2 <sup>s</sup>	3	5	2	
4	Poch pich	1		1		3	1	3	
5	Tamaqum	1			3 <sup>s</sup>	5	1	1	
6	Yakit alss	1				2	1		
7	Uchatie was		1			2	1	1	
8	Che chum nak <sup>A</sup>	1	1	3	3 <sup>s</sup>	9			
9	Swa Kooks	2		2	5 <sup>s</sup>	10	3	1	
10	Tzil y choose	1	1	3	3 <sup>s</sup>	9	1		
11	Chechumnak <sup>B</sup>	1	1		5 <sup>s</sup>	8	3	2	Beaver trapper
12	Chow a pan	1				2	1		
13	Tash wick	1				2	1	1	
14	Ta walh	1				2		1	
15	Lamacoti	1	1			3	2	2	
16	Tama wash	1				2		1	
17	Kikefie					1		1	
18	Skauth	1		1	3 <sup>s</sup>	8	1	2	
19	Towallak	1				2	2	1	
20	Wakalli	1				2	1	1	
21	Qualthanash	1				2 <sup>s</sup>	1	2	Liberated Slave
22	Quaya					1			2
23	Slyach	1				2		1	
24	Kay coo eech	1				2		1	
25	Quallaskin	2	1	2	7 <sup>s</sup>	13	2	1	
26	Kaiach um	1	1	1		4	1	1	
27	Mah wainah	1		3	4 <sup>s</sup>	9	1	1	
28	Palaipalai				1 <sup>s</sup>	2			
29	Soo eiluch	2	1	1	1	6			
		31	11	20	39	142 <sup>1</sup>	32	28	2

<sup>1</sup> My total is 132, I am not sure of the nature of the error.

In 1906 Peter Checkee explained which Columbia River groups were included in the Willamette Valley treaty. Peter Checkee was a respected elder of the Grand Ronde Reservation and while he identified as Tualatin Kalapuya, he was knowledgeable on the history of the tribes that were removed to Grand Ronde, as his answers to questions about the tribes adjacent to the Kalapuya indicate:

Ques: What Indians were east of the Willamette River?"

Ans: Why the Clackamas and the Tum Water Indians and some other Indians along the Columbia river, between the mouth of the Willamette and the Cascade Falls, the Wakanisise and some other Columbia Indians that were connected with the Clackamas. All these Indians were included in the treaty as Clackamas and Tum Water Indians. None of these were Calapooias.

Ques: Who were the Tum Waters?

Ans: Tum Water was the common name for the Falls at Oregon City and many people called the Willamette river the Tum Water River clear down to the Columbia. The Indians we speak of as the Oregon City Indians were called Tum Waters in the treaty and the Clackamas people were north of them and the Calapooia south. They were mixed with both the Clackamas people and the Calapooias, but they were not Calapooias.

Ques: Do you understand that the treaty included all these mixed bands of Indians, not Calapooias who lived along the Willamette River from the falls at Oregon City to the Columbia and up the Columbia on the south side as far as the Cascade Falls? All Indians that were related to and classified with the Clackamas?

Ans: Yes, this is the way I understand it. I understand that by the treaty we gave up to the government the land we claimed and that went up the Columbia as far up as the Cascade Falls. (Checkee 1906:2)

Henry Wallace, who identified himself as Wakanasisi and Clackamas, would testify that four Columbia River tribes came to Grand Ronde under the treaty, "the Wakansisse and Cascade bands of Columbia Indians, the Clackamas and Oregon City band" (Wallace 1906:56). "I am a Columbia River Indian and came in under the treaty with the Clackamas and several other tribes. The people on the Columbia that I speak of lived on the peninsula between the Willamette and Columbia rivers. My father was a Clackamas and my mother was a Columbia (or Wakonisisse woman)" (Wallace 1906:56).

## Conclusions

At the beginning of written history the territory near Fort Vancouver was occupied by Chinook. The earliest written records noted strong ties among the villages between the Cascades and Willamette Falls and from the Multnomah River to the mouth of the Columbia. The people who lived inland north of the Columbia River in present-day Clark County, Washington, remain a mystery. When Lewis and Clark inquired of the Chinook into the identity of the inland residents at both the Lewis and Cowlitz rivers they were told, in both instances, it was the "Hul-loo-et-tell" (Lewis and Clark 2005b). Moulton suggests the Hul-loo-et-tell were Cowlitz (Lewis and Clark 2005b fnnt 6). That assertion, while certainly the case on the Cowlitz River, is not supportable for the Lewis River. Silverstein (Lewis and Clark 2005b) glosses Hul-loo-et-tell as *xluit il* meaning "strange country," suggesting it is not an ethnonym, as Moulton contends, but a general description of the territory (also see Silverstein 1990:545). It is conceivable that a Salish-speaking

group resided in interior Clark County prior to 1839 but we may never know. The only source that identifies tribal territories in the area after Lewis and Clark and before 1839 is a map made by Alexander Ross in 1849 from a map he made in 1821 and from his recollections of the time he was in the Northwest from 1811 to 1825 with the various fur companies (Ross 1849b). Ross places the "Cowlitz Nation" along the lower Cowlitz River and the "Cattla puttla tribe" along the Lewis River further identifying villages at the mouth of the Lewis River (the Chinook village of Cathlapotle), at the confluence of the East and North Fork of the Lewis River, and at the mouth of Swift Creek. Most likely the Swift Creek village was Xwalxwaipam in the early 1800s.

Horses may be used as an indicator of Klickitat presence. In 1806 Lewis and Clark noted that they did not encounter horses below the Cascades:

these are the first horses we have met with since we left this neighborhood last fall, in short the country below this place will not permit the use of this valuable animal except in the Columbian valley and there the present inhabitants have no use for them as they reside immediately on the river and the country is too thickly timbered to admit them to run the game with horses if they had them. (Lewis and Clark 2005c)

If the Klickitat were a dominant presence in the area it is likely that horses would be present as well. Lewis and Clark did not venture far inland from the Columbia River. Later the Hudson's Bay Company employee George Roberts noted that the Klickitat were kept away from the Columbia River until the Chinook's numbers were diminished, then the Klickitat were encouraged to settle near Fort Vancouver (Roberts 1962:183). The first recorded mention of horses in the vicinity of Fort Vancouver was by members of Fort Astoria, 1813 in the Willamette Valley (Seton 1993:112) and on the Columbia River near the mouth of the Lewis River headed for the Willamette Valley (Henry 1992:715). In both instances these were likely associated with Sahaptin speakers, the Xwalwaipam on the Columbia River and the Molala in the Willamette Valley.

My interpretation is that the inland area of what is now Clark County was part of the yearly round of Xwalxwaipam at time of first contact. We may never know who the "original" inhabitants were, and I am not sure that matters. For purposes of indigenous land claims the rightful heirs are usually determined by use and occupancy at the time of first outside contact. For this area the Lewis and Clark Journals are typically given the voice of authority but in the absence of evidence we must rely on extrapolation from the oral histories recorded in the historical record.

With the establishment of Fort Vancouver in 1825 and the rapid depopulation of the "River Indians" (Cath la-cana-sese, Cath-lal-shlah, Tumwater, Clackamas) in the early 1830s, the Xwalxwaipam Klickitat became established nearer to the Columbia River. They had been utilizing the area seasonally for hunting and trade at least since the early 1800s and likely well before that time. The 1839 census notes that the Xwalxwaipam were expanding into Kalapuya territory in the Willamette Valley. Shortly after they were expanding as far south as the Umpqua and Coquille Valleys. By the 1850s the Taidnapam followed, expanding into the lower Lewis River area from their territory between the headwaters of the Cowlitz and Lewis Rivers.

With the increase of American settlement and the expulsion of the Hudson's Bay Company in the 1850s the neglect of the Washington Territorial treaty negotiators to conclude treaties in southwest Washington enabled competing claims to prevail. The American settlers in Washington Territory could argue the original inhabitants perished and the Klickitat were recent intruders with no valid claim to the area. The Oregon settlers could argue that the Klickitat belonged in Washington Territory not in Oregon. The Hudson's Bay Company could argue for compensation

for improvements to the land completed by Native Americans under their direction (Hudson's Bay Company 1860). The different tribal groups have long had competing interests as the rightful heirs of succession to the territory on the north side of the Columbia River.

These notions concerning aboriginal claims, both historical and contemporary, are the consequence of an underlying assumption that Native groups were static prior to contact. The reality is that this was a dynamic, constantly changing human landscape with many movements and counter-movements that reach back through the protohistoric period. The Chinook were able to maintain control of the Columbia River from the Cascades to its mouth until their numbers declined so precipitously that their power was compromised. Nevertheless, a dynamic leader like Kiesno was still able to maintain control until his death at which time the American settlers, by sheer numbers, controlled the course of history, pushing out the Native inhabitants and the non-American settlers.

From looking at the 1839 census we can piece together a great deal about native/newcomer relations during this critical period in history. But what is lacking is the story of most of the individuals involved. My hope, in putting this information in a more accessible place is that others may recognize names and/or make connections I have not noticed and further expand on our understanding of this important part of our history.

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# UMPQUA/EDEN REVISITED: NOTES ON THE ARCHAEOLOGY AND ETHNOHISTORY OF A LOWER UMPQUA INDIAN VILLAGE ON THE CENTRAL OREGON COAST

**Rick Minor, Don Whereat, and Ruth L. Greenspan**

## ABSTRACT

The Umpqua/Eden site is the primary source of archaeological information about the Lower Umpqua, one of the less well documented native peoples of the southern Northwest Coast. The scene of extensive excavations between 1974 and 1980, Umpqua/Eden was revisited in 1994 when additional small-scale archaeological investigations were carried out in preparation for nominating the site to the National Register of Historic Places and its acquisition by the Archaeological Conservancy. New information is presented about the horizontal and vertical extent of the cultural deposits, the nature of the faunal assemblage, and the site's stratigraphy and chronology. A review of the limited, mostly unpublished, ethnographic record indicates that Umpqua/Eden corresponds to the village of *Tki'-mi-ye'*, one of only seven Lower Umpqua settlements whose locations are known today.

## Introduction

The Lower Umpqua, who referred to themselves as *Ku-īlc'* (Dorsey 1890:230) and who are often referred to in early historical accounts as the *Kalawatset* (spelled in various ways), are among the more poorly documented native peoples of the southern Northwest Coast. Lower Umpqua territory extended along a 30-km-long section of the central Oregon coast centered on the Umpqua River estuary in western Douglas County, Oregon. As with many Northwest Coast peoples, their territory continued upstream in the principal river valley they inhabited from the Pacific Ocean to the head of tidewater approximately 50 river km upstream near present-day Scottsburg, Oregon (Fig. 1).

The introduction of infectious diseases in the eighteenth century led to an early and rapid decline in the Lower Umpqua population. The Umpqua River estuary was an early focus of settlement by Euroamericans, displacing the Lower Umpqua from their traditional villages along the river. The Lower Umpqua were among the native peoples of southwest Oregon forcibly removed to reservations in 1856. As a result, few individuals knowledgeable about traditional lifeways were still living when anthropologists began conducting fieldwork in western Oregon, and a formal ethnographic study of the Lower Umpqua was never conducted. The most thorough descriptions of Lower Umpqua culture and lifeways have been prepared by Stephen Dow Beckham (1986:27–31; Beckham, Minor and Toepel 1982:89–93).



Fig. 1. Known locations of Lower Umpqua settlements on the central Oregon coast: 1 = *Mi-ku-litc'* (after Dorsey) at Winchester Bay; 2 = village on North Spit (name unknown); 3 = *éá·lila·* (after Zenk) at Gardiner; 4 = *Tki'-mi-ye'* (after Dorsey) at Umpqua/Eden; 5 = *Tšü'-lil-ä'* (after Dorsey) at Scottsburg; 6 and 7 = settlements (names unknown) at Tahkenitch Lake and Tenmile Lake.

The Lower Umpqua spoke a dialect of the Siuslaw language named after the neighboring Siuslaw people to the north, and in the *Handbook of North American Indians* the Lower Umpqua and Siuslaw were considered together under the name “Siuslawans” (Zenk 1991). The fate of the Lower Umpqua in the historic period was closely tied to that of the neighboring Hanis Coos people to the south. Today, the descendants of these native peoples are members of the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians.

The Umpqua/Eden site (35-DO-83), a prehistoric village located on the Umpqua River estuary, provides an important archaeological link to the pre-contact lifeways of the Lower Umpqua Indians. Named for a corporation that formerly owned the property, Umpqua/Eden was extensively excavated beginning in 1974 by Peter J. Stenhouse (1974) and continuing in 1978, 1979, and 1980 by summer archaeological field schools from Oregon State University (OSU) under the direction of Richard E. Ross (Ross and Snyder 1979, 1980). Based upon a radiocarbon date of  $2960 \pm 45$  BP acquired during the OSU investigations, Umpqua/Eden was identified as the oldest prehistoric site then known along the Oregon coast (Ross and Snyder 1986:83). Although subsequent archaeological research has identified a number of older sites, Umpqua/Eden stands out as one of the more important archaeological sites in this region because of the quantity and quality of the information it has yielded about prehistoric lifeways on the Oregon coast.

The most complete source of information on Umpqua/Eden, including a summary of the artifacts and an in-depth analysis of the remains of terrestrial fauna and sea mammals recovered, is a chapter in *Prehistory of the Oregon Coast* by R. Lee Lyman (1991a). Additionally, the sea mammal remains from Umpqua/Eden served as a major component in a study of the zoogeography of marine mammals along the Oregon coast (Lyman 1988), and in a study of seal and sea lion hunting practices by southern Northwest Coast peoples (Lyman 1989). More recently, a sample of over 1600 bird remains from Umpqua/Eden was analyzed by Kristine M. Bovy (2005). Subsequent studies of the artifacts from Umpqua/Eden have included x-ray fluorescence (XRF) analysis of two possible obsidian wealth blade fragments (Skinner, Bennett-Rogers, and Thatcher 1999), and analysis of stone and clay tubular smoking pipes used by the site’s inhabitants (Nelson 2000).

In 1994, small-scale investigations were undertaken in conjunction with nomination of Umpqua/Eden to the National Register of Historic Places and its acquisition by the Archaeological Conservancy (Minor 1994). This work had three objectives: (1) determine the boundaries of the cultural deposits; (2) obtain a sample of faunal remains using more fine-grained recovery methods than employed during previous investigations; and (3) establish the relationship of the site to other settlements of the Lower Umpqua people. In presenting the results of the 1994 investigations, this article focuses on aspects of Umpqua/Eden not addressed in previous reports and publications about this important archaeological site. These aspects include the historical component, the stratigraphy and chronology, the houses, and the relationship to other Lower Umpqua settlements known from the ethnographic and historical records.

## Setting

The Umpqua/Eden site is located on the southeast bank of the Umpqua River estuary approximately 3.2 km upstream from the river mouth (Fig. 2). The site is situated on a relatively level terrace approximately nine meters above high tide. The terrace drops off abruptly to a rock shelf exposed at low tide along the river bank. This rock shelf is an important geographic reference point mentioned in ethnographic and historical accounts. A small island that becomes

the center of an extensive mud flat at low tide is located approximately 2.0 km upstream. This island and its associated mud flat are rich in shellfish and waterfowl, and the island was observed to have been used as a hauling out area by harbor seals (*Phoca vitulina*) at the time of the OSU excavations (Ross and Snyder 1979:83). Behind the site, the terrain rises steeply into the forested foothills of the Coast Range.

Umpqua/Eden is situated in the coastal Sitka spruce (*Picea sitchensis*) forest zone. The Sitka spruce were logged away long ago, and the adjacent hills are now planted in Douglas fir (*Pseudotsuga menziesii*). Red alder (*Alnus rubra*) and Himalayan blackberry (*Rubus procerus*) have grown up on soils disturbed by logging. A botanical survey undertaken at the time of the 1994 investigations by Don Whereat identified the following understory plants: salmonberry (*Rubus spectabilis*), horsetail (*Equisetum telmateia*), wild cucumber (*Echinocystis oreganus*), swordfern (*Polystichum munitum*), bedstraw (*Galium* sp.), geranium (*Geranium incisum*), cow parsnip (*Heracleum lanatum*), red-flowering currant (*Ribes sanguineum*), and black twinberry (*Lonicera involucrata*). In the years since the OSU excavations, nettles (*Urtica* sp.) and canary grass (*Phalaris* sp.) have grown up in disturbed soils on the site.



Fig. 2. View to west of 1980 Oregon State University excavations, Umpqua/Eden site; Umpqua River estuary and North Spit in background (photograph courtesy of Richard E. Ross).

## 1994 Investigations

### *Site Boundary Definition*

Umpqua/Eden is one of the most extensively excavated archaeological sites on the Oregon coast. The 1974 block area excavated by Stenhouse encompassed 70 m<sup>2</sup>, and the 1978–1980 OSU excavations accounted for 132 m<sup>2</sup>. Only the Palmrose (35-CLT-47) and Par-Tee (35-CLT-20) sites at Seaside on the northern Oregon Coast, where digging was undertaken by amateur archaeologists over a ten-year period (Phebus and Drucker 1979), have been more extensively excavated (Lyman 1991b:51). Based on an analysis of the field records from the excavations directed by Ross, Lyman (1991b:309) estimated that 115 m<sup>3</sup> of cultural deposit were removed from an area of approximately 132 m<sup>2</sup>. Despite the extensive nature of these excavations, the boundaries of the cultural deposits, knowledge of which was a prerequisite for nomination of the site to the National Register, were never determined.

Auger testing has been shown to be a fast, cost-efficient, and resource-conservative method of determining the horizontal and vertical boundaries of archaeological sites (Stein 1986, 1991; Schuldenrein 1991). As a means of documenting the horizontal extent of the Umpqua/Eden site while minimizing further impacts to the cultural deposits, an auger testing program was carried out in 1994. Twenty-nine auger holes were excavated, with most of these holes situated around the site periphery. These holes were dug with a soil auger (8 cm-diameter), and the sediments removed were screened through 1/8-in. mesh. As anthropic sediments, the cultural deposits at Umpqua/Eden are dark brown to black in color and are easily distinguishable from the adjacent lighter-colored native soil. Cultural materials recovered during the auger hole excavations were limited to 125 animal bone fragments recovered from five different auger holes (all within the site boundary), and a single small chert projectile point recovered within 30 cm of the surface in Auger Hole 5 (considered outside the site boundary).

The results of the auger hole excavations indicate that the cultural deposits at Umpqua/Eden extend along the river terrace for approximately 105 meters, well beyond the limits suggested on previous site maps. Building on site maps from the 1978 and 1979 OSU excavations provided by Richard E. Ross, and on the site map published by Lyman (1991a:104), an additional site map was prepared that shows the full extent of the cultural deposits (Fig. 3). Based on the results of the 1994 auger testing conducted to define the boundary of the cultural deposit, the Umpqua/Eden Site is estimated to cover an area of approximately 2500 m<sup>2</sup>.

### *Test Excavations for Recovery of Vertebrate Faunal Remains*

The artifact and faunal collections from the OSU excavations at Umpqua/Eden in 1978, 1979, and 1980 were recovered by screening the cultural deposits through 1/4-in. mesh. Recognizing that small faunal elements, especially those from fish and birds, are under-represented with the use of 1/4-in. mesh, since 1982 the smaller 1/8-in. mesh has been the standard screen mesh size employed during most excavations at archaeological sites on the Oregon coast. To allow comparisons with faunal assemblages from more recently excavated coastal sites, in 1994 an effort was made to recover a sample of the vertebrate faunal remains at Umpqua/Eden using this more intensive recovery method.

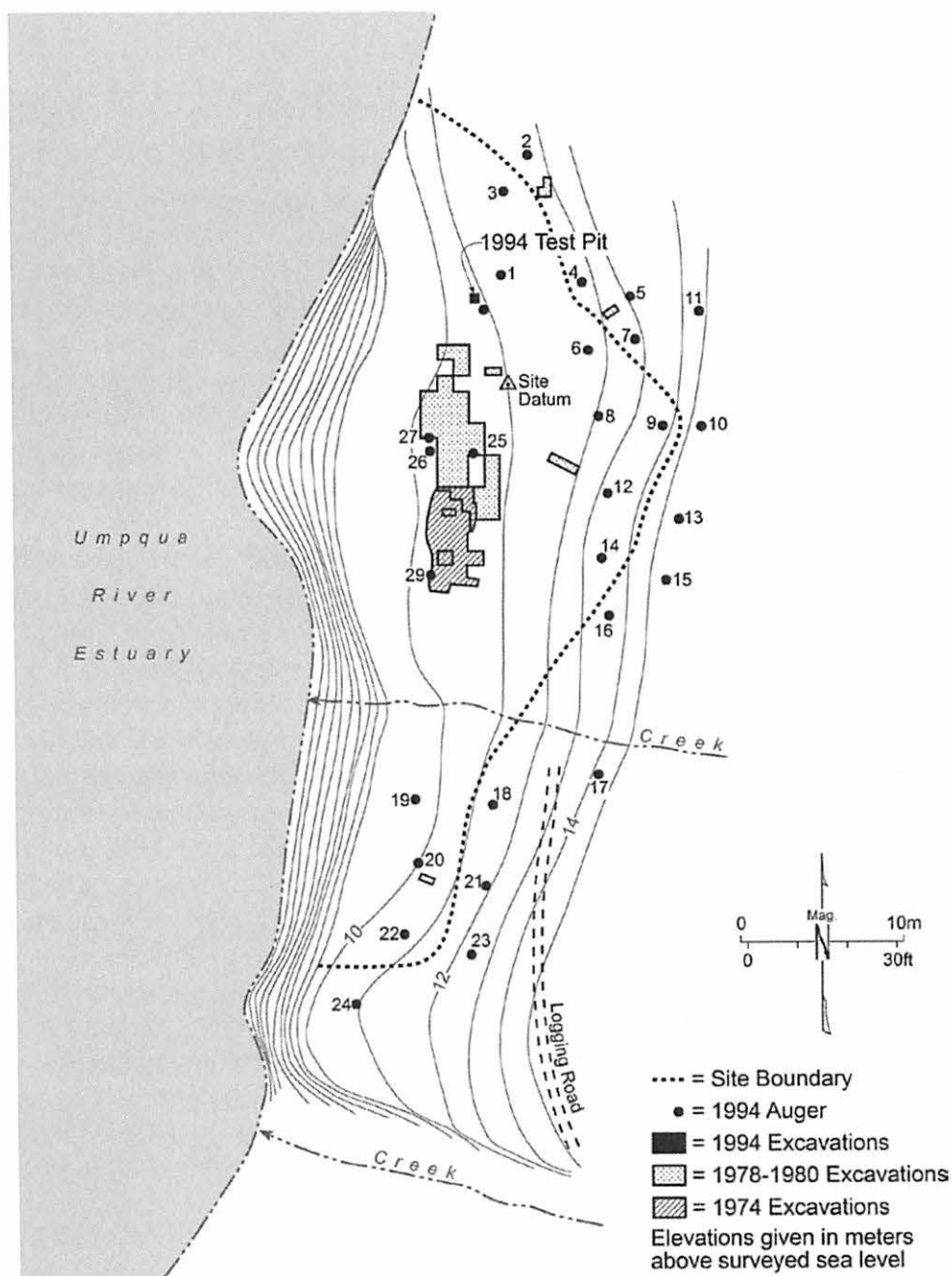


Fig. 3. Topographic map of the Umpqua/Eden site showing the location of excavation units and site boundaries.

Profiles of the cultural deposits published by Ross and Snyder (1986:85, Fig. 4) and Lyman (1991a:108–110, Fig. 5.5) were examined in an effort to place a test unit where shell midden deposits would be encountered, as shellfish fragments tend to neutralize the natural acidity of coastal soils and therefore contribute to preservation of vertebrate faunal remains. The stratigraphy at Umpqua/Eden was initially described as containing four major and three minor strata (Ross and Snyder 1986:83–89). Marine shell remains were the principal component in two major strata. A thin midden averaging less than 15 cm thick referred to as Stratum II rested on a

culturally-sterile basal clay deposit (Stratum I). Charcoal from this midden, in which preservation of organic materials was described as excellent, yielded the aforementioned radiocarbon date of  $2960 \pm 45$  BP (Ross and Snyder 1986:83). A non-shell-bearing cultural deposit (Stratum III) characterized by charcoal and fire-cracked rock concentrations and numerous living surfaces separated the early Stratum II midden from a later shell midden designated Stratum IV. Stratum IV was associated with the remains of a plank house (Ross and Snyder 1986:86).

Test excavation began by facing off an area at the edge of the river bank corresponding to grid coordinates N98/E90-92 on the OSU site map, where a profile suggested that evidence of the early shell midden might be found (Ross and Snyder 1986:85, Fig. 4). Test Pits 1 and 2 (which together formed a 1 x 2 m unit) at this location uncovered the corner of previously excavated unit 98N/92E, but no shell deposits were exposed along the N98 line. Artifacts recovered from Test Pits 1/2 were limited to 1 stone pipe fragment, 1 flaked cobble, 12 pieces of debitage, and 40 fragmentary animal bones. Test Pit 3 (measuring 100 x 50 cm) was excavated at N102-104/E92, where another profile suggested the early shell midden might be found (Lyman 1991a:109, Fig. 5.5). No shell deposits were located, and seven fragmentary animal bones were the only cultural materials recovered in Test Pit 3. The sediments in these test pits were disturbed, and probably consisted for the most part of material backfilled into previous excavation units.

During the auger hole excavations for site boundary determination, multiple shell-bearing strata were encountered in AH28 about 5 m north of the OSU excavation block. Test Pit 4 (1 x 1 m) was set up at grid coordinates N119-120/E96-97 to sample these deposits. The excavations were carried out in 10 cm levels, subdivided by strata, and the cultural deposits were screened through 1/8-in. mesh. The excavations proceeded down through multiple strata, including three thin shell bands containing abundant vertebrate faunal remains, mostly from fish, with large mammal and bird remains also represented.

The density of fish bones was so high from 110 to 190 cm below surface that a change in recovery methods was instituted. Instead of recovering faunal remains directly from the 1/8-inch mesh screens while in the field, the material that remained in the screens after sifting was bagged for sorting in the laboratory. The interval from 110 to 190 cm below surface encompassed the lowest level in Stratum 5, and all levels excavated in Strata 6 and 7. At 190 cm below surface the density of bone had declined to the extent that cultural materials could again be recovered while screening the cultural deposits in the field. Culturally-sterile sediments were reached at 225 cm below surface. An auger hole placed in the bottom of the test pit was excavated another 60 cm into sterile sediments without encountering any additional cultural deposits.

## Test Pit Stratigraphy and Radiocarbon Dating

Previous excavations at Umpqua/Eden had documented the presence of cultural deposits with a maximum depth of 1.2 meters (Ross and Snyder 1986:85, Fig. 4). As Test Pit 4 reached this depth and continued deeper below surface, there was some expectation that evidence of occupation older than the earliest radiocarbon date of  $2960 \pm 45$  BP from the site might be found. Although Test Pit 4 sampled cultural deposits almost twice as deep as the OSU excavations, radiocarbon dating indicates that the deposits in the test pit are not any older than those previously documented. Apparently, the sterile clay loam that underlies the cultural deposits at Umpqua/Eden dips downward to the north, so that deeper cultural deposits accumulated in the Test Pit 4 area than elsewhere at the site.

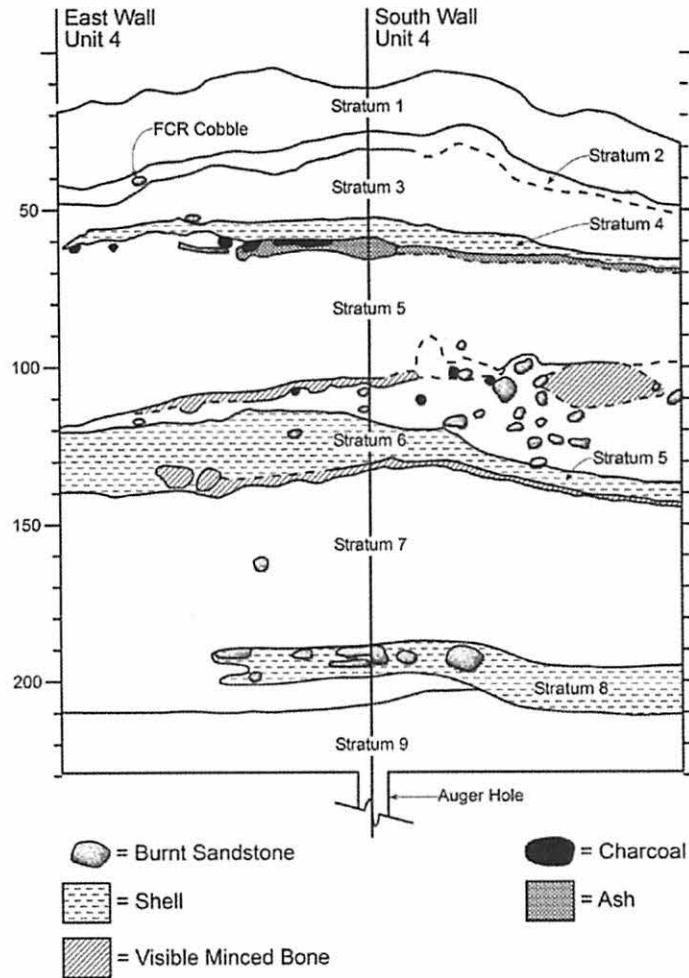


Fig. 4. Profile of stratigraphy in Test Pit 4, Umpqua/Eden site.

Altogether, nine strata, including the three thin shell bands, were encountered during the test pit excavation (Fig. 4, Table 1). To establish the age of these cultural deposits, three radiocarbon dates were obtained. Historical materials were recovered as deep as 70 to 80 cm below surface, so no attempt was made to radiocarbon date the uppermost levels of the cultural deposit. Included in these undated uppermost levels was the highest shell band, Stratum 4, situated 50–70 cm below surface.

The middle shell band, Stratum 6, was situated 120 to 140 cm below surface. Charcoal recovered from a depth of 120 to 130 cm in this stratum yielded an age of  $350 \pm 50$  BP (Beta-72694). Charcoal recovered from 150 to 160 cm below surface in Stratum 7, a non-shell-bearing cultural deposit between the middle and lower shell bands, produced an age of  $710 \pm 50$  BP (Beta-75268). The lowest shell band, Stratum 8, was situated 190 to 210 cm below surface. Charcoal recovered from a depth of 190 to 200 cm in this stratum yielded an age of  $1650 \pm 60$  BP (Beta-72695).

## Test Pit 4 Invertebrate Faunal Assemblage

The composition of the shell-bearing strata at Umpqua/Eden has not been studied in detail. Based on the extensive multi-season OSU excavations, Ross and Snyder (1986:95–96) listed “common taxa” represented as including cockle (*Clinocardium nuttalli*), bay mussel (*Mytilus edulis*), bent-nose clam (*Mascoma nasuta*), butterclam (*Saxidomus giganteus*), and horse mussel (*Volsella rectus*). Also reported as occurring in “limited quantities” were sand clams (*Macoma secta*), littleneck clams (*Protothaca staminea*), gaper clams (*Tresus nuttallii*), and horse clams (*Tresus capax*).

All of these species prefer protected waters, and most inhabit sandy and/or muddy sediments, and thus could have been obtained in the adjacent estuary. The presence of bay mussel is noteworthy, as this species attaches to rocks. The rock ledge adjacent to the Umpqua/Eden site may have provided a rocky intertidal habitat from which these bay mussels were obtained. The shellfish remains encountered during the 1994 investigations were highly fragmentary, and little new information was learned about the composition of the shell-bearing strata at the site. To obtain comparative data on midden constituents, samples (2 liters) taken from each of the three shell strata were subjected to midden analysis, including sifting through 1/4-in. and 1/8-in. mesh following Hester and Conover (1970). As measured in terms of weight, 88.2% of the shellfish remains and 85.7% of the animal bones were recovered in the 1/8-in. mesh samples (Table 2). These percentages reflect the highly fragmented condition of the shellfish remains, as well as the vast preponderance of fish bones among the vertebrate faunal remains. The recovery of such a high proportion of the shellfish remains in the 1/8-in. mesh samples suggests that reliance solely on 1/4-in. mesh during shell midden excavations may result in a serious underestimation of the importance of shellfish to a site’s inhabitants.

## Test Pit 4 Vertebrate Faunal Assemblage

A summary of the vertebrate faunal remains by stratum indicates that slightly over 46,000 vertebrate faunal remains were recovered from Test Pit 4 (Table 1). A preliminary sort of these materials into the broad categories of fish, mammals, and birds indicates the overwhelming predominance of fish remains. A brief inspection by Ruth L. Greenspan indicated that the fish remains are dominated by flatfish (Pleuronectidae), particularly starry flounder (*Platichthys stellatus*), hake (*Merluccius productus*), and herring (*Clupea pallasii*). Sardine (*Sardinops sagax*) remains were also recovered. Salmon (Salmonidae, undetermined species), various surfperches (Embiotocidae), tomcod (*Microgadus proximus*), sculpins (Cottidae), primarily Pacific staghorn sculpin (*Leptocottus armatus*), sturgeon (*Acipenser* sp.), and a variety of other, less abundant, fish are also represented. Relatively few mammalian remains were recovered; identified taxa include deer (*Odocoileus* sp.), elk (*Cervus elaphus*), harbor seal (*Phoca vitulina*), and whale (Cetacea, undifferentiated). Likewise, few bird remains were recovered; taxa identified include surf scoter (*Melanitta perspicillata*) and crow (*Corvus brachyrhynchos*).

The presence among the fish remains of a large quantity of herring head bones, which are very fragile and far less dense than most fish bones typically recovered in coastal shell middens, is noteworthy. In most Oregon coast sites containing herring remains, the herring assemblage consists largely, if not entirely, of vertebrae. The only other faunal assemblage from an Oregon

coast site yielding significant quantities of herring head bones is 35-CS-137 at Gregory Point near the south entrance to Coos Bay, approximately 45 km south of Umpqua/Eden (Minor and Greenspan 1995). The large amount of herring remains at Umpqua/Eden is consistent with the fact that Winchester Bay, 2.5 km downstream in the Umpqua River Estuary, produced more than 40% of Oregon's annual commercial herring harvest in the early 1970s, making it more productive than any other herring spawning area in the state (Gaumer, Demory, and Osis 1973:10).

TABLE 1. SUMMARY OF STRATIGRAPHY AND VERTEBRATE FAUNAL REMAINS IN TEST PIT 4

Stratum	Description	Fish	Mammal	Bird	Total
1	black (10YR2/1 moist) organic loam; black (10YR2/1 dry); neutral (Ph 6.90)	23	10	0	33
2	very dark brown (10YR3/3 moist) loam; very dark brown (10YR2/2 dry); neutral (Ph 7.00)	950	66	8	1,024
3	black (10YR2/1 moist) loam; very dark brown (10YR2/2 dry); neutral (Ph 6.87)	662	74	22	758
4	very dark brown (10YR2/2 moist) very shelly loam; very dark gray (10YR3/1 dry); neutral (Ph 7.05)	1,150	96	29	1,275
5	black (10YR2/1 moist) loam; black (10YR 2/1 dry); slightly acid (Ph 6.56)	10,327	288	41	10,656
6	very dark brown (10YR2/2 moist) shelly loam; very dark brown (10YR2/2 dry); neutral (Ph 7.28)	28,601	243	30	28,874
7	black (10YR2/1 moist) organic loam; black (10YR2/1 dry); neutral (Ph 7.04)	2,849	196	12	3,057
8	very dark brown (10YR2/2 moist) shelly loam; very dark grayish brown (10YR3/2 dry); neutral (Ph 6.92)	374	15	11	400
9	very dark brown (10YR2/2 moist) clay loam; dark yellowish brown (10YR4/4 dry); slightly acid (Ph 6.42)	0	0	0	0
Vertebrate Faunal Totals		44,936	988	153	46,077

TABLE 2. MIDDEN ANALYSIS OF THREE SHELL STRATA EXPOSED IN TEST PIT 4

Category	1/4-inch Mesh	1/8-inch Mesh	Totals
<b><i>Stratum 4</i></b>			
Mollusc	61.57g	432.41g	493.98g
Bone	0.58g	1.23g	1.81g
Charcoal	7.31g	8.92g	16.23g
Fire-cracked Rock	124.22g	10.62g	134.84g
Residue			722.14g
Stratum 4 Summary	193.68g	453.18g	1369.00g
<b><i>Stratum 6</i></b>			
Mollusc	0.21g	11.49g	11.70g
Bone	1.08g	12.75g	13.83g
Charcoal	14.15g	16.58g	30.73g
Fire-cracked Rock	79.49g	10.33g	89.82g
Residue			858.08g
Stratum 6 Summary	94.93g	51.15g	1004.16g
<b><i>Stratum 8</i></b>			
Mollusc	-----	18.65g	18.65g
Bone	1.14g	2.79g	3.93g
Charcoal	1.78g	5.46g	7.23g
Fire-cracked Rock	184.69g	8.82g	193.51g
Residue			1130.89g
Stratum 8 Summary	187.61g	35.72g	1354.21g

## 1994 Artifact Assemblage

The 1994 test excavations recovered 111 stone and bone/antler artifacts (Table 3). Flaked stone tools included 3 chert projectile points (2 small narrow-necked, 1 large broad-necked), and 3 biface fragments (2 obsidian, 1 chert). Cobble tools included 1 maul fragment, two edge-battered cobbles, one flaked cobble, and three sandstone abrader fragments. Debitage included 28 chert flakes and 22 obsidian flakes. Bone/antler tools included 1 fragmentary harpoon toggle, 1 bone point, 2 awl tip fragments, 1 chisel, 5 wedge fragments, and 13 pieces of worked bone. One more artifact found is a fragment from a clay pipe, examples of which have been previously found at Umpqua/Eden (Ross and Snyder 1986:92; Lyman 1991a:121). The 4 stone and 5 clay pipes previously found at Umpqua/Eden represent one of the larger assemblages of pipes so far reported from the Oregon coast (Nelson 2000).

TABLE 3. SUMMARY OF ARTIFACTS RECOVERED DURING 1994 INVESTIGATIONS\*

Artifact Class	AH5	TP1/ TP2	Test Pit 4 Stratum Number								Totals	
			1	1/2	2	3	4	5	6	7		8
Historical Artifacts												
Window Glass			1									1
Container Glass				1				1				2
Machine-cut Nails			2	4								6
Glass Beads				2								2
Flaked Stone Tools												
Projectile Points	1		1					1				3
Bifaces				1				2				3
Cobble Tools												
Maul								1				1
Edge-battered Cobbles								1	1			2
Chopper		1										1
Abraders						1		2				3
Debitage												
Chert Flakes		5		3	1	1		6	7	11		34
Obsidian Flakes		3	2	10		3	1	1	2	3		25
Basalt Flakes		1										1
Quartzite Flakes		2										2
Quartzite Chunk		1										1
Other												
Clay Pipe		1										1
Bone/Antler Tools												
Harpoon Toggle								1				1
Bone Point								1				1
Awl Tips										2		2
Chisel								1				1
Wedges						1		3		1		5
Worked Bone						2		5	2	3	1	13
Totals	1	14	6	21	1	8	1	26	12	20	1	111

\* With the exception of Auger Hole 5, no artifacts were recovered in the auger holes, or in Test Pit 3, excavated during the 1994 investigations.

Previous investigations at Umpqua/Eden recovered 26 tools made of obsidian and 392 pieces of obsidian debitage, easily constituting the highest number of obsidian artifacts so far reported from an archaeological site on the Oregon coast (Lyman 1991a:121, Table 5.3). The site's inhabitants almost certainly had greater access to obsidian than other coastal peoples, and the retention of cortex on much of the debitage led to the suggestion that small obsidian nodules may occur in the gravels of the Umpqua River (Lyman 1991a:121). Some obsidian artifacts at Umpqua/Eden were made from material originating in distant sources. Two biface fragments from what were probably obsidian wealth or ceremonial blades have been subjected to XRF analysis. One was matched to Glass Buttes and the other to Silver Lake/Sycan Marsh, both sources east of the Cascade Range in central and south-central Oregon, respectively (Skinner, Bennett-Rogers, and Thatcher 1999).

## Conclusions from Archaeological Investigations

### *Historical Component*

"Remnants of historic occupancy" at Umpqua/Eden were observed during the archaeological investigations by Ross and Snyder (1979), who noted that "during the 1850s this river terrace was the location of a customs building and post office built in conjunction with Fort Umpqua, which was located directly opposite on the north bank." They later added that most of the historical artifacts recovered were "structural elements such as window glass, nails, hinges, or fragments of pottery and other household goods. Very few personal items were recovered" (Ross and Snyder 1986:92). In addition, bones from domestic mammals, specifically sheep/goat (*Ovis/Capra*), cow (*Bos taurus*), and pig (*Sus scrofa*) were among the faunal remains recovered from the site (Lyman 1991:149).

Historical materials recovered during the 1994 testing included one piece of window glass, two pieces of container glass (one brown, one green), six machine-cut nails, and two glass beads. The thickness of the window glass (0.079 in.) is consistent with manufacture between 1850 and 1885 (Roenke 1978:116, Table 30). The glass beads, apparently the first reported from the Umpqua/Eden site, are small seed beads, one turquoise and one white. The finding of these beads suggests that the Lower Umpqua continued to occupy Umpqua/Eden into the early contact period, which is consistent with the ethnographic record.

Aside from the glass beads, the historical artifacts recovered could be associated with Euroamerican settlement, which may have begun as early as 1850 when the townsite of West Umpqua was laid out on the heavily forested shore across the estuary from Umpqua City in the sand dunes on the North Spit (Beckham 1986:72). The customs building and post office which Ross and Snyder placed at Umpqua/Eden were actually located at Gardiner and Umpqua City, respectively (Beckham 1986:180, 183). The U.S. Army occupied Fort Umpqua, situated across the estuary on the North Spit from Umpqua/Eden, from 1856 to 1862 (Beckham 1986:157–158).

### *Stratigraphy and Chronology at Umpqua/Eden*

The sequence of four major and three minor strata identified by Ross and Snyder (1986) was later modified into five more or less temporally distinct analytic zones (designated UEI through UEV) by Lyman (1991a:106–112). Strata I (culturally sterile basal clay) and II (thin shell midden less than 15 cm thick), with which the early radiocarbon date of  $2960 \pm 45$  BP was

associated, were combined into UEI. The non-shell-bearing Stratum III, in which abundant evidence of occupation was found, was divided into lower and upper portions by Lyman (1991a:107–112). The lower portion, assigned to UEII, produced a radiocarbon date of  $1970 \pm 45$  BP. The upper portion of Stratum III was apparently contemporaneous with formation of the late shell midden designated Stratum IV, and the two were combined into UEIII. Five radiocarbon dates were obtained from the upper portion of Stratum III and Stratum IV:  $240 \pm 40$  BP,  $350 \pm 45$  BP,  $440 \pm 45$  BP,  $620 \pm 55$  BP, and  $870 \pm 40$  BP (Lyman 1991a:111). Cultural materials recovered from the floor of a plank house, estimated by Ross and Snyder (1986:83) to have been constructed between A.D. 1700 and 1800, were assigned to UEIV. All other cultural materials, including those from Ross and Snyder's Strata V, VI, and VII, were assigned to UEV.

The stratigraphy and radiocarbon dates from the 1994 test pit correlate reasonably well with the stratigraphy observed by Ross and Snyder and the analytic zones defined by Lyman (Table 4). The uppermost test pit deposits (Strata 1, 2, 3) and the highest shell band (Stratum 4) probably correlate with Ross and Snyder's Strata V, VI, and VII and Lyman's UEV. The middle test pit deposits with radiocarbon dates of  $350 \pm 50$  BP from the Stratum 6 middle shell band and  $710 \pm 50$  BP from the Stratum 7 non-shell bearing deposit below are probably correlative with Ross and Snyder's Strata III and IV and Lyman's UEIII.

Interpretation of the earliest radiocarbon date obtained in conjunction with the 1994 investigations, however, is problematic. The date of  $1650 \pm 60$  BP was associated with Stratum 8, the lowest shell band in the test pit, which was situated 190 to 210 cm below surface. This stratum occurred more deeply below the surface than any cultural deposits previously encountered at Umpqua/Eden, which did not exceed 1.2 meters in depth. Although shell deposits were not previously reported in Stratum III (Ross and Snyder 1986:86), the date of  $1650 \pm 60$  BP from the 1994 test pit is close enough to the date of  $1970 \pm 45$  BP reported by Lyman (1991a:111) to suggest that the thin shell band of Stratum 8 should be included within UEII. While it is important to not read too much into the results of a test pit excavation, it appears that in addition to the two shell strata identified during the OSU excavations, a third shell stratum roughly intermediate in age is present in the northern portion of the site. Because shell middens are built up from many discrete episodes of deposition, it is not surprising that discrete shell strata occur within the context of more expansive cultural deposits. The thin shell band of Stratum 8 rested directly on culturally sterile sediments. The earliest occupation of the site, with the associated radiocarbon date of  $2960 \pm 45$  BP, apparently did not extend into this northern area.

### *The Umpqua/Eden Houses*

The OSU excavations documented the presence of a "large semisubterranean plank structure" estimated to measure 8 x 30 m at Umpqua/Eden. Only a small portion of this house was excavated, but two closely juxtaposed house floors were apparently present (Lyman 1991a:112). Ross and Snyder (1986:83) estimate that construction of this structure occurred sometime between A.D. 1700 and 1800, while Lyman (1991a:112) places its construction "sometime between A.D. 1700 and 1850." According to Ross and Snyder (1986:86), "the estimated size, location, and physical evidence indicate a strong similarity to mid-nineteenth century drawings of Umpqua plank houses." The large structure at Umpqua/Eden presumably represents a local version of the rectangular gable-roofed plank house characteristically built by ethnographic Northwest Coast peoples.

TABLE 4. CORRELATION OF STRATIGRAPHY, ANALYTICAL ZONES, AND RADIOCARBON DATES AT UMPQUA/EDEN

Strata <sup>a</sup>	Description	Analytic Zone <sup>b</sup>	1994 Test Pit 4 Strata	<sup>14</sup> C Years BP	Lab No. <sup>c</sup>
V, VI, VII	Erosional & disturbed matrix	UEV	1–4 <sup>d</sup>	none	
	Long-house floor	UEIV		none <sup>e</sup>	
III (upper) & IV	Upper portion of sandy loam & late shell midden	UEIII	5–7 <sup>d</sup>	240 ± 40 350 ± 45 350 ± 50 440 ± 45 620 ± 55 710 ± 50 870 ± 40	DIC-3263 DIC-3265 Beta-72694 DIC-3262 DIC-3264 Beta-75268 DIC-3261
III (lower)	Sandy loam rich in fire-cracked rock; series of occupation surfaces, floors, hearths	UEII	8 <sup>d</sup>	1650 ± 60 1970 ± 45	Beta-72695 DIC-3260
II	Thin shell midden averaging less than 15 cm in depth	UEI		2960 ± 45 <sup>f</sup>	DIC-1174
I	Deep clay zone, culturally sterile below 10 cm interface with overlying shell midden				

<sup>a</sup> from Ross and Snyder (1986)

<sup>b</sup> from Lyman (1991a:106–112)

<sup>c</sup> DIC prefix indicates OSU dates; Beta prefix indicates dates reported here

<sup>d</sup> 1994 Test Pit 4 Strata 4, 6 (350 ± 50 BP), and 8 (1650 ± 60 BP) are shell bands; Strata 1–3, 5, and 7 (710 ± 50 BP) are non-shell-bearing cultural deposits

<sup>e</sup> estimated to date from A.D. 1700–1800 (Ross and Snyder 1986:83)

<sup>f</sup> from base of Stratum II (Ross and Snyder 1986:83)

Significantly, evidence of another, earlier, house style also was found at Umpqua/Eden (Fig. 4). A house exposed during the 1974 Stenhouse excavations is described as having a “hard-packed floor” with “grooves around it indicating the remains of edge-placed planks” (Ross and Snyder 1979:np). This house was curvilinear in outline and measured approximately 3 x 4 m; its stratigraphic context and age are unknown. A second house similar to the one found by Stenhouse

was exposed during the excavations by Ross and Snyder in 1979 and 1980. This house, which also had a hard-packed floor that was curvilinear in outline, measured approximately 2.5 x 3 m. A radiocarbon date of  $640 \pm 55$  BP was associated with this feature (Lyman 1991a:124–125).

The relatively small size of these structures (3 x 4 meters and 2.5 x 3 m) suggests that both probably housed a single nuclear family of perhaps four to seven people (Lyman 1991a:125–126). In terms of size and shape, the small curvilinear houses at Umpqua/Eden are similar to small pithouses characteristically associated with Archaic cultures throughout western North America. The small pithouses at Umpqua/Eden represent the best examples of this house style so far documented on the southern Northwest Coast.

Farther north on the Oregon coast, the occurrence of rectangular plank houses similar to those made by ethnographic Northwest Coast peoples has considerable time depth. A rectangular house that was apparently similar in many respects to the Northwest Coast style plank house found at the Palmrose Site in Seaside produced a radiocarbon date of  $2565 \pm 70$  BP (Connolly 1992:28). The relatively late transition from the small pithouses to the large rectangular plank house in evidence at Umpqua/Eden is significant, as it suggests that the inception of ethnographic lifeways, at least in terms of house styles, did not occur uniformly along the Oregon coast. The recent age of the Umpqua/Eden plank house is consistent with evidence from elsewhere on the central and southern Oregon coast, where the few structures that appear to represent rectangular plank houses all date to late prehistoric or early historic times.

## Relationship of Umpqua/Eden Site to Lower Umpqua Settlements

In August 1840, Gustavus Hines wrote: “The Indians inhabiting the Umpqua valley, from the Pacific ocean 100 miles into the interior, are very few” (Hines 1851:117). Hines did not distinguish between the Lower Umpqua near the mouth of the river and the Upper Umpqua, a separate people speaking an Athapaskan language, who occupied the Umpqua River Valley above tidewater. In referring to the native inhabitants of the Umpqua Valley as a whole, Hines continued that “the Umpqua tribe, but a few years ago numbering several hundred, by disease and their family wars has been reduced to less than seventy-five souls” (Hines 1851:117).

It is likely that the Lower Umpqua population was initially reduced by infectious diseases introduced through contacts with Spanish or English maritime explorers. The first documented epidemic along the Northwest Coast, the smallpox epidemic of the 1770s, was observed among the Tillamook of the northern Oregon coast, but no Europeans were present to record whether it spread to peoples farther south. The later smallpox epidemic of 1836–1837 was experienced by all native peoples in southwest Oregon (Boyd 1999:268).

Forty-four years after Hines described the native peoples along the Lower Umpqua River, J. Owen Dorsey worked with informant Louisa Smith on the Siletz Reservation. The daughter of a Lower Umpqua woman and a Siuslaw man, Smith enumerated 21 place names in Lower Umpqua territory (Dorsey 1890). Unfortunately, between the dearth of detailed maps for the Oregon coast and Dorsey’s lack of familiarity with the region’s geography, little information was recorded about the locations of these settlements. The same problem exists for the placenames compiled by Dorsey for other Oregon coast peoples, who included the Yaquina, Alsea, Siuslaw, Coos, Upper Coquille, and Athapascans in southern Oregon and northern California.

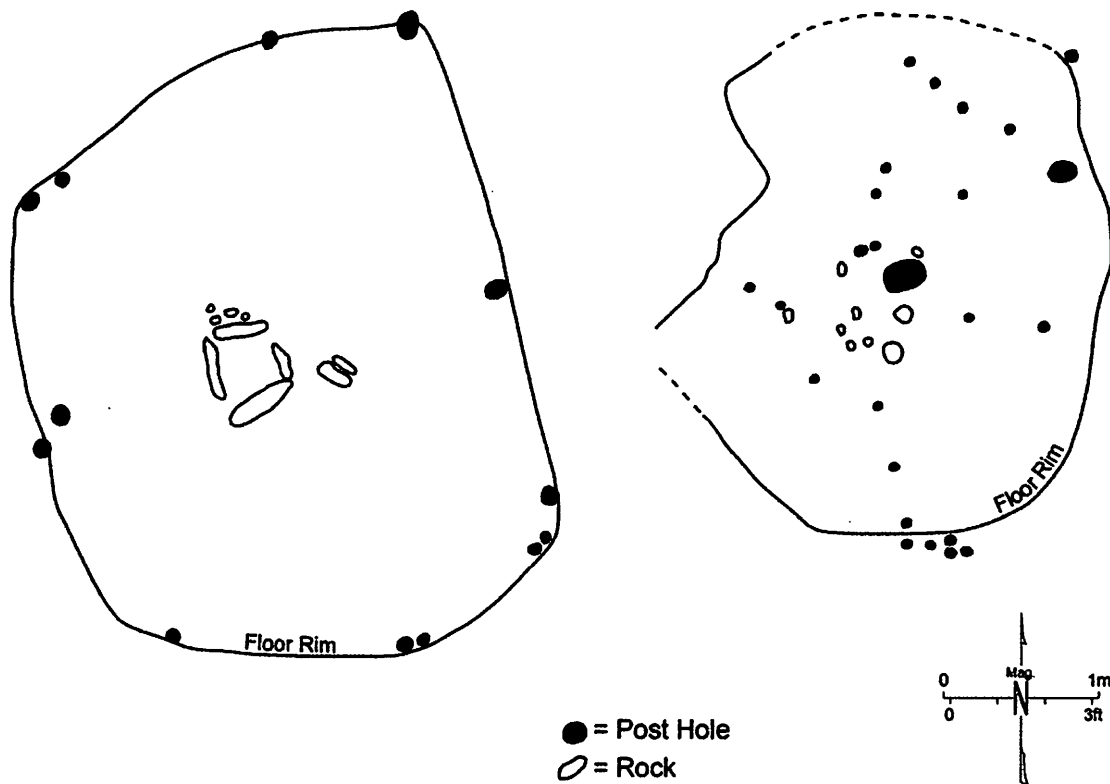


Fig. 5. Plans of pithouse floors at Umpqua/Eden: left, house uncovered in 1974; right, house uncovered in 1979–1980 (adapted from Lyman 1991a).

The only previous attempt to map the locations of Lower Umpqua settlements was made by Henry Zenk in his article “Siuslawans and Coosans” in the *Handbook of North American Indians* (Zenk 1990). Zenk located four “villages” in an area labeled “Lower Umpqua” on a map with the caption “Siuslawan and Coosan territories and villages about 1830” (Zenk 1990:573, Fig. 1). Three of these villages were on the Lower Umpqua River; the fourth was to the north on Tahkenitch Creek. Supporting documentation for the placement of these villages was not provided.

Further information on the location and identification of Lower Umpqua settlements is presented here. Much of this information is derived from unpublished ethnographic fieldnotes among the papers of John C. Harrington (1942). Included among the sources of information about Lower Umpqua settlements are accounts recorded by John Marr, Harrington’s assistant, from Jim Buchanan, Frank Drew, and Lottie Evanoff, who were Coos Indians, and Spencer Scott, a Siuslaw Indian. The familiarity of these individuals with Lower Umpqua territory was derived, at least in part, from their experiences in the historic period. Also useful are historical accounts pertaining to the period before removal of the Lower Umpqua and Coos peoples to reservations. The orthography in this paper follows the spelling (as closely as possible) of placenames (in italics) as recorded by the various ethnographers so that readers can trace the discussion back to the original sources. Although available information is fragmentary and sometimes contradictory, the general locations of seven Lower Umpqua settlements can be identified with some certainty (Fig. 1).

### Winchester Bay

In August 1840, Gustavus Hines noted in his journal: “On arriving at the coast we found the Indians living in three small villages, the larger being on the south side of the river, and the other two being on the north side of the river” (Hines 1851:103). The larger village on the south side of the river referred to by Hines was on Winchester Bay. On Dorsey’s (1890) list, No. 20 *Mī-ku-lītc’* was identified as “at the mouth of Winchester Bay, by the ocean, where there is now a light-house” (Dorsey 1890:231).

Spencer Scott, Louisa Smith’s son, related the Lower Umpqua name for the Umpqua River as *koh’ eetch’* (Harrington 1942:Roll 30, Frame 116). This seems very close to *Ku’-i-lītc’*, No. 18 on Dorsey’s (1890) list, which suggests that the latter may refer to a feature of the landscape (e.g., the river) rather than to a settlement. Scott also provided *kow-ah’ lich* as the name of Winchester Bay (Harrington 1942:Roll 30, Frame 117). These place names are tied to an oral tradition about the village at Winchester Bay (Harrington 1942:Roll 24, Frames 305, 308). A little south of the village at Winchester Bay are two rocks (now buried by sand) known as the Pack Basket rocks. These rocks were so named from a local myth of two women from the village of *Tki’-mi-ye’* (variously spelled) who set their pack baskets down on the beach, and these pack baskets turned to stone. Spencer Scott said “Winchester Bay city is called from *k’á·wwál*, packbasket (big mouth and small bottom, 1½ ft. tall). From this is formed Coos *k’áwli·tj’*” (Harrington 1942: Roll 23, Frame 591).

### North Spit

The location of the first of the two villages “on the north side of the river” noted in 1840 by Hines (1851:103) probably corresponds to the village on the North Spit shown on Zenk’s map (1990:573, Fig. 1). This village was in existence by 1850, as it appears on a map of the mouth of the Umpqua River made that year by Captain Albert Lyman (1851), where it is shown as situated immediately south of the new settlement of Umpqua City. This North Spit village may also correspond to the “Second Village” mentioned in Alexander McLeod’s report on his expedition to recover property taken by the Lower Umpqua Indians following their attack on Jedediah Smith’s camp near the nearby mouth of Smith River on 14 July 1828. After recovering a considerable amount of Smith’s property from a “Village pretty populous” that almost certainly corresponds to the Lower Umpqua village at Gardiner (discussed below), in his entry on 27 October McLeod wrote that “we proceeded down Stream in three Canoes, took a position opposite to the Second Village—these people immediately restored what they possessed of Mr. Smiths Property. . .” (Sullivan 1992:128, original spelling and capitalization).

In 1855, the Lower Umpqua Indians were collected at this village, at which time it was identified as the Umpqua Indian Sub-Agency (Beckham 1990:5–7). The next year Indians from the south at Coos Bay were moved to the Sub-Agency as well, so that 125 Lower Umpqua and 234 Coos Indians lived at the site in 1856 (Beckham 1986:108). An “Indian village” at this location is shown on the 1858 plat of survey by Harvey Gordon (1858). In 1859, the village was abandoned when the U.S. Army forcibly marched the surviving Indians north up the coast to the Alsea Sub-Agency at Yachats on the Siletz Reservation. Spencer Scott was apparently referring to this site on the North Spit when he identified the “sand bar where Umpqua Indians had a village once” as *sah’t’ tah’ wah’ se* (Harrington 1942:Roll 30, Frame 117), a placename that does not appear to correlate with any on Dorsey’s list.

## Gardiner

The second of the two villages noted by Hines in 1840 as being on the north side of the Umpqua River almost certainly corresponds to the Lower Umpqua settlement at Gardiner. Zenk (1990:573, Fig. 1) placed a village at Gardiner and identified it as *ćá·lila·*. Numerous finds of artifacts on farmland at the north end of the town reported over the years point to a former village in this area. After World War II, the International Paper Company purchased the property, and subsequent building and paving have made the site inaccessible. No sources were cited by Zenk supporting association of the name *ćá·lila·* with this site, but he may have obtained this idea from a passage in Harrington's unpublished fieldnotes in which informants Frank Drew and Spencer Scott discussed Dorsey's placenames. Drew identified *tš'á·lilâ·* as at Gardiner, but Spencer Scott thought the name "sounds upper river" (Harrington 1942, Roll 023, Frame 723B).

The Lower Umpqua village at Gardiner is almost certainly one referred to in Alexander McLeod's report on his expedition to recover Jedediah Smith's property taken by the Lower Umpqua Indians. In his entry on 21 October, McLeod wrote that he had proceeded down the Umpqua River to

within about 1½ Mile of the Village pretty populous, on observing a Couple of Graves newly erected excited our Curiosity and on enquiry of the Indians in Company, they told us it was two Individuals of the *Ds-alel* Indians Killed in the fray by the Party defeated by them (Sullivan 1992:128, original spelling and capitalization).

## Umpqua/Eden

Although not mentioned by Hines in 1840, the Umpqua/Eden site represents yet another substantial Lower Umpqua Indian village on the lower Umpqua River estuary. In his entry on 18 November 1851, Captain Albert Lyman mentions seeing "old Indian cellars" at a former Indian settlement across the estuary from Umpqua City, which would place it at, or very close to, the Umpqua/Eden site:

Am stopping now with Mr. Mann at Umpqua City. Yesterday went over with him to his turnip garden on the other side of the river. Saw a number of old Indian cellars there. There a great many marks of indian houses and graves in all parts showing that the Indians must formerly have been much more numerous than at the present time (Lyman 1851, original spelling).

In 1856, while assessing the mineral resources of the Umpqua Valley, geologist John Evans again described an Indian settlement on the lower estuary that may refer to the Umpqua/Eden site: "Opposite on the other side of the river is a fine exposure of sandstone, the bank is heavily wooded with fir, etc., but three or four acres at the top of the bluff have been cleared for a garden. It was formerly the site of a large Indian village" (Evans 1856). Aside from Umpqua/Eden, no other major prehistoric archaeological sites have been found along the east shore of the Umpqua River estuary.

Unpublished ethnographic accounts in the John C. Harrington papers suggest that Umpqua/Eden corresponds to the village identified on Dorsey's list as No. 19. *Tki'-mi-ye'*. Although according to Dorsey *Tki'-mi-ye'* was "at Winchester Bay" (Dorsey 1890:231), an account in the Harrington papers states that Coos informant Frank Drew "has actually heard [of] *t'k'r·mryà·*, it is sort of a level place (but now grown up), ½ m. up the Ump. R. from Winchester

Bay. Frank has actually seen this place; Frank positively knows that they hollered from *t'k'í·mlyà·*, for Jim Buchanan told him so, there is a point of land there sticking out from the s. bank. . . ." (Harrington 1942:Roll 23, Frame 616). The statement that "they hollered from *t'k'í·mlyà·*" refers to this settlement's location along a relatively narrow section of the estuary where someone on the opposite bank could be summoned to ferry people across the river.

Coos Indian informant Lottie Evanoff recalled that "There was an upper Injun ferry across the Umpqua River above Winchester Bay. My father always used to call that place [in] H[anis Coos] *k'wli'·yæx̥xæ·* " (Harrington 1942:Roll 23, Frame 607A). An additional account in Harrington's papers notes that "Spencer [Scott], when I read him Lott's father's placename, says at once this is evidently the Coos name of the Umpqua place name *t'k'í·mlyà·*" (Harrington 1942:Roll 23, Frame 610). *Takimiya* is mentioned in four Coos myth tales related by Jim Buchanan to Henry Hull St. Clair in 1903 (Frachtenberg and St. Clair 1909).

### *Scottsburg*

The easternmost Lower Umpqua village was located upstream at the head of tidewater where a great fishery occurred at the first rapids on the Umpqua River above Scottsburg. Dorsey's informant Louisa Smith was especially familiar with this settlement because it was her father's village, and she identified this settlement at the upstream limit of the estuary as *Tsä'-lil-ä'*. There is also a small creek slightly north of Wells Creek that formerly went by the name Salile. John Gagnier, last trader at the Hudson's Bay Company's Fort Umpqua near present-day Elkton who had a Lower Umpqua wife, took out a donation land claim at this creek.

In his list of Lower Umpqua villages, Dorsey (1890:231) identified "1. *Tsä'-lil-ä'*, same as *Shalala*, *Silela*, *Isalleet*, and *Tsalel* of different writers." The placement of a Lower Umpqua village named *éá·lila·* or *Tsä'-lil-ä'* at two different locations, one at Gardiner and the other upriver near Scottsburg, may reflect seasonal movements up and down the Umpqua River. For example, this practice is well documented among the Chinookan peoples of the Lower Columbia, where variously named groups (e.g., Skillute, Shoto, Wahclellahs) were placed at different locations along the river as they moved seasonally from the lower river to fisheries upstream at Willamette Falls, the Cascades, and The Dalles (Hajda 1984; Boyd and Hajda 1987). In a similar manner, identification of a settlement named *éá·lila·* or *Tsä'-lil-ä'* at two different locations may reflect seasonal movement of the Lower Umpqua back and forth from Gardiner on the lower river upstream to the fishery at the head of tidewater near Scottsburg.

### *Other Lower Umpqua Settlements*

The foregoing discussion accounts for only a small number of the 21 Lower Umpqua placenames on the list compiled by Dorsey (1890). With the steep decline in population following the introduction of infectious diseases, the surviving Lower Umpqua likely joined together in the few villages along the Umpqua River estuary noted in historical accounts. By 1884 when J. Owen Dorsey interviewed Louisa Smith on the Siletz Reservation, the locations of most of the placenames listed had already been lost to memory.

Many of these unaccounted for placenames may refer to settlements, both seasonal and permanent, away from the Umpqua River. After observing that the Lower Umpqua Indians were living in three small villages near the mouth of the Umpqua River at the time of his visit in 1840, Gustavus Hines continued: "The whole number, as near as we could ascertain, amounted to about

two hundred men, women, and children, about one-third of whom were absent in the mountains, for the purpose of gathering berries” (Hines 1851:103–104).

Alexander McLeod’s report on his expedition to recover property taken from Jedediah Smith’s camp mentions Lower Umpqua Indians inhabiting two settlements away from the estuary. On 29 October 1828, McLeod’s party recovered additional items of Jedediah Smith’s property from a settlement “where a Small Party of Indians [was] residing” on Tahkenitch Creek, to the north of the Umpqua River (Sullivan 1992:129, original spelling and capitalization). This settlement may correspond to the village on the west side of Tahkenitch Lake shown on Zenk’s (1990:573, Fig. 1) map of Lower Umpqua villages. On 9 November 1828, McLeod’s party recovered additional items of Jedediah Smith’s property at a settlement of Lower Umpqua Indians at Tenmile Creek, south of the Umpqua River. McLeod’s description of “a large party of Indians Stationed here, not usually the Case,” suggests that this settlement may not have been a permanent village (Sullivan 1992:130, original spelling and capitalization). A settlement at Tenmile Creek is shown on Zenk’s (1990:573, Fig. 1) map as the location of the Hanis Coos village *cgé·ič*, “a summer village with some permanent inhabitants.” As it formed the boundary between their territories, it is likely both Lower Umpqua and Coos settlements occurred along Tenmile Creek.

## Summary

Based on the results of the auger testing conducted to define the boundary of the cultural deposits, the Umpqua/Eden site is estimated to cover an area of approximately 2500 m<sup>2</sup>. As the 1974 block area accounted for 70 m<sup>2</sup>, and the 1978–1980 excavations accounted for 132 m<sup>2</sup>, over 2200 m<sup>2</sup> of site area remain. Although previous excavations removed much of the richest portions of the cultural deposits, and the remaining portions include shallower peripheral areas, the limited 1994 testing indicates that substantial cultural deposits, rich in information about prehistoric use of this locality, remain to be investigated at the Umpqua/Eden site. Based on this small sample utilizing fine-grained recovery techniques, the assemblage appears typical of estuarine sites along the Oregon coast, with a strong emphasis on fish and shellfish exploitation, as well as exploitation of a variety of marine and terrestrial mammals, and birds.

Of the rich and diverse faunal collections from Umpqua/Eden, only the remains of terrestrial and sea mammals (Lyman 1988, 1989, 1991a), and the bird remains (Bovy 2005), have so far been studied in detail. Although largely overlooked in previous analyses of collections from the site, the 1994 Test Pit 4 excavation indicates that fish remains were a major constituent of the faunal assemblage from Umpqua/Eden, and may have been of greater importance than either mammals or birds. Recovery of over 46,000 fish remains during the 1994 test excavations provides a basis for comparing the fishing practices at Umpqua/Eden with those in evidence at other archaeological sites excavated since 1982 on the Oregon coast where more intensive methods for recovery of small faunal remains (through 1/8-in. mesh screens) were employed.

The Umpqua/Eden site, identified here as the settlement of *Tki'-mi-ye'*, is the only known Lower Umpqua village so far subjected to archaeological investigations. This site has yielded an abundance of evidence, much of it still unanalyzed, on the material culture and lifeways of the prehistoric people living along the shore of the Umpqua River estuary over approximately the last 3000 years before historic contact. As indicated most directly by the change from Archaic-style pithouses to a Northwest Coast-style plank house, the archaeological deposits at Umpqua/Eden contain a remarkable record of the emergence of a local variant of Northwest Coast culture around the Umpqua River estuary as practiced by the Lower Umpqua people on the central Oregon coast.

## ACKNOWLEDGMENTS

Small-scale investigations at the Umpqua/Eden site in 1994 were carried out under the terms of State of Oregon Archaeological Permit AP-125. Funding for these investigations was provided by Historic Preservation Fund Grant 894 to Rick Minor and Don E. Dumond of the University of Oregon from the Oregon State Historic Preservation Office. Support for this project was also provided by Bill and Sheila Julian, former owners of the Umpqua/Eden site, and by the Archaeological Conservancy, which purchased the 127.8-acre property from the Julians in 1993. This was the first property purchased by the Archaeological Conservancy in Oregon. The property was then transferred by the Archaeological Conservancy to the Bureau of Land Management, Coos Bay District. Copies of site maps from previous investigations carried out under his direction were provided by Richard E. Ross. Kristine M. Bovy kindly shared the chapter from her doctoral dissertation on her analysis of bird remains from Umpqua/Eden that she intends to publish in the future. This paper was improved by suggestions made by *JONA* Editor Darby Stapp and reviewer R. Lee Lyman. Field records and collections resulting from this project are curated at the Museum of Natural and Cultural History at the University of Oregon under Accession No. 936. The Umpqua/Eden site was entered on the National Register of Historic Places on 11 January 1996.

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## LAMPREY “EELS” IN THE GREATER NORTHWEST: A SURVEY OF TRIBAL SOURCES, EXPERIENCES, AND SCIENCES

Jay Miller

### ABSTRACT

Pacific Lamprey, an ancient and underappreciated “eel-like fish” that is endangered globally, is an important source of medicine, food, and heritage for Northwest tribes. Usually described by non-natives as “ugly,” with sucker-like “mouths” and muscular snake-like bodies, their significance along the Columbia River and its tributaries, such as the Umatilla, is becoming better documented. Their diminishing catch at Rainbow Falls on the Chehalis River is documented here for the first time, followed by summaries of comparative traditional ecological knowledge studies for the Cowlitz, Yakama, Umatilla, and Klamath tribes. A review of biological data in the interests of “scientific” cooperation, relying heavily on urgent studies of invasive Atlantic Sea lamprey devastating the Great Lakes fishery, is followed by a brief consideration of the pros and cons of impacts from current federal laws, regulations, and memoranda of agreements. After millions of years as the major biomass of many Northwest rivers, hydropower dams and urban development, as well as impaired water quality, threaten to extinguish lamprey populations at the same time as local tribes underscore their need to preserve and protect them after centuries of cherished reliance on them.

### Introduction

Pacific lamprey have been a mainstay of the diet of Northwest (and other native) peoples for centuries, but, like so much else, their lives are now endangered. Officially designated in fisheries literature as “noncharismatic,” these otherwise “ugly” snake-like, slightly slimy, faceless, primitive fishes, are understudied. While scientists increase research into these species, the bio-cultural traditional ecological knowledge (TEK) of resident tribes reminds us of their continuing and past importance to native economies and raises additional concern for their decline. After summarizing data from the Chehalis, Umatilla, and Klamath Rivers, main points of scientific research are reviewed, followed by federal management plan concerns and imminent threats from more dams and other construction projects.

Pacific Lamprey (*Lampetra tridentata*), locally called “eels” by natives and others, are vitally important to Northwest tribes such as the Chehalis, Cowlitz, Quinault, Yakama, Umatilla, Yurok, and Karuk (Fig. 1). They have been largely ignored in print and research (Smith and

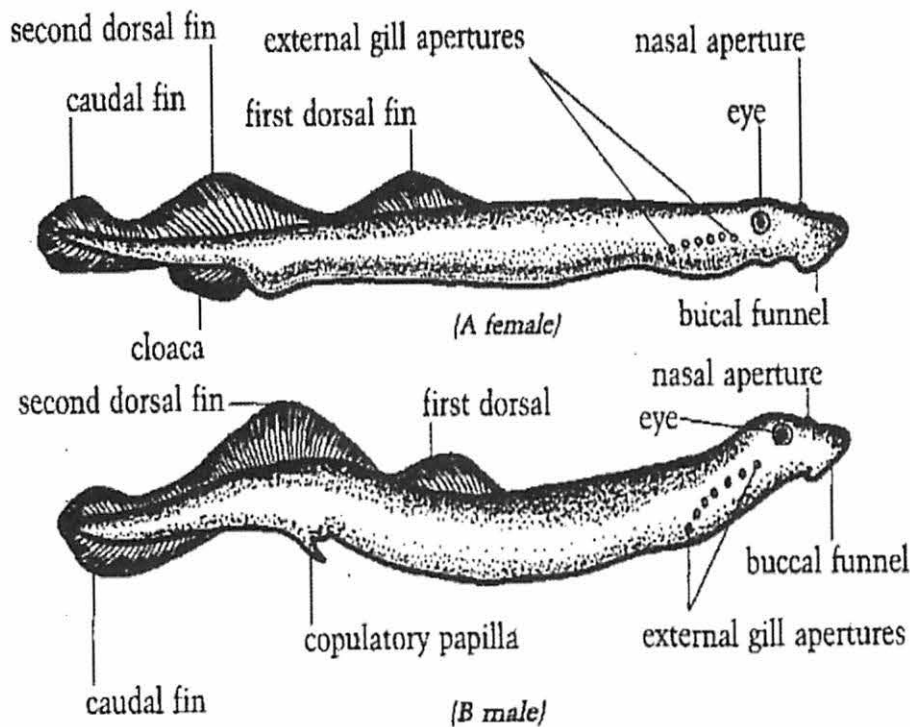


Fig. 1. Lamprey side view identifying each gender (pastiche by Jay Miller).

Butler 2008). Increasing concern is reflected in a change of its scientific names. This species is *tridentatus* “three toothed,” while the genus was *Petromyzon* and now *Lampetra*, both derived from Greek and Latin roots meaning “rock sucker,” with *Entosphenus* “inner wedge” shifting from synonym to valid genus (Clemens et. al 2010).

The Pacific lamprey live at sea and in coastal rivers on both sides of the north Pacific, from Siberia to northern Japan and from the Aleutian Islands to Baja California in Mexico. Lampreys also occur in the southern hemisphere. For example, New Zealand Maori have funnel traps and zigzag weirs for catching lampreys and eels (Best 1952:275–281). Native throughout their range, they coevolved with their host species, such as salmon, assuring that they drop off before killing their nutrient source and transport. By contrast, the recent invasion into the Great Lakes by Sea lamprey (*Petromyzon marinus*), the much-better-researched Atlantic species, illustrates the damage done by entering new habitats (Clemens et. al 2010).

Lamprey are jawless fishes (*Agnatha*) representing an ancient lineage with a fossil record dating back several hundred million years (McAllister and Kott 1988; Hardesty and Potter 1971; Brown et. al 2009). Many lamprey species, but not all, are parasites for a portion of their life cycle. Without stomachs or bones, they use suction-cup-like oral disks (buccal funnels, “mouths”) to attach onto a fish or sea mammal to feed after the tongue has filed a hole through the skin (Fig. 2). Once full, the eel drops off and the wound heals, though the whole fish is seen as damaged by the scar and can not be sold commercially for maximum profit. Typically, only a small portion of the catch is affected. But motivated by supposed lost revenue, lampreys have been poisoned and otherwise eradicated by state and private agencies serving commercial interests.



Fig. 2. Lamprey suctioning aquarium wall (photograph by Jay Miller).

## (F)EEL

To the touch, lamprey skin is most like that of a true eel or catfish, slick and slightly slimy. While most illustrations emphasize their three teeth set inside their closed mouth (bucal funnel), their oral cavity is usually open, looking like a suction cup with fleshy lips. At Rainbow Falls, on the Chehalis River in Washington, when grabbed behind the head, their long body whips around and they struggle and feel like a resisting muscular hose (Fig. 3–4). If the head touches human skin, it will latch on by suction until pulled off, leaving behind an inch-round, reddish bruise not unlike a “hickey.” Once inside a burlap sack, it will struggle for a minute or so, then remain still until suffocation in the air.

Cleaning involves impaling the upside-down head between the eyes upon a nail driven through a long board, then cutting up from a vent to open the belly, flattening out the body with skillful parallel knife cuts, especially through the short cartilaginous ribcage, removing the few internal organs (most noticeably the liver and notochord), and lastly cutting off the head behind the nail (Fig. 5). Females have egg sacks held together by fine membranes that need to be carefully removed intact. Enigmatically, lamprey are said by elders to have thirteen hearts, though only a tiny one can be seen clearly. A hooked nail is used to extract the notochord unless the eel is to be eaten or smoked immediately because, while adding flavor, it goes “rancid” very quickly. Eating “day eels” (see below for “day”/“night” distinction) without removing the notochord causes temporary white spots to break out on the eater’s face (Fig. 6). Once cleaned, the body flesh can be boiled, baked, or smoked, before eating, canning, or dry storage. Generally, a dozen or more filleted lampreys have to be ready before they are smoked together to justify the time and expense in firewood and effort, though small store-bought smokers can prepare as few as four (Fig. 7).

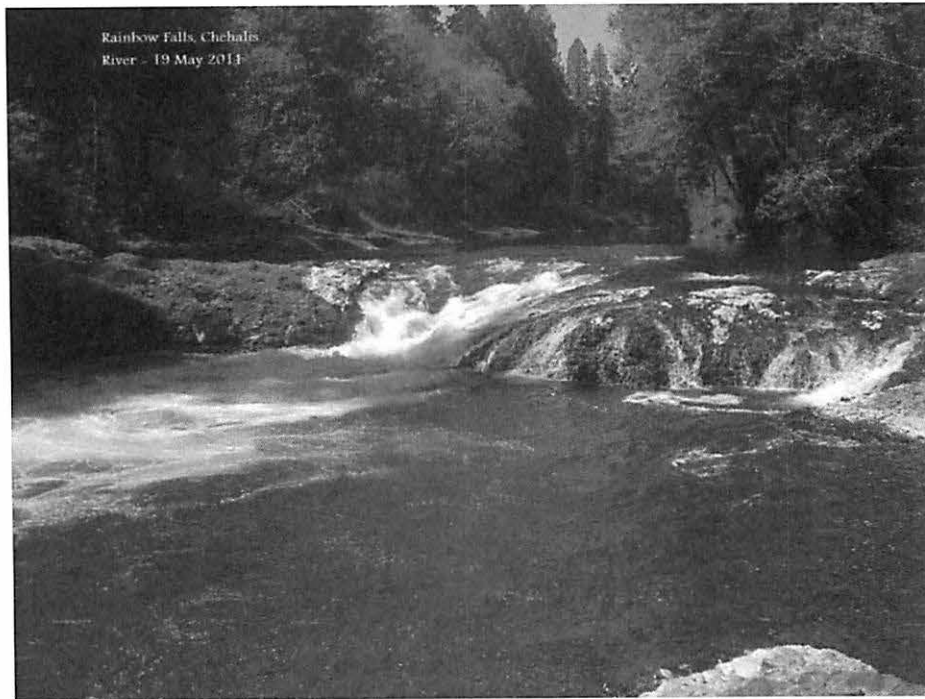


Fig. 3. Rainbow Falls, major eel fishery on the Upper Chehalis River, showing rocky outcrops providing traction for lamprey (photograph by Kurt Reidinger).

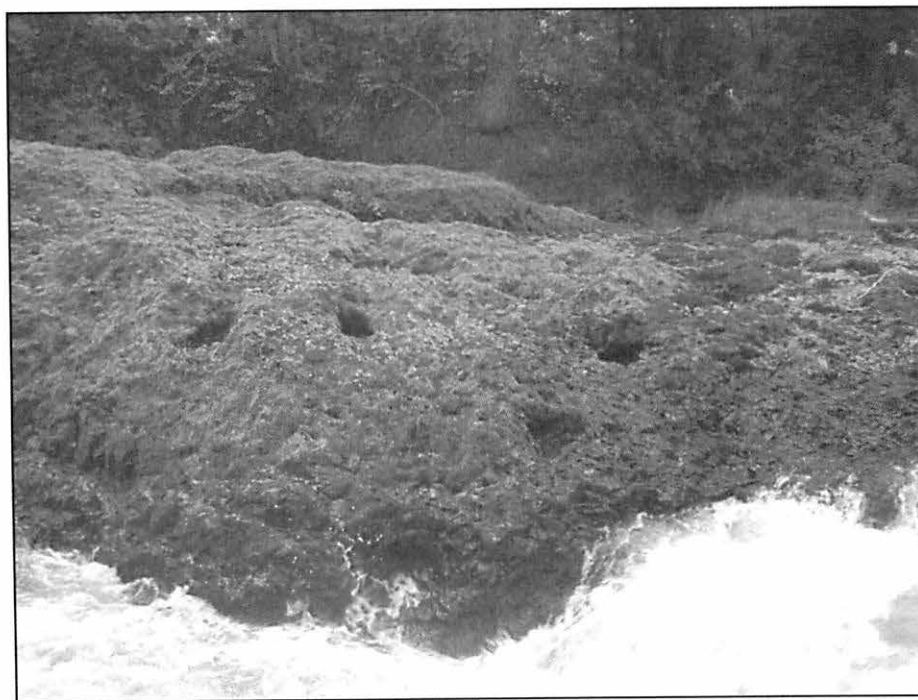


Fig. 4. Rainbow Falls, showing holes left by Changer to hold lampreys (photograph by Jay Miller).

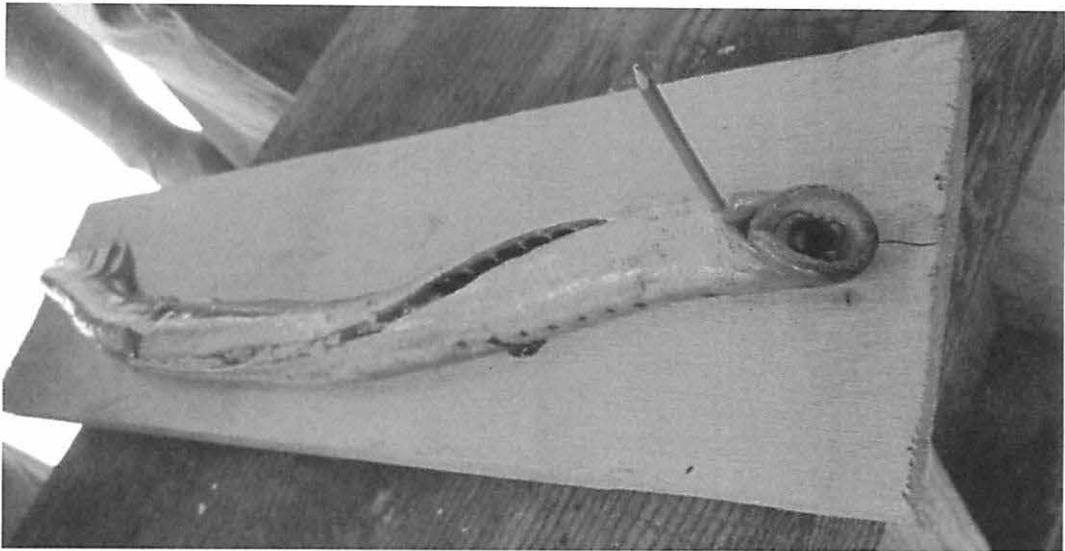


Fig. 5. Lamprey impaled on a nail, with initial incision along the underbody prior to flattening out (photograph by Jolynn Amrine Goertz).



Fig. 6. Lamprey liver, largest internal organ, followed by a tiny heart and long, thin notochord (photograph by Jolynn Amrine Goertz).



Fig. 7. Lamprey filets, cleaned, and washed; note flattened cartilage ribcage at bottom left (photograph by Jolynn Amrine Goertz).

To produce a supply of medicinal oil, cleaned lampreys are baked in a pan without any seasoning or salting at all. As they bake, the oil is poured off from a corner of the pan into a storage jar. Used as a skin ointment, ear ache remedy, and tonic, the oil has long been valued for home use and trade. It is also still used as waterproofing, but dried bodies are no longer used as candles or illumination.

While visiting Chehalis villages in 1841, the Wilkes expedition noted “Hanging around their lodges were hundreds of lamprey eels, from a foot to eighteen inches long, and about an inch in diameter. We were told that these fish are caught in great quantities, dried for food; they are also used for candles or torches; for, being very full of oil, they burn brightly” (Wilkes 1845).

In the Pacific Northwest, Pacific Lamprey pass from the ocean into the Klamath, Columbia, Umatilla, and Cowlitz Rivers, and through Grays Harbor on their way up the Chehalis River, where they are taken at certain narrow riffles associated with particular families and at Rainbow Falls, a public park where they usually swarm on the first hot day in May. Chehalis know to look for them when big carpenter ants appear, or wooly caterpillars if they are later. Umatillas mention ripened chokecherries and the “eel” ant as indicators of when lampreys should run in that river (Aaron Jackson, personal communication 2011).

## Chehalis TEK

While most Northwest native languages have only a single word for lampreys, Chehalis (Tsamosan Coast Salish) has three, as well as a fourth for an eeling platform. Two kinds of adult are distinguished: night eels and day eels. Those swimming at night, called *ʔaqʷ*, are silvery bluish, bigger, and taken at Rainbow Falls on the Chehalis River, especially while resting in two deep holes in those rocks that were left there in mythic time by Coyote (*Speelyai*) (Kinkade 1991:215, K653—hereafter K# for numbered word in this dictionary, for example, K46.1 is *ʔaqʷ saliwan* eel oil). Day eels are called *kʷup̓a*, meaning “old man”, and are brownish, and taken at riffles (K653). Today, some Chehalis “eelers” only use a gloved hand or a gaff hook to give eels a fair chance to escape (like giving a fish a chance “to spit out the hook”); others use dip nets on long handles to take dozens at a time. Chehalis has a third term for “baby eel” (*méʔawt* K1111.4 “water worms” (looks like eel)), technically called an ammocoete (Fig. 8).



Fig. 8. Chehalis lampreying in the mid-1900s by torchlight and bonfire, using detachable gaff hooks on a line, while, on the right a child points to one, and others are packed together in an openwork basket. Today, gloved or socked hands do the grabbing, and pillow cases provide containers (Chalk on velvet by Hazel Pete, Moe Family collection, photo by Jolynn Amrine Goertz).

Lampreys go through several life stages (mentioned briefly here before expanded treatment below): hatching as an ammocoete (blind larvae) that filter feeds in freshwater silt and gravel for four to seven years until it becomes a macrophthalmia (smolt with eyes and toothed mouth disk) that migrates to saltwater for a few years until it becomes a lamprey that returns to its home stream to build a redd (nest), spawn, and die. They are eyeless at the start and blind at end of their lives.

In 1927, both Franz Boas, and his student Thelma Adamson were among Chehalis collecting materials on linguistics, ethnography, and oral literature. As Peter Heck {ph} told Thelma Adamson (1927, cited as ThA after page number and the initials of the elder's name, such as {ph}), eels (lampreys) go upriver at night. Any lampreys that traveled by day were no good [cf. below, they are no longer photophobic]. They were caught below Dryad on the Chehalis at the dark of the moon using a pitch torch, mostly in April when the new leaves appeared {ph 102 ThA}. They were caught by hand, with five fern roots spread across each palm for traction, and bitten below the eyes to snap the backbone [notochord]. The use of knives was forbidden [at the riverbank]. Eels were sometime caught from a platform built across the river.

Franz Boas (1927; notebook 10:606) recorded the word for such an eel platform as kwa•xuntEn [regularized as *kʷaxʷntn* K618]. Boas (1927; notebook 1, page 1'; notebook 4:199) learned "*agʷs* = eel (he is younger brother of spring salmon)," while *kupa* are black or daytime eels, which were caught and wrapped up for good luck and medicine after being dried. (The sibblingship of day eel and spring salmon relates to a story of their taking flesh and oil from Steelhead, cf. Adamson 2009:72–74).

In 1942, Emma Lucier told J. P. Harrington (1942, reel 17, frame 0720) "where the bridge just this side (s.) of piyell [Pe Ell] it was full of Indians [unreadable word] in shovelnose canoes. They have to catch those eels at night time & put moss in hand to grasp, & the next day they have to smoke them."

Mary Iley {mi} added that eels wanted to be cooked with their head off. The cut-off heads were roasted on sticks. If you throw a head far off, it will live for a long time. If you throw it close, it dies quickly {mi 5 ThA}.

On the Chehalis River from Oakville upstream, the stick was put through the eel's mouth [bucal funnel]; maybe from around Oakville downriver, the stick was put through the neck {ph 38 ThA}. Eels were dried on sticks, up to 10 eels on each. Mary Iley's father never ate eels because they were like his [own] power. Eelers observed ritual celibacy out of respect for their prey giving up their lives (more specifically their bodies but not their souls), as was expected during other life-taking activities requiring personal sacrifice.

The verbatim wording from the notebooks of Thelma Adamson for this summary is as follows:

Eel said, "When I am cooked, leave my head off. Throw the head on the stick. If you throw it far off, it will live for a long time. If throw it close by, it will live only a short time. If they eat me well, not mash me before eating, they will live" {mi 5 ThA}.

If Taitnapam throw me up, can't [go] through head or mouth. Go [naturally through as] any excrement? No eels on the Cowlitz. Eels up in Taitnapam country in the Fall. Father said, "Do not eat eels." My aunty said, "Never mind, it is food. That is his spirit power [K93]. Just he did not eat it. It wasn't really eel, but so nearly like it that he couldn't eat it because this power was a person when he found it. One person could not eat another, so my aunty explained. It was sik'vixaiyo = snake [cf K156] {mi 5 ThA}.

Eels. From Oakville up the Chehalis River. The saqan [stick] was put from the mouth straight through the body, back to the tail. Perhaps, although this is not certain, from below Oakville, the saqan was put from his neck back through the whole body. There were at least 2 rules on the Chehalis river. Heck does not know from where the 2d one begins {ph 38-39 ThA}.

Eels. Same way with hunting salmon or for anything. Some doctors are celebrate [celibate]. Must not have intercourse.

Women had their own designs for slicing and hanging eels to make them look pretty. In August, eels were big and spotted. Eel oil was used to soften and water-proof moccasins. Today, as noted, both day and night eels are caught by gaff or net (Miller 1999).

## Cowlitz TEK

Lamprey eels once spawned in the Kalama and Lewis Rivers, and the Cowlitz River tributaries of Toutle River and Mill Creek. Boys would jump into flooded holes so the eels would boil out, experiencing the sensation of getting butted and bumped into by eels rushing to escape. From visiting Yakamas, some Cowlitz families learned to put a cotton sock over the hand to better grab eels. At the mouth of Mill Creek, near the Mayfield Dam and the Cowlitz Salmon Hatchery, the silty sands held lots of baby eels or ammocoetes.

## Yakama TEK

Sahaptin speakers use regional terms for lamprey: *asúm* (*asm*) on the Yakima River and below Rock Creek on the lower Columbia River, *ksúyas* above Rock Creek along the mid-Columbia River. Their “strength is uncanny . . . using their sucker mouths as feet.” Considered a delicacy and medicine, they are often roasted fresh over a fire on mock-orange-wood stakes, while others are smoked or air dried. “For best results the eels were cut in an aesthetic geometric pattern, then spread with cedar splints.” Yakamas also know of the advantages at Rainbow Falls, where, as trash rather than game fish, eels lack legal regulations (Hunn 1990:160–3, 315). Denied former access at Bonneville Dam, Willamette Falls became a more important eelery for the Sahaptians. Portland General Electric’s diversion of the falls flow into turbines in July benefits eeling access at this location (Barnard 2011).

## Umatilla TEK

Lampreys are culturally important to the native people of the mid-Columbia River Plateau (Close, Fitzpatrick, and Li 2002). Umatillas of eastern Oregon report for their own waterways that lampreys travel at night (Close et. al 2004). Like the Chehalis, they recognize two kinds, one that is long, bluish-grey, and nocturnal; the other is short and brownish. They prepare lampreys roasted on a stick by a fire, air dried, canned in jars, or boiled to remove oil before being baked. Preserved, they are a snack food and trade item, while the oil serves as a general tonic, medicine, rub, and drip for earache. Umatillas are alarmed by the collapse of the lamprey runs, and are particularly critical of the misuse by federal and state agencies of Rotenone, a commercial

piscicide or poison used to kill off “trash fish.” It is derived from jicama and other bean-family roots, and was long used to stun, kill, and harvest fish by natives in South America. Rotenone was used liberally because state agencies were worried that lampreys and other “trash fish” would out-compete those steelhead/salmon re-introduced by the state. Furthermore, lampreys were considered a nuisance for irrigation operations, clogging up diversion screens.

## Klamath River: Yurok and Karuk TEK

Lampreys, of six species, are believed to have once been the largest biomass in the Klamath River of northern California (Lewis 2009). Yuroks (meaning *downrivers*; current population 4,029) call Pacific lampreys *key'ween*, while the Karuk (*uprivers*, population 2,702) name them *akrash*. Lewis (2009), working closely with a staff member of the fisheries departments of the Yurok and of the Karuk, reached fourteen conclusions about Klamath River lampreys and TEK. In addition, he highlighted a few distinctive features of the Klamath, such as dying lampreys moving gravel to mound over their redd after spawning there. Attention is also called to the “popping noise” produced when suction is released by a lamprey’s mouth disk as it moves up along a hard surface. As thousands of dead lamprey rotted to return nutrients to the environment, at least one old couple would gather up bodies and boil them for oil that they used to saturate their dugout canoe to make it more waterproof (Lewis 2009: 3, 29, 31–33, 34).

Lewis’s fourteen TEK items are paraphrased as follows:

1. Two morphologically distinct lampreys were noted for the mainstem, larger bluish or smaller darker, while only the bluer one is reported for the Klamath River mouth or only the darker one upriver. This suggests the blues are entering the watershed, while the darks are ready to spawn after freshwater residence.
2. Adults respond to changing water conditions (temperature, flow rates, particulates), using a breathing hole at the top of their body in muddy conditions. They follow the leader, climbing over it to form a wedge to “leapfrog” over rocks and dams.
3. Groups follow a specific “trail” that depends on changes in the water and habitat.
4. During lightning, solar flares, lunar eclipses, and other electromagnetic activity, lampreys move deeper into the water or swarm up on to exposed rocks.
5. A normal run on the Klamath begins in late November at the mouth, at Somes Bar at the end of March, and upriver at Scott River by late July.
6. Lamprey mostly spawned in tributaries, higher up than steelhead. This is shown by the dead bodies floating down rather than actual observation of the redds or spawning.
7. Lamprey are lazy swimmers, so eeling is flow dependent and relies on specialized gear such as gaff, dip net, trigger net, platform, gloved hand, or woven basketry trap. The hand was once wrapped in fern fronds that grew to full size at this time.
8. The demise of eulachon runs that preceded the lamprey collapse is attributed to toxins from human activities, and should have given forewarning.
9. Seals and sea lions prey on lamprey unchecked, protected by the 1972 Marine Mammal Protection Act, while in prior times they too were hunted.

10. The population collapse began 40–50 years ago, impacting ammocoetes, adult, and dead lampreys. It is attributed to intensified upslope management practices, such as logging, herbicide spraying, dams, fire suppression chemicals, and wetland destruction. Acting like sponges, wetlands regulated water levels by slowly releasing or retaining water. Extreme fluctuations in water released over dams stranded ammocoetes in shallow pools, killing them.
11. Impacts from intensive logging, hydraulic mining, wetland destruction, water diversions, loss of spring freshets to clean debris and willows out of channels, and road building were further aggravated by episodic floods (in 1955, 1964), scouring away spawning and rearing habitat.
12. Fire suppression has increased forest density, retaining water in root systems that once was modulated by routine annual burning by natives.
13. Lampreys were once a huge biomass playing a significant role in the overall integrity of this ecosystem. In their early stages, they fed salmon fry, while living and dead adults fed sturgeon before these bottom fish spawned. Their dead bodies contributed marine-derived nutrients and organic matter to the nearby soils.
14. Lamprey arrival was once signaled by environmental signs, varying with location, such as dogwoods blooming, crickets singing, frogs croaking, fern frond full growth, or swallows return. Today, many of these indicators are either out of sync or gone.

In all, these TEK findings are especially helpful for understanding the distinct native names for two different kinds of Pacific lampreys. The larger bluish one has recently entered freshwater from the ocean, while the darker shorter one has been resident in the river and is preparing to spawn.

## Lamprey Evolutionary Record, Biology, and Current Research

The Columbia Basin and rivers in western Washington host at least three species: Pacific lamprey, western brook (*Lampetra richardsoni*), and river lamprey (*Lampetra ayresii*). Each full adult has two large eyes, one nostril atop the head, seven gills, and two dorsal fins. A lamprey goes through several life stages, as noted. It hatches from the egg as an ammocoete (blind larvae) living in freshwater silt and gravel for four to seven years by filter feeding. After a period of years, Pacific and river lamprey metamorphose into the macrophthalmia stage when they develop smolt-like (osmoregulation) capability, with eyes and a toothed mouth disk. Emerging from the river bed, they migrate into saltwater, and become a parasitic lamprey over a course of two to three years (Beamish 1980). The western brook lamprey, however, is non-parasitic and remains in freshwater its entire life. Once mature, ocean lampreys return to freshwater streams (May to September) to spawn, moving upriver by swimming and resting by sucking onto rocks. They are important ecological components of river systems, with larval forms becoming food for juvenile salmon, while adult lampreys are prey for marine mammals (Close, Fitzpatrick, and Li 2002; Scott and Crossman 1998). *Freshwater Fishes of Canada* (Scott and Crossman 1973) provides additional life history information in detail.

Like salmon, they do not feed during this up-migration, and die after spawning. A mated female lays 10,000 to 200,000 eggs in a shallow redd (nest) made by the pair whisking their tails and moving small rocks with their mouths. Pacific lampreys are dark bluish-grey when they arrive in freshwater, then turn reddish brown when spawning. These color changes are the basis for their Chehalis (Tsamosan Salish) names (Fig. 9).

The family of northern hemisphere lampreys (*Petromyzontidae*) includes *Petromyzon* and *Entosphenus* genera, with the former the most ancestral with a degree of mitochondrial DNA that suggests divergence at least 9–13 million years ago. Details of their biochemistry follow:

Pacific lampreys develop as endogenous-feeding embryos before spending 3–8 years as filter-feeding larvae (ammocoetes) in soft stream sediments. During the late summer and early fall, a number of exogenous and endogenous signals cue transformation of the ammocoetes into macrophthalmia with functional eyes, sharp teeth, and silver body coloration. Macrophthalmia become entrained in the water column during freshets and appear to emigrate in a passive fashion to the lake or ocean where they parasitize hosts. After 1–4 years, they cease feeding and migrate back into freshwater streams to spawn and then die. (Clemens et. al 2010:582–583, internal references removed)

[They] can reside in fresh water for as long as 2 years [probably as] a function of the larger river systems on the west coast. (same:585)

Lampreys are photophobic during their upstream migration and they migrate almost exclusively at night . . . [climbing] vertical surfaces by attaching with their oral disc, contracting the body, and then releasing [with a “pop”] and reattaching a few centimeters higher; they are thus able to ascend continuous, perfectly-vertical, wetted surfaces . . . In fact, Pacific lampreys are capable of ascending the 12 m. high Willamette Falls in . . . Oregon. (same:585–586)

[They] orient to a larval (migratory) pheromone, which leads them to streams with quality spawning and rearing habitat. The pheromone appears to work in concert with other factors, such as rheotaxis and temperature [and] a longer period of sensitivity to the major lamprey bile acids. (same:584)

Photoperiod appears to play a role in stimulating the hypothalamic-pituitary-gonadal axis during maturation and spawning. (same:586)

In males, spermatogonia proliferate and develop into primary and secondary spermatocytes, and in females, vitellogenesis [yolk forming] occurs. The final maturation processes, resulting in mature eggs and sperm, occur during the non-feeding, upstream migration. (same:588)

The hypothalamus controls reproduction through the release of gonadotropin-releasing hormone (GnRH) . . . secreted from the pituitary. Changes in levels of GnRH in the brain are correlated with season (photoperiod and temperature). There appear to be three isoforms of GnRH (GnRH-I, -II, and -III) that control sexual maturation and reproduction in lampreys. . . . Estradiol, but not testosterone, appears to be a major steroid regulating reproductive maturation and functions in both sexes of the sea lamprey and Pacific lamprey. (same:588)

. . . growing evidence [is] that all lampreys produce gonadal steroids that are different from those of other vertebrates, by possessing an additional hydroxyl group at the C15 position. Furthermore, there is evidence that 15 $\alpha$ -hydroxyprogesterone is a hormone in lampreys, and that androstenedione, a precursor to vertebrate androgens, is the main androgen. (same:589)

Spermiating male sea and Pacific lampreys attract ovulating females to nest sites with a mating pheromone that is released through the gills. The primary component of this pheromone is 3-keto-petromyzonol sulfate . . . and 3kPZS, albeit at much higher concentrations. (same:589)

During the spawning period, the lampreys are nearly blind, and the lampreys will spawn during daylight hours. Female sea and Pacific lampreys orient across the nest while the male initiates a “gliding-feeling” motion prior to attaching to the female’s head, wrapping around her, and squeezing the eggs out while fertilizing them. (same:387)

Lampreys and other primitive fishes have made important contributions in the study of endocrine system development and reproductive biology, particularly how hormones coupled with environmental cues like photoperiod and temperature serve to trigger events in the development of gonads of individual fish, leading to final maturation and spawning. The essentials of these endocrine systems are conserved in higher vertebrates, so their study in lampreys opens a doorway to understanding how they work in other animals (Clemens et. al 2010; Sower 2010).

Additional research has indicated how lampreys communicate and signal their presence using larval pheromones during their spawning migration. These inquiries are aimed at understanding the use of attractants to control lampreys invasive into the Great Lakes where they are exotic pests (Bjerselius et. al 2000).



Fig. 9. Photograph of Lamprey spawning; male begins to wrap around the feeble female to force out the eggs to be fertilized.

Pacific lamprey homing mechanisms appear to promote a high degree of population mixing (Goodman et. al 2008). Pacific salmon appear to seek the characteristics of their actual natal environment, resulting in high fidelity to their home streams. But lamprey are parricidal, attracted to larval pheromones, not the stream itself, and so may seek any suitable stream with resident ammocoetes. This attribute works against the evolution of reproductively isolated, unique populations.

Like salmon and smelt, however, lamprey populations have declined due to urban development, habitat destruction, water pollution, forestry practices, and dam blockage. Studies have recently been carried out to understand Pacific lamprey climbing behavior in order to design better fishways at dams that will aid their upstream migration (Reinhardt et. al 2008; Kemp, Tsuzaki, and Moser 2009; Moser, Ogden, Perry 2006; Moser et. al 2010, 2011).

Lampreys had commercial uses in the Pacific Northwest such as raw-ground hatchery food, vitamin oil for livestock and poultry, and scientific research into medical anticoagulants. This commercial fishery first harvested in 1941 at Willamette Falls, which has become the first Traditional Cultural Place (TCP) in Oregon because of its ongoing cultural associations with native lamprey harvest.

## Recent Federal Involvement

Federal laws and relicensing regulations are now involved in plans to safeguard lampreys. Tacoma Power was granted a new 35-year license by the Federal Energy Regulating Commission (FERC) in 2003 for their Cowlitz River projects when the emphasis was on transport of salmonids to upper watersheds without concern, however, for lamprey protection. FERC subsequently responded to recent heightened tribal concerns for lampreys. Grant County's 2008 license for the Priest Rapids project on the Columbia River requires a lamprey management plan, at the insistence of the nearby Sahaptin Wanapum community.

The Columbia Basin Fish Accords, partly consisting of three memorandums of agreement (MOA), were signed 2 May 2008. They are intended to last for ten years, promising nearly a billion dollars of federal funds to deliver specific, scientifically-valid biological benefits for the region's fish. Based on Endangered Species Act BiOps (biological opinions) by NOAA Fisheries, they respond to a rewrite order by Judge James A. Redden, U.S. District Court of Oregon, of May 2005. Federal 'action agencies' signing an MOA are the Bonneville Power Administration (BPA), U. S. Army Corps of Engineers (USACE), and Bureau of Reclamation (BR). The last two operate and maintain the Federal Columbia River Power System (FCRPS). One MOA was signed jointly by the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakama Nation. The Columbia River Inter-Tribal Fish Commission also signed this MOA. An identical MOA was signed separately by the Confederated Tribes of the Colville Indian Reservation. The tribal MOA, Section IV B 2, second bullet point, reads: "the Action Agencies' commitments under this Agreement for lamprey actions are adequate for the duration of this Agreement such that the Tribal parties will not petition to list lamprey or support third party efforts to list lamprey as threatened or endangered pursuant to the ESA".

Consistent with intent of the MOA, the three Sahaptin nations, joined by the Nez Perce in Idaho, have proposed a lamprey restoration plan where needed modifications (possible, practical, and immediate) "include the use of 24 hour video counting, installation of lamprey passage

systems, altering existing fishway structures to prevent trapping, reducing velocity barriers, reducing/eliminating juvenile impingement on screens and reducing fishway flows at night” (Nez Perce, Umatilla, Yakama, and Warm Springs Tribes 2008:2) (Fig. 10).

## Summary

Pacific lampreys, like salmon, spawn once and die; their body constituents enriching nearby soils. From eggs in redds, they transform into ammocoetes resident in freshwater, macrophthamia moving from stream to sea, and lamprey returning from salt to fresh water to spawn. As sometime parasites, they improve the health and rigor of other fish stocks, with which they coevolved, stopping short of fatal predation. As primitive fishes without bones or stomachs, lamprey evolved hundreds of millions of years ago, the Pacific species appearing about twelve million years ago.

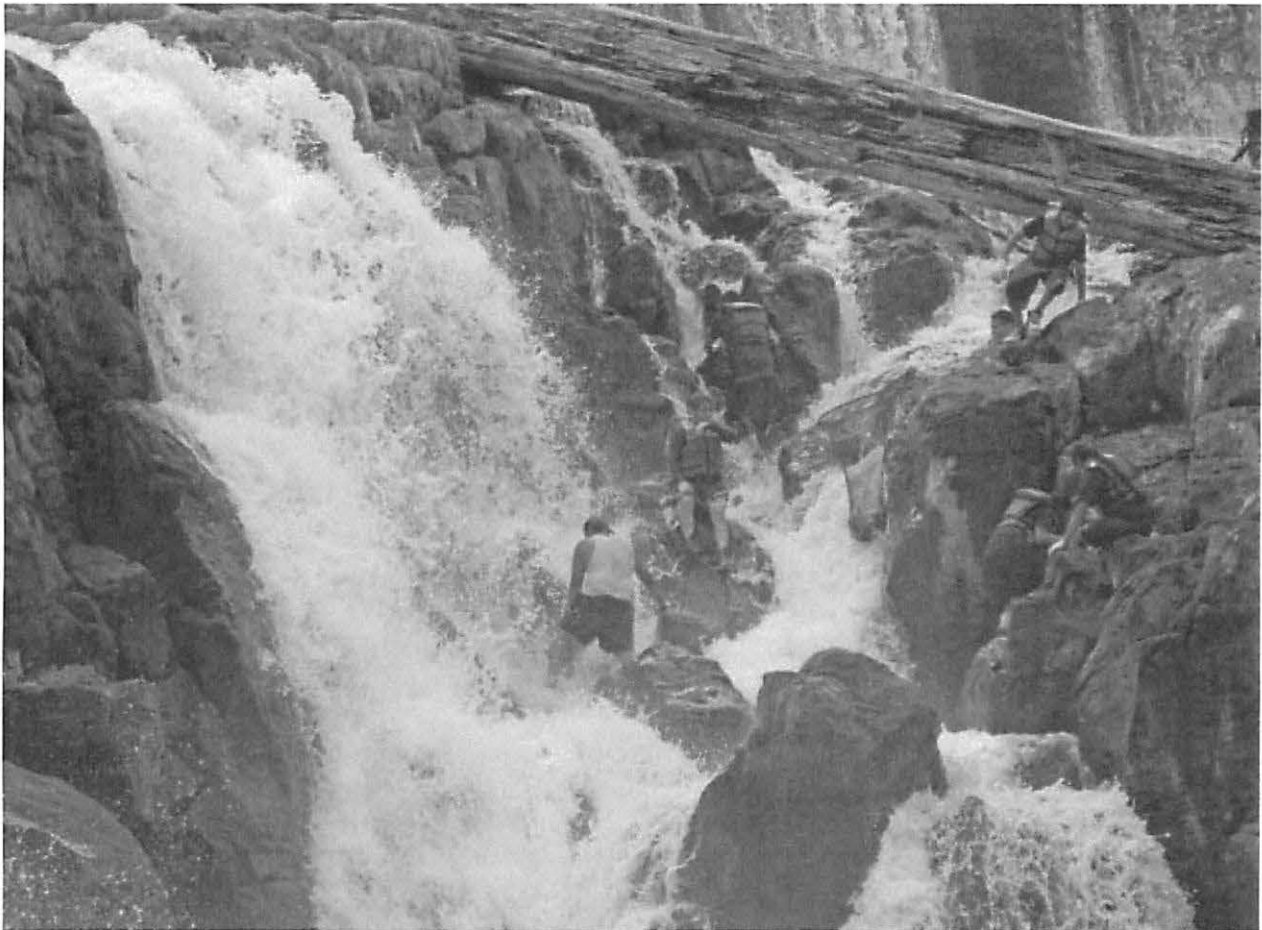


Fig. 10. Confederated Tribes of the Umatilla Indian Reservation harvesters at Willamette Falls (Associated Press story of 3 August 2011, by Jeff Barnard, widely reprinted).

Migrating lampreys are photophobic, moving upstream at night. Before spawning, their bodies produce sperm or eggs after the hypothalamus releases GnRH (gonadotropin hormones), and an estradiol steroid to achieve full maturity. Their gonadal steroids, with an added hydroxyl group, precede those of more recently evolved vertebrates. Varied pheromones help lampreys to locate suitable spawning areas and to attract a mate.

Once a huge biomass in some Pacific coast rivers, they nourished many other species, including salmon, sturgeon, and humans. Traditionally their availability was signaled by specific natural cues, ranging across plants, insects, birds, and amphibians, as listed above. Their flesh and oil provide medicine, food, lubricant, waterproofing, and trade items.

To catch them, humans devised an array of techniques and equipment, dependent on water flow, terrain, and options about giving them a fair chance. Their smooth, slimy bodies are best grasped by hands once wrapped in plant fibers or now wearing cloth gloves. Otherwise, baskets, nets, hooks, and gaffs are used. Taken by men, lampreys are processed by women for drying, cooking, smoking, and storage. Lacking stomachs, bones, or vertebrae, their bodies are sliced open to remove the few internal organs and notochord before other preparations are made.

Chehalis name two kinds, which are either returning in fresh water (silvery bluish, bigger) as spawners or departing (darker, smaller) as parasites appropriately named “old man”. Lamprey begin eyeless and end their lives often blinded, with furunculosis clouding the eyes of spawners as the male squeezes the eggs out of the female into their redd, which they then mound with gravel before dying. In life, the “popping” sound of released suction as they spring upward, and the mass of their long wiggling bodies leave lasting impressions. In death, the stench of their rotting bodies once filled the air for weeks, though their remains did provide food for other fish and lubricating oils for humans.

Decades ago, their abundance once encouraged commercial sales for raw hatchery food, livestock and poultry vitamins, and medical study of anticoagulants. The unsightly wounds they left on fish, especially salmon, that prevented best prices for the catch, led to unwise use of rotenone to eradicate them.

Now described as noncharismatic (in lieu of “ugly”), they are not listed as endangered or threatened, in large part because continued dispersal of federal funds depends on the status quo. Today, native harvesting is often done by young men with tribally-issued permits on behalf of their elders and families, who then prepare the lamprey eels for ceremonial feasts, for snack foods, and for medicines as rubs, drops, and lubricants. Instead of the thousands once prepared until the 1970s, eelers today are lucky to harvest a hundred during a run and most get a few dozen.

Efforts worldwide are underway to study lampreys, intent on raising the Pacific species in hatcheries or killing off invasive sea lamprey in the Great Lakes, even as native people lament their loss in numbers and contributions to the environment. Their own TEK of lamprey must, of course, be an integral part of this recovery effort.

Lastly, in the interest of having the lamprey have its say, of sorts, the following poem summarizes its parasitic life cycle from an Anglophone socialist perspective.

### The Socialist Lamprey

If I'm not much to look at and you dislike my way of life  
 Remember that my childhood was full of woe and strife;  
 'Cos I was squeezed out of my Mum by an ultavigorous dad  
 and dumped right on the gravel—its' all so very sad.

And if that wasn't bad enough my parents went and died  
 And left me orphaned in this stream, an insult to my pride;  
 But, when I'm a little older—some say four or five—  
 I'm going to change my colours and really come alive.

You may think I'm only kidding but inside my notochord  
 I feel these changes coming and teeth growing like a horde;  
 I'll live on social welfare and I'll suck you good and dry  
 A daily blood transfusion should keep me feeling spry.

Never mind your blood group—just let me hitch a ride  
 Roll over if you wish to—I'll latch on to either side;  
 I'm not worried by your morals or your very numerous scales  
 Board and lodgings quite enough—I've no interest in your tails!

Your pelagic upper class has had it good too long  
 Don't forget we're not just suckers for you to string along  
 And now I've made my mark and it looks as if you're dying  
 I'm off to spawn upriver, to keep the red flag flying.

Roger Lethbridge  
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## RUSSIAN AND FOREIGN MEDICAL PERSONNEL IN ALASKA (1784–1867)

Andrei V. Grinëv

### ABSTRACT

Russian and foreign medical personnel were important to the colonization of Russian America, including much of Alaska before 1867. Materials collected from a variety of sources including archival ones allow study of the dynamics of this specific social group and its contribution to life in the Russian colonies. Because of the efforts of these medics, the health of many thousands of Russians and Natives was improved and many lives were saved.

### Introduction

This theme, Russian and foreign medical personnel in Alaska, deserves serious monographic research. In part it has already been touched upon in a short article by the American scholar Robert Fortiune (1990:121–129) and the works of the Vladivostok researcher S. B. Beloglazova (Beloglazova 1998:171–188; 1999:240–252; 2007:16–24) on problems of health care in the former Russian colonies in Alaska and in California—in so-called Russian America. However, the personal aspect of medical care is touched upon in insufficient degree in their works—several doctors who worked in the Russian possessions in the New World are not named, and the names, patronymics, family names of the mentioned medical personnel are not always given correctly (for example, Volyanskii instead of Volynskii). In addition, in a table compiled by S. B. Beloglazova, designed to reflect the active staffing of the medical sphere in Russian America from the 1840s to the 1860s, the number of colonial doctors is exaggerated by two to three times (Beloglazova 1998:175; 1999:243).

Information on many medical representatives who visited or served in Russian America is rather fragmentary—frequently we do not know the family background of individual doctors, much less the details of their later fate and career after termination of service in the Russian colonies. The exceptions amount to only a few medical personnel whose biographies are known relatively well (G. H. von Langsdorff, G. S. Tiling, and a few others). Nevertheless, we will try to give a brief socio-historical sketch, where we will summarize our knowledge on this problem, using as the basic statistical informational base the encyclopedic reference dictionary *Who's Who in the History of Russian America*, published recently by Academia Publishers (Grinëv 2009). With this, it is necessary to keep in mind that, though the primary part of the medical workers is cited in the dictionary, it is far from all since the data in the historical sources are not always complete. This especially concerns the lowest medical personnel. In addition, the selection of medical personnel based on the criteria “Russian—foreign” presented certain difficulty. The fact is that some diplomat doctors were immigrants from other countries and, temporarily finding themselves in the Russian service, visited or worked in the transoceanic possessions of Russia.

Such people, in our view, can still be conveniently included in the category “Russian medical personnel,” in distinction from their colleagues who did not enter the Russian service and kept their foreign citizenship.

Through content analysis of the dictionary (Grinëv 2009), 110 medical personnel are identified who visited, lived in, or worked in the Russian colonies in Alaska (not counting foreign physicians and several medical workers of the lowest qualifications—orderlies). These people can be divided into three groups in accordance with social qualification status: 1) *diplomirovannye vrachi* [diplomat doctors] of higher category (*doktora* and *magistery meditsiny* [doctors and masters of medicine], *flotskie lekari* [navy doctors], and *shtab-lekari* [literally, “staff-doctor”; navy and army doctors of high rank]); 2) employees of middle level (*fel'dshery* [medical assistants] and *podlekari* [doctors’ assistants]); 3) medical personnel of the lowest category (*lekarskie i fel'dsherskie ucheniki* [physicians’ apprentices and medical assistants’ apprentices] and *akusherki* [midwives]). Correspondingly among the 110 medical personnel are counted 47 doctors, 38 medical assistants and physicians’ assistants, 11 medical assistants’ apprentices and physicians’ apprentices, and 14 midwives (see Tables 1–4).

Here it is necessary to make some specific terms more precise. The word *lekar'* served as the designation of an official rank or grade of diplomat doctor in the Russian Empire until 1917. The higher rank of *shtab-lekar'* that existed in the army and navy corresponded to a position of senior regimental doctor or senior doctor for several naval depots (1716–1860). The term *podlekar'* (assistant to the *lekar'*) signified the duty of a junior medic in the navy, with a *lekar'* being higher in rank and a *lekarskii uchenik* lower. In Russian America, people at times called as *podlekar'* someone, not who served in the navy, but rather someone who carried out the function of *fel'dsher*. The rank of *fel'dsher* itself on the whole was somewhat higher than the rank of *podlekar'* and denoted a non-diplomat medical worker of medium qualification (sometimes the additional categories of junior and senior, or 1st and 2nd class, *fel'dsher* were distinguished).

Knowledge of all these terms is necessary in order to document the vertical social mobility of medical personnel and their rise in social-professional status. For example, a *lekar'* might obtain the rank of *shtab-lekar'* or a *lekarskii* apprentice might become a *podlekar'* or *fel'dsher*. It is appropriate here to note that the *fel'dsher* position was the “ceiling” of a service career for a native of the colonies, since all the diplomat doctors arrived in Russian America from Russia and Europe. Along with this, medical positions in the Russian Empire before the second half of the nineteenth century were almost exclusively occupied by men, with only one profession—*akusherka* (“*povival'naya babka*”) [midwife]—available to women, though a couple of male midwives also served at different times in the Russian colonies.

## Early Expeditions to Russian America

The first medical personnel came to the shores of Alaska on board Russian ships when, on assignment by the government, the 1st and 2nd Kamchatka Expeditions led by V. I. Bering and A. I. Chirikov tried to examine the unknown lands of the New World in 1728 and 1741. Bering, on his historical voyage in 1728 through the strait that separated Asia and America, was accompanied by Navy Doctor Filipp (according to other data—Villim) Vil'gel'm [Wilhelm] Butskovskii (Butskovskoi) (*Russkie ekspeditsii* 1, 1984:69, 90). Inasmuch as Bering did not discover the shores of America (they were concealed from his view by fog) during this expedition, Empress Anna Ioannovna placed him at the head of a new, 2nd Kamchatka Expedition, which ultimately discovered Alaska and the chain of Aleutian Islands in 1741. The organization of this expedition

in 1733 included in its composition several naval medical personnel: physicians Gendrik Govi (d. 1739), the above-mentioned Filipp Butskovskoi, Yan Kashper (Kaspar) Feikh (Faige), as well as physicians' assistants Ivan Bulatov, Ivan Zverev, Ivan Stupin, Tikhon Pankov, Villis Berensen, Piter Brouner, Yan Lounrot, and physicians' apprentices Dementii Litvinov, Nikita Dudarev, Nikula Bystroi, and Arkhip Konovalov (*Russkaya Tikhookeanskaya* 1979:176). However, of these, only Konovalov took part in the voyage to the shores of America in 1741. In addition to him, Commander Bering was accompanied on his packet boat *Sv. Pëtr* by physician's assistant Matias Betkhe (or Begte—probably a Dane), and to the shores of Alaska on the packet boat *Sv. Pavel* of Captain A. I. Chirikov went the physician's assistant and surgeon Iogann Teodor (Johann Theodor) Lau (probably of German origin) (*Russkie ekspeditsii* 1, 1984:231; Steller 1995: 27–28, 161; 1998:396, 399).

The voyage of Bering and Chirikov in 1741 became the prologue for the organization of hunting expeditions from Kamchatka to the newly discovered lands in the east, rich with fur animals. Beginning in 1743 ships went to the Commander and Aleutian Islands equipped by Siberian merchants with crews of Russian promyshlenniki, who procured valuable fur and subjugated the local Aleuts, forcing them to pay yasak [tax] to the royal treasury and to provide furs for the merchant companies. However, we do not find in the archival documents any mention of medical workers, even of the lowest rank, who might have accompanied these expeditions, though the promyshlenniki sometimes spent five or more years on these trips. It is possible that the lack of qualified medical assistance contributed to a higher rate of illness and death among the crews of the merchant ships. They especially suffered from scurvy during the winter.

When the eminent Rytsk merchant G. I. Shelikhov set off in 1783 with three ships from Okhotsk to Kodiak Island, in order to found there the first permanent Russian settlement in America, he was accompanied by a sergeant from the Okhotsk port command in the duty of physician's assistant, Miron Brityukov. He became famous not so much for his successes in the field of health care as by extensive denunciation of his boss, accusing Shelikhov and his assistants of cruelty to the Kodiak Eskimos (see *Pamyatniki novoi*, 1873:373–382). After the return from Kodiak in 1786, Brityukov delivered his accusation to the head of the government expedition J. Billings in 1788, who on assignment by Ekaterina II was supposed to examine the North Pacific Ocean. Incidentally, Brityukov's course of action did not have any substantial consequence for Shelikhov and his command, inasmuch as the latter succeeded through bribery and denunciations to enlist the full support of the Siberian administration.

It was with the expedition of Billings, who visited the Aleutian Islands, Kodiak, Prince William Sound, and Chukotka in 1790–1792, that for the first time several diplomat medical personnel appeared in Russian America, which was being formed. Among them were the Italian surgeon Pëtr (Pietro) Alegretti, the native of Germany from the city of Darmstadt Karl Genrikh [Heinrich] Merk [Merck] (he served as a doctor for the Irkutsk hospital and as naturalist on the expedition), and Staff-Doctor Mikhail Robek, also evidently of German origin (*Russkie ekspeditsii* 2, 1989:268–365; *Istoriya Russkoi*, 1999(2):234–250 ff). The last, after the end of the expedition, was named chief doctor of the hospital in Petersburg, founded by Ekaterina II, (Pierce 1990:422) but most well-known nevertheless became Karl Merck, who not only acquired a great collection for zoology, botany, and ethnography (given later to Academician P. S. Pallas), but also left notes about his travels, published in English (Merck 1980; *Etnograficheskie materialy*, 1978). Concerning Alegretti, all his efforts in the struggle against the scurvy that affected the members of the expedition during the wintering over in 1791–1792 on Unalaska Island were of little success, more than twenty people died from the illness at that time (Sarychev 1952:208).

After the brief stay of the Billings Expedition in Russian America, the colonies went for more than ten years without specialist medical personnel. This often resulted in premature death for people from illness. Thus, in the winter of 1796–1797 thirteen Russian promyshlenniki and seven settlers, one woman, and two children, died from scurvy in the Russian settlement in Yakutat Bay (Arkhiv vneshnei. Op. 888. D. 121. L. 12 ob.). It was only with the organization at the beginning of the nineteenth century of relatively regular sea voyages from Kronshtadt to Alaska that doctors, who joined the crews of the ships that conducted round-the-world voyages, began to appear here periodically. The voyages were organized by the Russian-American Company (RAC), under whose aegis the government delivered management of the transoceanic possessions of Russia in 1799 and to the navy.

### Medical Personnel Assigned to Ships

The first round-the-world expedition was conducted in 1803–1806 on the sloops *Nadezhda* and *Neva* under the command of Captain-Lieutenant I. F. Kruzenshtern and Yu. F. Lisyanskii. Lisyanskii visited Russian America in 1804–1805, and in the crew of his ship, which was composed of naval seamen, were two medics: the ship's physician, doctor of medicine Morits [Moriz] Laband (Liband) and his helper, physician's assistant Aleksei Mutovkin. Their medical knowledge was especially useful in the fall of 1804, when Lisyanskii helped the governor of Russian America A. A. Baranov in a conflict with hostile Tlingit Indians, who in 1802 had destroyed the Russian fort on Sitka (Baranof) Island. During joint storming of the Indian stronghold on the western side of the island, three seamen from the *Neva* were killed, as were several Russian promyshlenniki and Kodiak Eskimos, who had been used as an auxiliary military force. In addition, all the seamen of the sloop who participated directly in the conflict (including physician's assistant Mutovkin) were wounded, as well as were Governor Baranov himself and several of his subordinates (*Rossiisko-Amerikanskaya kompaniya*, 1994:154–155; Lisyanskii 1948:52–62). In spite of the fact that the attack ended unsuccessfully, the Tlingit were forced to quickly leave their stronghold and go to the eastern part of the island. The Russians then occupied their abandoned Tlingit village near the Indian fort, after which they founded in its place the future “capital” of Russian America—Novo-Arkhangel'sk.

Besides attending to the wounded in the conflict with the Tlingit, Laband and his assistant were occupied possibly for the first time in the history of the Russian colonies with vaccination of the local residents against smallpox. At least, Laband had such intentions, which the unofficial head of the RAC, Chamberlain N. P. Rezanov, who visited Russian America in 1805–1806, reported to A. A. Baranov (*Rossiisko-Amerikanskaya kompaniya*, 1994:86). Along with him, a graduate of the University of Göttingen, doctor of medicine Georg Genrikh [Heinrich] (Grigorii Ivanovich) von Langsdorff, who at the same time occupied the duty of naturalist on the first Russian round-the-world expedition, visited the colonies. Langsdorff was struck by the poor state of the sick in Pavlov Harbor on Kodiak and at Novo-Arkhangel'sk, his personal medical talent being rendered entirely helpless in this situation: people who worked long and hard in the raw cold climate simply did not have enough fresh food (as a result of the cold and the scurvy, in the winter of 1805–1806, 17 Russian promyshlenniki and a multitude of natives died in Novo-Arkhangel'sk, in addition to as many as 60 people down sick). It was only the run of spawning herring that began in March which helped put them back on their feet and saved many lives. Later, Langsdorff described the impressions of his stay in the Russian colonies in his book, which came out in two volumes in Germany in 1812 (Langsdorf 1812).

In 1807 the sloop *Neva*, now under the command of Lieutenant L. A. Gagemeister [Hagemeister], again arrived in Russian America from Kronshtadt. On the ship was the ship's physician, a surgeon of Kronstadt navy hospital Karl Mordgorst, who stayed in the colonies until November 1808, when on instruction of Governor A. A. Baranov he set off, along with the ship's crew, to Kamchatka and Okhotsk. The next round-the-world ship, which arrived from Kronshtadt in the summer of 1810, was the naval sloop *Diana*, commanded by Lieutenant V. M. Golovnin. The ship's medical person on the *Diana* was medical assistant of 14th class Bogdan Brandt (Ivashintsov 1872:223, 228). During the stop in Novo-Arkhangel'sk in the summer of 1810 he rendered aid to several Russian promyshlenniki who had been wounded in skirmishes with Tlingit Indians during hunting in the straits of the Alexander Archipelago. One badly wounded promyshlennik was even taken on board the sloop for transport to Kamchatka, where he arrived a healthy man.

During the stay in Novo-Arkhangel'sk a remarkable conversation occurred between the commander of the sloop Golovnin and Baranov. Pointing out pictures that hung in his home, the governor explained that they had been sent by the directors of the RAC from Petersburg and, beginning to laugh with an air of importance, he added that it would have been better if they had sent physicians to the colonies, inasmuch as there was not even a physician's apprentice there. To Golovnin's puzzled question about this, Baranov answered that he did not know why the directors of the company did not want to think about medical aid to the residents of the colonies, and added that "we treat ourselves here as God grants; and whoever receives a dangerous wound or the like, which requires an operation, he will die" (Golovnin 1861:71, 88; 1961:336).

After the visit of the *Diana*, the next Russian ship from the Baltic to visit Novo-Arkhangel'sk, in 1814–1815, was the RAC ship *Suvorov* under the command of Lieutenant M. P. Lazarev. The medical person on this ship was a native of Bavaria (a regimental doctor in the Russian army since 1808), doctor of medicine Georg (Egor) Anton Sheffer [Schäffer]. After arrival in Novo-Arkhangel'sk he remained in the service with A. A. Baranov, but became well known in the history of Russian America not so much as a doctor, but as a notorious adventurer. Connected with his name is the unsuccessful attempt to establish a foothold on one of the Hawaiian Islands in 1815–1816 and even to establish a Russian protectorate over part of this tropical archipelago: Schäffer turned directly to Emperor Aleksandr I with this project (NARS. RG 261. RRAC. Roll. 1. P. 270). However, in 1817 the overly enterprising doctor was expelled by the Hawaiian king because of his excessive ambition, the intrigue of American captains, and hostile relations of the local natives toward him. On the whole, Schäffer's adventure cost the RAC the very respectable sum of approximately 200,000 rubles, not counting political and moral damage (Bolkhovitinov 1975:86–131).

Later, a substantial number of the physicians who visited the Russian colonies was made up of medical personnel who served on round-the-world ships (predominantly the naval fleet: see Tables 1 and 2). They were usually in the main port of Russian America—Novo-Arkhangel'sk—from a few weeks to several months (rarely a year or more) and then left on the return trip to the Baltic. If one counts these diplomat doctors and navy doctors, who episodically visited the colonies on board round-the-world ships or as part of a government expedition, then it appears that they amounted to no fewer than 25 persons (of 47), that is, more than 50% of the total number. Some of them made two round-the-world voyages, as for example, doctor and naturalist Ivan Ivanovich von Eshshol'ts [Johann Friedrich Gustaw von Eschscholtz]. In 1816 and 1817 he, together with Lieutenant O. E. von Kotsebu [Kotzebue], studied the North Pacific Ocean on board the brig *Ryurik*, and then again visited Russian America and California in 1824–1825 on the naval sloop *Predpriyatie* under the command of the same Kotsebu (1987).

The duty of a ship's doctor was not easy, indeed ships traveled in different climate zones, including the Tropics, and a round-the-world expedition could last from one and a half to three years. The change of climate, the heavy stress of crossing the oceans, tropical illnesses or exacerbation of chronic ailments could not be tolerated by all voyagers, while the medical personnel under the conditions of a sea passage, with the means and knowledge they had at their disposal, could not always save their patients. As a result, on the route from the Pacific Ocean to Kronshtadt in 1822 the young midshipman R. R. Gall, who served on the naval sloop *Otkrytie*, died in Rio de Janeiro. In this same year, during the sea crossing near the Cape of Good Hope, the commander of the naval sloop *Apollon*, Captain of 1st Rank I. S. Tulub'ëv, died at sea, his place being filled by Lieutenant S. P. Khrushchov, who then brought the ship to Novo-Arkhangel'sk (Ivashintsov 1872:229, 232; Khrushchov 1826:200–272). Nevertheless, death from various illnesses and unfortunate accidents on round-the-world ships was on the whole relatively low, with the exception of the tragic voyage of the RAC ship *Borodino* in 1819–1821: at that time, because of the illness that raged on board, which began after a stop in Indonesia and continued during the return voyage from Novo-Arkhangel'sk, 41 people died, the first victim of the illness being the ship's physician of 1st class Karl Karlovich Shpigel'berg [Spiegelberg] (Norchenko 1999:48–49).

In the absence of a permanent doctor in Russian America the local authorities were required to seek on their own, at times, quite exotic means of treating illnesses. Midshipman F. P. Litke [Lütke], who visited Kodiak in 1818 as part of the crew of the naval sloop *Kamchatka*, noted in his diary that the duty of doctor is usually held by some old promyshlennik. At that time this was evidently the Muscovite guild-member (craftsman) Stepan Kosylbashev, who in the 1810s occupied (“based on knowledge of sickly fits”) the office of physician's assistant in the Pavlov Harbor hospital (NARS. RRAC. Roll. 26. P. 122; Grinëv 2009:260). To Litke's question, how he treats his patients, he answered that he feeds them sublimate and smokes cinnabar; and to the question, who taught him such methods of healing, Kosylbashev referred to an order by A. A. Baranov (RGAVMF. F. 15. Op. 1. D. 8. L. 160). The Staff-Doctor Anton Grigor'evich Novitskii, who visited Kodiak with Litke, was himself required to treat the sick who had been subjected to such barbaric “treatment.” In addition, he left some quantity of medicine, explaining to the local home-grown “physicians” the method of their use (RGAVMF. F. 15. Op. 1. D. 8. L. 161). Novitskii then again visited the Russian colonies in America on the naval sloop *Apollon* in 1822–1823.

## Doctors Stationed in Russian America

More or less regular stays in Russian America by doctors began in the second decade of the nineteenth century. In July 1817 the ship *Suvorov* arrived in Novo-Arkhangel'sk, on which was the ship's surgeon of 10th class Vasilii [Wilhelm] Fëdorovich Bervi. He worked there until November 1818, then departed the colonies for Petersburg on the RAC ship *Kutuzov*. The Navy Doctor Pavel Alekseevich Volkov set off from Okhotsk to Russian America to replace him in July 1820 on the company galliot *Rumyantsev*. This was the first doctor specially sent for service in the colonies (Khlebnikov 1985:179). However, because of illness he was not able to continue service in Alaska. Soon, in October 1821, he was replaced by Doctor Bervi who again visited Novo-Arkhangel'sk on the ship *Kutuzov* (NARS. RRAC. Roll. 27. P. 283 об.). Volkov departed on this same ship to Kronshtadt in January 1822, while Bervi remained in the capital of the Russian possessions as the colonial doctor. In the words of the local leadership, in 1822 “the hospital and apothecary in Novo-Arkhangel'sk were given the possibility in a better position by

the effort and care of Mr. Bervi" (*Rossiisko-Amerikanskaya kompaniya*, 2005:129). He worked in the colonies until May 1823, but because of illness was required to leave his post and go to Russia on the RAC schooner *Chirikov*.

In 1825 Doctor Simon Nikolaevich Benëvskii arrived in the colonies to replace Bervi. Benëvskii had entered the service of the RAC in March 1825 from Vilenskii University (in Vilnius, Lithuania). He was brought to Novo-Arkhangel'sk from Okhotsk in September 1825 on the RAC brig *Volga* and served in the colonies about two and a half years, but it turned out negative: he displayed clear signs of psychological illness—in particular, he announced in May 1828 that the sugar in Novo-Arkhangel'sk was poison, and the like (Arndt 2010). As a result of conflict with the colonial leadership, Benëvskii was sent out to Okhotsk on the brig *Baikal* even before the end of his contract with the RAC. The governor, Captain of 2nd Rank P. E. Chistyakov, requested that the directors of the company send new medical personnel to the colonies, whom he expected to work in all the primary districts of the colonies. His wish was dictated by practical consideration: care for the basic work force—the dependant natives and Russian promyshlenniki. He wrote in his dispatch to Petersburg in 1828: "I know very well that by sending such number of health officials the expenses of the Company will increase, but they will be rewarded later by the very principle capital of the company—the preservation of the Aleuts, and, in my opinion, it is even impossible to put off the establishment of real hospitals in the districts, especially in relation to the Russians. . . ." (*Rossiisko-Amerikanskaya kompaniya*, 2005:219).

The directors of the RAC on the whole agreed with the wishes of Chistyakov and in 1830 sent two diplomate doctors to the colonies: physician of the 9th Naval Depot Grigorii Vasil'evich Mayer (Meyer) and doctor of medicine and midwife (in the rank of medical assistant), Prussian citizen Georg (Egor) Simon. The latter, like Benëvskii, displayed himself far from the best way in the colonies. He worked as a druggist for some time in Novo-Arkhangel'sk and then on Kodiak Island. Captain of 1st Rank F. P. von Wrangell, who replaced Chistyakov at the post of governor, reported to the RAC Board of Directors in Petersburg, that Doctor Simon was not able to carry out his obligations because of extremely poor knowledge of medicine and foolish character, "so that from using him not only do the sick not have relief, but they feel even more harm." Therefore, Wrangell dismissed "this harmful person" from duty and in 1833 sent him to Okhotsk on the brig *Polifem* (NARS. RRAC. Roll. 8. P. 295; Roll.34. P.191, 409).

Fortunately, a competent specialist, G. V. Mayer, was left in the colonies. In 1831 he obtained news of promotion to staff-doctor for many years of service and a medal for participation in the Russian-Turkish War of 1828–1829. In the summer of 1832 Mr. Mayer, chief doctor in the colonies, visited the villages of the Kodiak District to give medical aid in curing venereal diseases, and in October he set off to the California RAC enclave—Fort Ross. In spite of his own severe ailment, he served in Russian America the whole contract period until October 1835, after which he went to Russia, but en route died in London (Khlebnikov 1979:247; Grinëv 2009:391, 491; Pierce 1990:351, 470).

In 1835, the military doctor (physician) of the 12th Naval Depot, Eduard Leont'evich Blashke [Blaschke], arrived in Novo-Arkhangel'sk from Okhotsk on the RAC ship *Sitkha*. His intense medical practice began in November of the same year, when a severe epidemic of smallpox began in the territory of Russian America. Later, in an essay about his stay in the islands of the Unalaska District of the Russian colonies, Blashke reported that, among the natives dependent and semi-dependent on the RAC, about 3,000 people perished from smallpox, not counting representatives of independent tribes, "before vaccination for cowpox was introduced." The doctor explained such large losses by several factors: difficulty of delivery of vaccine to the distant districts and villages of the colonies, and special aversion of the natives to inoculations (which the shamans suggested was Russian witchcraft for killing their kinsmen). "Fortunately,"

wrote Blashke, “the pox I took from Europe and Siberia was suitable, and a multitude of victims was saved by it” (Blashke 1848:116). With rare warmth he described the Aleuts, to whom he gave the vaccine for smallpox: in 1838 he was able to vaccinate 1,080 people (130 nevertheless died from the illness). In 1839 Blashke visited the Atka District of the Russian colonies and in the same year he obtained the rank of staff-doctor for merit in practical medicine (NARS. RRAC. Roll. 43. P. 190, 323–323 oб.). The epidemic of smallpox, though dying out, continued until 1840, when in September Blashke left the capital of the Russian colonies. In 1842 in Petersburg he published in Latin his book *The Medicinal Topography of the Novo-Arkhangelsk Port*, in which, besides medical problems, he gave a brief description of nature and the population of Sitka (Baranof) Island (Blashke 1842).

Almost simultaneously with Blashke, a native of the Chernigov Province (city of Nezhin), physician of the 9th Naval Depot Nikolai Pavlovich Volynskii, worked in Russian America. He arrived in Novo-Arkhangelsk on the RAC ship *Elena* in April 1836, but did not remain there long, inasmuch as in August he had already been sent to Kodiak Island to combat the smallpox epidemic: the illness raged with special force on this island and in its vicinity. In 1837 Dr. Volynskii was conferred the rank of staff-doctor, and after two years, in 1840, he left the colonies and set off to Russia (NARS. RRAC. Roll. 43. P. 110 oб., 165 oб.; *Rossiisko-Amerikanskaya kompaniya*, 2005:356).

In this same year another emigrant from Little Russia (though from the Kiev Province) arrived from Petersburg to replace him—Doctor Aleksandr Danilovich Romanovskii. He worked in Russian America until 1845 and left the colonies on the RAC ship *Naslednik Aleksandr* to Ayan, and from there he set off to Moscow. Later he served as a junior inspector at Moscow University from 1846 to 1863, having published several articles about medical practice in Russian America on the pages of various Russian journals (Pierce 1990:425).

If the colonial leadership did not especially favor Romanovskii for his sometimes scandalous conduct, then the relationship with another doctor—a native of Vyborg, doctor of medicine from Dorpat (Tartu) University, Aleksandr Fëdorovich Frankengeizer [Alexander Friedrich Frankenhäuser]—was very different. Arriving in Russian America in 1841, the year after Romanovskii, he served in the colonies longer than other diplomate medical specialists—more than 10 years. In 1845 he married El’za Oman (Elisa Adolphina Wilhelmina Öhmann)—daughter of Anna Margarita Oman, housekeeper for the family of Governor A. K. Etolin. Several children were born in Russian America to the couple. When the epidemic of measles began in 1848 in Novo-Arkhangelsk (487 people survived the illness, 57 died) Frankengeizer took a most active part in stopping the illness. The efforts of the doctor were highly valued by the local leadership, which noted that he “in this uneasy time stayed in Port alone and at the same time was himself the most unhealthy” (NARS. RRAC. Roll. 55. P. 120). For success in the medical field Frankengeizer was promoted to Collegiate Assessor in 1850, and in November 1852 he set off from Novo-Arkhangelsk with his family on the RAC’s Finnish freighter *Atkha*. Later he lived and worked in his native Vyborg (Pierce 1990:145–146).

From 1845 the Navy Doctor Ivan Borisovich Ivanitskii, who arrived there from Okhotsk on the RAC ship *Naslednik Aleksandr*, served along with Frankengeizer in the colonies. In 1846 he obtained the rank of staff-doctor and in this same year was promoted to Collegiate Assessor. In 1847 the colonial leadership sent him on a medical inspection to the Kodiak District to render medical aid to the local Eskimos and Indians. In 1848, during a measles epidemic, Ivanitskii found himself on Unga Island, where the illness took the lives of 40 people (NARS. RRAC. Roll. 52. P. 191 oб., 368; Roll. 55. P. 120 oб.; *Rossiisko-Amerikanskaya kompaniya*, 2010:158, 165). He left Novo-Arkhangelsk to Russia in November 1850 on the ship *Atkha*, and to replace him the doctor and Titular Counselor Zinovii Stepanovich Govorlivyi with his spouse set off in this same

year from Kronshtadt on the RAC ship *Nikolai I*. Having worked quite successfully in Russian America until 1859, he left Novo-Arkhangel'sk in the spring of that year accompanied by his wife and daughter. For his activities in the colonies Govorlivyi, upon recommendation of the RAC Board of Directors, was awarded by the Tsar the Order of St. Stanislaus 3rd degree in 1861, and from 1862 he worked as a supernumerary doctor for the Petersburg police. In the capital Govorlivyi published about ten articles in periodicals, primarily connected with descriptions of illnesses among the population of Russian America (see Gorolivyi 1861:1–24).

Simultaneously with Govorlivyi, the doctor of medicine Gustav Aristovich Beze, also left the colonies in 1859. He had arrived there in 1853, at which time he was sent to Kodiak to combat the measles epidemic. It was owing to his efforts that the illness there did not have substantial consequences (only three people died). In 1857 an epidemic of typhoid fever flared up in Novo-Arkhangel'sk, and Beze, together with his colleague Z. S. Govorlivyi, did all possible for the prevention of a high mortality (of 321 sick, 13 died; whereas among the Tlingit Indians who lived nearby there were many who died). Just like Govorlivyi, Beze received the Order of St. Stanislaus 3rd degree in 1861 upon recommendation of the RAC Board of Directors for conscientious service in the colonies and was conferred the title of Collegiate Assessor. These doctors were replaced by a junior doctor of the 28th Naval Depot, doctor of medicine Fëdor (Friedrich) Ivanovich Berendt, who was sent to the American possessions of the empire in 1857 as a ship's doctor on the RAC clipper *Kamchatka*. In 1860 he was sent by the colonial leadership to survey the Kodiak District in medical regard. In this same year Berendt was conferred the rank of Collegiate Assessor, and in April 1862 he was awarded the Order of St. Stanislaus 3rd degree "for outstandingly zealous and useful service" (Report of the RAC, 1854:13–14; 1858:16–17; 1861:34–35, 91; 1865:14). Berendt left the colonies in May 1864 on the steam corvette *Bogatyř*.

In 1860 the senior doctor of the 16th Naval Depot, Ivan Kasparovich Markovskii, arrived in the colonies from Kronshtadt on the RAC clipper *Tsesarevich*. In the same year he received the title of Court Counselor, and after two years he had earned the Order of St. Stanislaus 3rd degree with the standard formulation "for outstandingly zealous and useful service." In 1861, by order of the governor, Captain of 1st Rank I. V Furugel'm, Doctor I. K. Markovskii visited the Kodiak and Northern Districts of the colonies for treatment of the sick, as well as for medical prophylaxis. He found the situation there entirely satisfactory from the medical point of view, the drug supplies were kept in satisfactory order, and everywhere vaccination against smallpox was being carried out (with the exception of the Ikogmiut Eskimos) (NARS. RRAC. Roll. 22. Pp. 542–542 o6.; Report of the RAC, 1862:14–15). In summer 1862 the governor sent Markovskii, accompanied by medical assistant Larionov, on the steamer *Aleksandr I* into the straits of the Alexander Archipelago to aid the Tlingit Indians during a new epidemic of smallpox, which fortunately, did not have serious consequences (NARS. RRAC. Roll. 64. P. 91). In the following year he was ordered to the Kodiak District to combat an epidemic of influenza, which managed to kill 200 local natives before autumn (NARS. RRAC. Roll. 25. P. 72 o6.). Markovskii left the colonies to Russia in November 1866, that is, almost a year before the sale of Alaska to the United States.

The last colonial doctor arrived for permanent service in Russian America in 1864 to replace Doctor Berendt. This was the Livonian native Genrikh Sil'vestr [Heinrich Sylvester] Tiling, who before this, in 1846–1851, had served as the RAC port doctor in Ayan. He arrived in the colonies with his wife and young daughter. There Tiling worked as chief doctor until the sale of Alaska to the United States in 1867, when he moved to reside in San Francisco (Enckell 1998:2–20). Based on the testimony of RAC bookkeeper M. I. Vavilov, Doctor Tiling occupied himself with, besides medicine, botany, mineralogy, and other natural sciences, "but, . . . unfortunately, he worshiped Bacchus (the Roman god of wine and intoxication) and professed to him alone. This circumstance made him sometimes strange" (Vavilov 1886:611–612). Once,

being obviously drunk, he shot a bull that belonged to the company, which had unfortunately wandered into his front garden in front of the hospital. Nevertheless, Vavilov noted, Tiling was considered a fine person and good doctor in Novo-Arkhangelsk.

In spite of the presence of diplomat doctors in Novo-Arkhangelsk, they were not always able to provide qualified medical aid to their patients. The spouse of Governor I. V. Furugel'm—Anna Furugel'm, who suffered from tooth ache—responded very skeptically to colonial doctors (especially about Berendt), and was forced in January 1862 to go for medical treatment of her teeth to San Francisco, where there were professional dentists (*Letters*, 2005:122, 225–226, 231). Nevertheless, the presence of medical specialists in the colonies helped, for example, to noticeably lower mortality in Novo-Arkhangelsk in the first half of the 1830s (Beloglazova 2007:21). Foreign mariners and even independent and hostile Tlingit Indians came for the services of colonial doctors. For example, in May 1829 an aide of Captain Charles Taylor from the trading ship *Volunteer*, wounded in a conflict with the Haida Indians, appeared for treatment at the hospital in Novo-Arkhangelsk (NARS. RRAC. Roll. 31. P. 393). And in 1861, after an intratribal clash between Tlingit clans at the walls of Novo-Arkhangelsk, several injured Indians turned for aid to the Russian doctor, and not to their shamans (Golovin 1863:290). Z. S. Govorlivyi wrote in his time about the effectiveness of medical aid: “All those sick, helped by me in the Novo-Arkhangelsk hospital, 8,637; 121 of them died, that is, the average number of 15 people per year—the result is reassuring, if one understands that at this time we had 5 epidemics” (Govorlivyi 1861:24). The special expertise of Doctor I. K. Markovskii's medical report, produced in 1863 by Surgeon in Ordinary and Privy Councilor D. K. Tarasov at the request of the RAC Board of Directors, revealed the correctness of all the medical measures undertaken by the doctors of the colonies. As a result of this examination, Markovskii and his colleague Doctor Berendt earned the gratitude of the directors of the company (*Rossiisko-Amerikanskaya kompaniya*, 2010:377–378).

## Medical Assistants and Physician's Assistants in Russian America

Besides diplomate doctors, specialists of medium qualifications—medical assistants and physician's assistants—also worked in the Russian possessions in the New World, part of whom came from the metropolis. Some of them served in Novo-Arkhangelsk, others—in the hospital in Pavlov Harbor on Kodiak, and sometimes in other settlements in the vast colonial territory as well. The senior medical assistant Ivan Kotel'nikov worked at the hospital in Novo-Arkhangelsk in the 1820s until his death in 1828. Simultaneously with him worked senior medical assistant 1st class of the Novo-Arkhangelsk hospital, Naum Ignat'evich Ermolaev, who appeared in the service of the RAC on 1 May 1821 from the Kronshtadt Public Women's Hospital. In October 1825 he left for Kronshtadt on the RAC ship *Elena*, but then he signed a new contract with the company and again set off for the colonies through Okhotsk in winter 1827, together with his wife—midwife Ol'ga Vasil'evna.

Ermolaev arrived in Russian America on the brig *Okhotsk* in 1828 and worked primarily on Kodiak Island and in Novo-Arkhangelsk; in the course of service he obtained the rank of 14th class. In spring 1834, Ermolaev left the colonies with his family on the ship *Sitkha* (*Rossiisko-Amerikanskaya kompaniya*, 2005:228–229). In 1835 the RAC Board of Directors hired in his place medical assistant of the 1st Freight Depot, Semën Faddeevich Grobov, who was granted leave from the Navy Department and whose wife agreed to become a midwife in the colonies. Incidentally, Grobov worked in Russian America only briefly, dying in Novo-Arkhangelsk in 1837.

Even before the departure of Ermolaev and the arrival of Grobov, two more medical assistants arrived for service in the colonies in 1831–1832: Vasilii Kalugin and Daniil Zykov. The first of them worked for some time in Novo-Arkhangel'sk, where in November 1832 he underwent strict disciplinary punishment for delinquency and reprehensible behavior. Soon the colonial leadership sent Kalugin to the California settlement of Fort Ross, and then transferred him to duty of senior medical assistant on Unalaska Island (1835). In 1836 he was ordered from there to the Kodiak District, where he battled against the smallpox epidemic in 1836–1838. In 1837 senior medical assistant Kalugin was again attached to the Novo-Arkhangel'sk hospital, and in 1840, for long service, was promoted to public official of 14th class. That year he left the colonies (NARS. RRAC. Roll. 43. P. 190 о6.; Grinëv 2009:209).

In distinction from Kalugin, Zykov completely connected his life with Russian America. Before going into the service of the RAC he worked at the Petersburg Maritime Hospital as a senior medical assistant and non-commissioned officer of the 4th Freight Depot. After entering the colonies, Zykov earned the good will of the colonial leadership (“for good behavior, zealously”) (NARS. RRAC. Roll. 37. P. 175 о6.) and in 1836 was promoted to health official of 14th class. In Russian America he worked from 1832 as senior medical assistant on Kodiak Island, then was transferred to Novo-Arkhangel'sk in 1834, and later again to Kodiak in 1840, where he served until his death at the beginning of 1862. In the colonies Zykov married the daughter of the priest Lyubov Sokolova in 1831 and had several children with her (Grinëv 2009:188).

Two more medical assistants worked in Russian America in the 1840s. Before 1845 Ivan Matveev, who in 1850, at that time in the rank of physician's assistant of 14th class, was again sent from Kronshtadt to the Russian colonies on the RAC ship *Imperator Nikolai I* (NARS. RRAC. Roll. 18. P. 700), and after 1846—pharmacist of the Irkutsk public ward, Dominik Tranchuk. The latter emerged in the duty of druggist and medical assistant in the Novo-Arkhangel'sk hospital, and from 1847 simultaneously served until 1850 as custodian of the consumable goods store (warehouse) in place of the steward, who had become ill, and in 1851 was mentioned in documents as an instructor in the Sitka Spiritual Seminary. Tranchuk left for Russia on the ship *Nikolai I* in November 1851 with an outstanding certification and in May 1852 arrived in Kronshtadt (NARS. RRAC. Roll. 51. P. 329-330, Roll. 52. P. 407 о6.; Roll. 57. P. 560 о6.).

In the 1850s–1860s at the hospital in Pavlov Harbor on Kodiak worked health official of 14th class Mikhail Petrov: he died there the year the colonies were sold to the United States in 1867. In addition, in 1859 the apothecary's assistant E. A. Nibur was sent to Russian America on the freighter *Johann Kepler*; he did not show his best side inasmuch as he was “devoted to drunkenness,” for which he was dismissed from service and sent out to Russia on the RAC ship *Tsaritsa* in 1861 (NARS. RRAC. Roll. 22. P. 472; Roll. 23. P. 377). In order to replenish medical personnel “of middle range” in 1860, the senior medical assistant Galaktion Larionov was sent from Kronshtadt into service in Russian America on the clipper *Kamchatka*. He worked in the colonies from 1861, but was sent to Kronshtadt on the same ship in November 1866 for drunken behavior and a lack of effort in service. In addition to him, the junior medical assistants Grigorii Nikitin and Osip Petrov arrived in Novo-Arkhangel'sk in 1863 (the latter worked in the hospital on Kodiak until 1867), as well as senior medical assistant Joseph Gering (NARS. RRAC. Roll. 24. P. 152 о6.), who treated the sick in Novo-Arkhangel'sk until transfer of the colonies to the United States.

Besides medical assistants being sent from Russia, the administration of the RAC tried to recruit junior and medium medical personnel from among the local population. On the one hand, the company reduced its expenses in the medical sphere, and on the other, contributed to the development of public health service and specialized education among those born in the colonies. For this the RAC sent their Creole foster children, that is, children born of the marriage or

connections of Europeans and the local natives, to be trained by experienced medical assistants and doctors who had come from the home country. By the second half of the 1820s four Creole boys worked with a colonial doctor and were being trained in general medicine, anatomy, and surgery (Khlebnikov 1985:179). In the process of education the Creoles became physicians' apprentices, and some with time received the duty of medical assistant and physician's assistants. Of the 30 medical assistants who permanently worked in the colonies at various times (not counting I. Viller), 13 people (43%) or almost half were Creoles. They practically made up the lower medical personnel—medical assistants' apprentices and physicians' apprentices (see Tables 2 and 3).

Based on the characterization of Doctor Z. S. Govorlivyi, the Creoles possessed amazing capabilities in pharmacology and surgery, but were poor in abstract thought. Among other things, they were quite inclined toward immoderate use of spirituous drink and therefore, in Govorlivyi's opinion, to leave even a good Creole medical assistant in charge of a hospital would be an unpardonable mistake (Govorlivyi 1861:23). Nevertheless, some Creoles worked conscientiously in the medical field for decades. Among them can be named Ivan Konstantinovich Galaktionov, who served from the 1820s to 1847 as a pharmacist's apprentice in Novo-Arkhangel'sk and in the Atka District of the colonies; medical assistant Aleksei Grigor'evich Zenzin, who worked from the beginning of the 1830s to the beginning of the 1860s in the hospitals of Novo-Arkhangel'sk and Pavlov Harbor on Kodiak; Platon Khristoforovich Benzeman, who in the 1850s managed a small clinic at the curative hot springs south of Novo-Arkhangel'sk, as well as other Creole medics.

Along with them, female Creoles made up almost half of all midwives and midwives' apprentices who worked in the colonies (Table 4), though initially "povival'nye babki" [midwives] were Russian women—the wives of medical assistants Ermolaev and Grobov. The first of them began obstetrical activity in the colonies in 1828 and continued until her departure in 1834. In 1836 Maria Petrovna Grobova arrived to replace her. Maria Petrovna worked as a midwife until May 1841, when she left for Okhotsk. The professional midwife Domna Andreevna Andreeva began practice in Novo-Arkhangel'sk a year before her departure and continued it until 1845, after which she left the colonies for Petersburg (Grin'ev 2009:28, 141, 171).

It was in the 1840s that the colonial leadership moved to increase the number of "povival'nye babki," which was probably connected with an attempt to decrease infant mortality and thereby to increase the population of the colonies to compensate for the loss from the catastrophic epidemic of smallpox in the second half of the 1830s. As a result, in the 1840s the Creole midwife Maria Kalistratovna Gedeonova began to work in Novo-Arkhangel'sk; in the Kodiak District—the Eskimo woman Dar'ya Uchilishcheva (Chayudak); in the Atka District—the Creole woman Akulina Moskvitinova. At the same time, the Creole woman Fedos'ya Vasil'evna Rezantseva, who went to Petersburg along with Domna Andreeva, attended special midwife courses and after finishing them returned to the colonies in 1853 (NARS. RRAC. Roll. 20. P. 687), where she replaced the Creole woman Anna Alfeevna Kostromitinova (Milovidova) in Novo-Arkhangel'sk. Incidentally, after the death of her husband as a result of an unfortunate accident in November 1859, the latter again began to work as a midwife with a salary from the RAC of 900 rubles in banknotes [as opposed to silver—*Trans.*] per year. At the same time, two more midwives, probably Creole women, are mentioned in the documents of the company: Ekaterina Terent'eva in Novo-Arkhangel'sk and Anna Artamonova on Kodiak. In 1861 a midwife from Finland, Khristina (Kristina) Ivanovna Miller (NARS. RRAC. Roll. 23. P. 200), arrived in the colonies and worked in Novo-Arkhangel'sk until May 1866.

Concerning the lowest category of medical personnel—orderlies—the information about them is extremely scant in the RAC documents. It can be supposed that the overwhelming part of them were simple "workers" of the company who, because of poor health or advanced age, were

assigned to be employees in the hospitals and clinics of Novo-Arkhangel'sk and Pavlov Harbor. The Creole Nikolai Petrovich Granskii was initially a seaman on RAC ships at the beginning of the 1810s and then was listed at the Novo-Arkhangel'sk hospital in 1818. Another Creole—Mikhail Ivanovich Petelin—employed by the RAC from 1859, worked at the hospital in Pavlov Harbor on Kodiak Island at the beginning of the 1860s. For several years, from 1830 until his death in 1836, the baptized Siamese (Thai) Nikifor Frolov worked as a “hospital orderly” in the Novo-Arkhangel'sk clinic (NARS. RRAC. Roll. 26. P. 45, 127; Roll. 32. P. 349).

## Foreign Medical Personnel

There were also foreign medical personnel in Russian America. For example, governor of the British Hudson's Bay Company Sir George Simpson during a round-the-world trip from London through Canada, Alaska, and Siberia in 1841–1842 (Simpson 1847) was accompanied by the doctor Alexander Rowand. Almost a decade later a British sergeant of the maritime service, the ship's doctor, naturalist, and sketch artist Edward Adams, set off in January 1850 in search of the lost Arctic expedition of John Franklin in the region of Bering Strait on board the naval sloop *Enterprise*. In October of the same year he and Lieutenant J. Bernard were left in the RAC's Mikhailovskii Redoubt in Norton Sound, while the sloop went to winter over in China. Bernard then set off to the RAC outpost of Nulato, where he died during an attack of the Koyukon Indians in February 1851. In June 1851 Adams went back aboard the ship and then arrived in England (*Rossiisko-Amerikanskaya kompaniya*, 2010:212–213; Pierce 1990:1).

## Ethnic Composition of Medical Personnel

Returning to the ethnic composition of the medical personnel of the Russian colonies, one can note that it was rather varied. A substantial part of the diplomate medical personnel, both in Russia itself and in the composition of the medics of the expeditions organized by the government that were sent to the colonies (including those organized by the navy), contained doctors of German origin (both natives of Germany and Russian Germans). R. Fortune noticed this circumstance, pointing out the strong influence of German medicine on the development of the Russian medical system (Fortune 1990:127). Based on our calculations, among the ships' doctors of 26 round-the-world expeditions carried out between 1803 and 1841 from Kronshtadt to the Russian colonies, there were twice as many German medical personnel as Russian (Grin'ev 2004:193; Ivashintsov 1872:221–245). And of the 15 doctors of high qualification who served directly in the colonies from the end of the 1810s, it is calculated more than half of them—8 individuals—were German. Here at different times worked four doctors who can relatively reliably be designated “Little Russians,” that is, natives of the modern Ukraine (N. P. Volynskii, A. D. Romanovskii, I. B. Ivanitskii, and Z. S. Govorlivyi). In addition, the Polish doctors I. K. Markovskii and S. N. Ben'evskii (he was probably a Polish Jew) served in the colonies, as well as a total of one Russian doctor—P. A. Volkov. Among the middle and lower medical personnel, as already mentioned, the Creoles made up almost half of the medical assistants, while the remainder were Russians with the exception of D. I. Tranchuk (a Pole) and I. Gering (a German). Physicians' apprentices and medical assistants' apprentices were almost exclusively Creoles, while among the midwives Creole women were calculated (as among the medical assistants) to be a little less than half of the total number.

## Social Origin of Medical Personnel

The social origin of medical workers, who were employed in or visited the Russian colonies in America, was also not homogeneous. The diplomate doctors were almost all either hereditary nobility or those who earned individual nobility or hereditary nobility by their service. Among them can be named the descendant of an ancient knightly clan G. H. von Langsdorff, the navy doctor I. B. Ivanitskii, the Finnish noble Master of Surgery Achilles Pippingskiöld (he served as a doctor on the RAC freighter *Sitkha* which went from Abo and Kronshtadt to Russian America and Ayan in 1846–1848), and others. The doctors who served in the colonies were among the elite of colonial society, together with naval officers and heads of the colonial districts. Representatives of the middle and lower medical personnel were predominantly commoners, with Creoles, according to the RAC “Laws” (dictates) of 1821, being assigned to the petit bourgeois class.

## Recognition of Medical Personnel

Some diplomate doctors, after the end of a round-the-world expedition, received various awards or promotions during the course of service in the colonies or upon return to Petersburg. For example, the ship’s doctor Genrikh Zival’d [Heinrich Siwald], who went with O. E. von Kotsebu around the world on the naval sloop *Predpriyatie* in 1823–1826, was awarded the Order of St. Vladimir 4th degree after finishing the expedition. Above it was mentioned that, on petition of the RAC Board of Directors, such doctors as G. A. Beze, F. I. Berendt, Z. S. Govorlivyi, and I. K. Markovskii were awarded the Order of St. Stanislaus 3rd degree. Some doctors, after their stay in the colonies, made a good career in Russia. For example, V. F. Bervi became Merited Professor in Ordinary at Kazan University, while Pëtr Kirillovich Ogievskii, member of a round-the-world expedition on the naval sloop *Ladoga* in 1822–1824, was assigned to the Guards Depot in 1825 and then awarded several orders and promoted to the status of State Counselor in 1844 (RGAVMF. F. 430. Op. 6. D. 212. L. 8 ob.).

Most successfully advancing in service after returning from a round-the-world trip were Pëtr Petrovich Aliman and Avgust Erikh Kiber [August-Erich Kyber]. The former served in the rank of ship’s doctor on the frigate *Kreiser* during the round-the-world voyage in 1822–1825: the ship visited Russian America and California in 1823 and 1824. Then his career advanced, as he obtained the rank of Active State Councilor, becoming the chief doctor of the Black Sea Fleet until his death in 1847. Almost simultaneously with Aliman, Staff-Doctor Avgust Kiber visited Russian America in 1826, when he went around the world as a ship’s doctor on the naval transport *Krotkii*. By 1827 he had become Corresponding Member of the Imperial Academy of Sciences, and then in 1854 he was conferred the rank of General Army Doctor of the Black Sea Fleet (Ivashintsov 1872:20; Grinëv 2009:23, 227).

With regard to career, some doctors from Germany, who at different times visited Russian America, succeeded outside the medical sphere. In 1812, G. H. von Langsdorff was elected Extraordinary Member of the Russian Academy of Sciences, and was assigned General Russian Consul in Rio de Janeiro, and became famous later for his expedition into the tropical forests of Brazil (Komissarov 1975:55–103). Langsdorff’s fellow countryman—the well-known adventurer Doctor G. A. Schäffer—returned to Germany in 1821. From there he moved to Brazil, where he had an unremarkable career at the court of the Brazilian emperor, having obtained the title of count (Pierce 1990:446).

Several doctors from Germany and from Russia, who visited and served in Russian America, left behind notes about their visit to the American possessions of the empire, and various scientific publications and popular articles (K. G. Merck, G. H. von Langsdorff, Z. S. Govorlivyi, and others). These written works are valuable historical resources. Recently, the notes of the Finnish doctor R. F. Sahlberg about his round-the-world trip to Russian American and Siberia in 1840–1841 were published in Helsinki (Sahlberg 2007). He, like several of his colleagues in specialty, was occupied during his visit in the New World with making collections in botany and zoology. In a similar way, the Navy Doctor G. V. Mayer, in addition to his medical practice in Novo-Arkhangel'sk, collected materials for the Imperial Academy of Sciences (NARS. RRAC. Roll. 7. P. 7, 124, 248; Pierce 1990:351). Similar collected materials on various branches of science, obtained in the colonies by medical personnel in the Russian service, appeared in several museums, universities, and academic collections, where they are preserved to this day.

## Conclusion

On the whole, medical personnel left a rather noticeable mark on the history of Russian America, though their number in the colonies was always very small. Medical personnel became an independent social group within the colonial population at the beginning of the 1820s, when highly qualified doctors, as well as medical assistants and midwives (from the end of the 1820s) began to work there on a permanent basis, and training was organized for the lower medical personnel from among those born in the colonies. Though not all possessed sufficient knowledge and did not always grasp the medical art well (we recall Benëvskii, Simon, and several others), it was precisely due to their combined forces that the health and lives of thousands of RAC employees and Alaskan natives were saved.

## GLOSSARY

**Army doctor** (*shtab-lekar'*)—assigned to army headquarters, chief medical officer.

**Diplomate doctor** (*diplomirovannyi vrach*)—certified doctor (with a diploma from a medical school).

**Doctor** (*vrach*).

**Doctor** (*doktor*)—doctor (often a title).

**Doctor of medicine** (*doktor meditsiny*)—doctor with a doctor's degree.

**Fleet physician** (*flotskii lekar'*)—navy doctor.

**Hospital orderly** (*gospital'nyi dneval'nyi*).

**Master of medicine** (*magistr meditsiny*)—master's degree in medicine.

**Medical assistant** (*fel'dsher*)—medical assistant that could make diagnoses and treat patients. The *fel'dsher* was lower in rank than the *lekar'* but higher than the *podlekar'*.

**Medical assistant's apprentice** (*fel'dsher uchenik*).

**Medical official** (*meditsinskii chinovnik*).

**Midwife** (*akusherka/povival'naya babka*)—with a degree.

**Midwife** (*povival'naya babka*)—midwife without schooling.

**Orderly** (*sanitar*)—hospital attendant or medical orderly.

**Physician** (*lekar'*)—physician (one who heals).

**Physician's apprentice** (*lekarskii uchenik*)—physician's apprentice.

**Physician's assistant** (*podlekar'*).

**Staff-doctor** (*shtab-lekar'*)—an army or navy doctor, a chief medical officer.

TABLE 1. QUALIFIED MEDICAL PERSONNEL (*DOKTORA MEDITSINY, VRACHI, FLOTSKIE LEKARI*—DOCTORS OF MEDICINE, DOCTORS, FLEET PHYSICIANS)

Last name, first name, and patronymic	Year of visit or years of service in the Russian colonies	Rank during time in the colonies	Highest rank conferred in the colonies	Additional remarks
ALEGRETTI, Petr (Pietro)	1791–1792; Expedition of J. Billings-G. A Sarychev	Surgeon, expedition doctor		
ALIMAN (ALEMAN), Pëtr Petrovich	1823–1824; Round-the-world expedition, frigate <i>Kreiser</i>	Doctor of medicine, ship's doctor		Active state councilor, chief doctor of the Black Sea fleet
BEZE, Gustav Aristovich	1853–1859; service in the colonies	Doctor of medicine		Collegiate Assessor, awarded the Order of St. Stanislaus 3rd degree upon recommendation of the RAC Board of Directors, 1861
BENEVSKII, Simon Nikolaevich	1825–1828; service in the colonies	Doctor		Vilensky (Vilnius) University; dismissed because of illness and complete incompetence
BERVI, Vasiliï (Vil'gel'm) [Wilhelm] Fëdorovich	1817–1818 and 1821–1823; round-the-world expeditions of the RAC ships <i>Suvorov</i> and <i>Kutuzov</i> ; service in the colonies	Doctor of medicine, ship's surgeon 10th class		Petersburg Medical-Surgical Academy; left the colonies because of illness; Distinguished Professor in Ordinary at Kazan University
BERENDT (BERENT), Fridrikh (Fëdor Ivanovich) (BÄRENDT, Friedrich)	1858–1864; RAC clipper <i>Kamchatka</i> , service in the colonies	Doctor of medicine, junior doctor of the 28th navy depot	Collegiate Assessor, 1860	Dorpat (Tartu) University; awarded the Order of St. Stanislaus 3rd degree upon recommendation of the RAC Board of Directors, 1862
BLASHKE (BLYASHKE), Eduard Leont'evich (BLASCHKE, Eduard)	1835–1840; service in the colonies	Doctor (physician) of the 12th navy depot, chief doctor of the colonies	Staff-Doctor, 1839	Staff-Doctor of the 7th navy depot; retired from service in 1842
BOK, Fridrikh Vil'gel'm fon (BOCK, Friedrich Wilhelm von)	1848; service on RAC ships in the Pacific Ocean	Doctor of medicine, ship's doctor		Dorpat (Tartu) University

Last name, first name, and patronymic	Year of visit or years of service in the Russian colonies	Rank during time in the colonies	Highest rank conferred in the colonies	Additional remarks
ESHSHOL'TS, Ivan Ivanovich fon (Eschscholtz, Johan Friedrich Gustav von)	1816 and 1817, as well as 1824 and 1825; round-the-world expedition, brig <i>Ryurik</i> and naval sloop <i>Predpriyatie</i>	Ship's doctor and naturalist; Doctor of medicine		Professor at Dorpat University (Tartu)
FISHER, Fridrikh Fëdorovich (FISCHER, Friedrich)	1838; round-the-world expedition, RAC ship <i>Nikolai I</i>	Doctor of medicine, ship's doctor		Dorpat (Tartu) University; later Collegiate Counselor
FRANKENGEIZER, Aleksandr Fëdorovich (FRANKENHÄUSE R, Alexander Friedrich)	1841–1852; service in the colonies	Doctor of medicine	Collegiate Assessor, 1850	Dorpat (Tartu) University
GOVORLIVYI, Zinovii Stepanovich	1851–1859; service in the colonies	Physician, Titular Councillor		Awarded the Order of St. Stanislaus 3rd degree upon recommendation of the Board of Directors of the RAC, 1861
IVANITSKII, Ivan Borisovich	1845–1850; service in the colonies	Doctor	Staff-Doctor, Collegiate Assessor 1846	
IZENBEK, (IZEMBEK), Karl Fëdorovich (ISENBECK Karl)	1827 and 1828; round-the-world expedition of the naval sloop <i>Moller</i>	Doctor of medicine, ship's doctor		Petersburg Medical-Surgical Academy; Staff-Doctor of the 26th navy depot retired from service in 1831
KERNER, Lavrentii Egorovich	1817–1818; round-the-world expeditions, RAC ships <i>Suvorov</i> and <i>Kutuzov</i>	Staff-Doctor, Court Councilor		Staff-Doctor of the Main Control Expedition; retired from service in 1829
KIBER, Avgust Erikh (KYBER, August-Erich)	1826; round-the-world expedition, naval transport <i>Krotkii</i>	Doctor of medicine, ship's doctor		Corresponding Member of the Russian Academy of Sciences, General Staff-Doctor of the Black Sea fleet
KOVALĖV, Ivan	1820 and 1821; round-the-world expedition, naval sloop <i>Otkrytie</i>	Navy doctor, ship's doctor		
KOLLAN, Aleksandr (COLLAN, Alexander)	1848; round-the-world expedition, RAC freighter <i>Atkha</i>	Pharmacist, ship's doctor		
LABAND (LIBAND), Morits (Moriz)	1804–1805; round-the-world expedition, sloop <i>Neva</i>	Doctor of medicine, ship's doctor		

Last name, first name, and patronymic	Year of visit or years of service in the Russian colonies	Rank during time in the colonies	Highest rank conferred in the colonies	Additional remarks
LANGSDORF, Grigorii Ivanovich (LANGSDORFF, Georg Heinrich von)	1805–1806; service in the colonies	Doctor of medicine		Göttingen University; Extraordinary Member of the Russian Academy of Sciences in 1812, was assigned General Russian Consul in Rio de Janeiro
LENTS, Eduard fon (LENZ, Eduard von)	1848; round-the-world expedition, RAC freighter <i>Atkha</i>	Doctor of medicine		Dorpat (Tartu) University
MALYSHEVSKII, Genrikh Gonorievich	1852 and 1853; service on RAC ships in the Pacific Ocean	Doctor of medicine, ship's doctor		
MARKOVSKII (MARKLOVSKII), Ivan Kasparovich	1860–1866; service in the colonies	Senior doctor of the 16th naval depot, Collegiate Assessor	Senior doctor, Court Counselor, 1860	Awarded the Order of St. Stanislaus 3rd degree upon recommendation of the RAC Board of Directors, 1862
MERK, Karl Genrikh (MERCK, Karl Heinrich)	1791–1792; J. Billings-G. A. Sarychev Expedition	Doctor and naturalist of the expedition		
MERTENS, Andrei Karlovich (MERTENS, Karl Heinrich)	1827 and 1828; round-the-world expedition, naval sloop <i>Senyavin</i>	Doctor and naturalist of the expedition		Göttingen and Halle University
MORDGORST, Karl (MORDHORST, Karl)	1807–1808; semi-round-the-world expedition, sloop <i>Neva</i>	Physician, ship's doctor		
NOVITSKII, Anton Grigor'evich	1818, 1823 and 1824; round-the-world expeditions, naval sloops <i>Kamchatka</i> and <i>Apollon</i>	Staff-Doctor, ship's doctor		Petersburg Medical-Surgical Academy; Collegiate Assessor, 1819
OGIEVSKII, Pëtr Kirillovich	1823; round-the-world expedition, naval sloop <i>Ladoga</i>	Staff-Doctor, ship's doctor		Moscow Medical-Surgical Academy; after end of expedition awarded the Order of St. Vladimir 4th; State Councilor, 1844
PETERS, Nikolai Ivanovich	1829; round-the-world expedition, naval transport <i>Krotkii</i>	Staff-Doctor of the 14th naval depot, ship's doctor		Dorpat (Tartu) University; Court Counselor, 1841
PIPPINGSKĚL'D, Akhilles (PIPPINGSKIÖLD, Achilles)	1847; round-the-world expedition, RAC freighter <i>Atkha</i>	Master's in surgery, ship's doctor		
ROBEK, Mikhail (ROBECK, Michael)	1791–1792; J. Billings-G. A. Sarychev Expedition	Staff-Doctor		
ROMANOVSKII, Aleksandr Danilovich	1840–1845; service in the colonies	Physician		

Last name, first name, and patronymic	Year of visit or years of service in the Russian colonies	Rank during time in the colonies	Highest rank conferred in the colonies	Additional remarks
SAL'BERG, Reingol'd Ferdinand (SAHLBERG, Reinhold Ferdinand)	1840–1841; service in the colonies	Doctor of medicine, naturalist		
SAKHAROV, Ivan Vasil'evich	1825; round-the-world expedition, RAC ship <i>Elena</i>	Physician of the 4th naval depot		After the expedition he obtained the rank of Staff-Doctor in 1826
SIBIRYAKOV, Ksenofont Aleksandrovich	1863 or 1864; worked on steam corvettes <i>Kalevala</i> and <i>Rynda</i>	Ship's doctor		Senior doctor of 7th naval depot, 1870
SIMON, Georg (Egor)	1830–1833; service in the colonies	Doctor of medicine and midwife (with rank of a medical assistant)		Dismissed because of illness and complete incompetence
SHEFFER, Georg Anton (Egor Nikolaevich) (SCHÄFFER, Georg Anton)	1814–1815; service in the colonies	Doctor of medicine, Collegiate Assessor		
SHNEIDER (SHNAIDER), Gustav Ivanovich (SCHNEIDER, Gustav Gottlieb)	1854; served predominantly in Ayan	Doctor of medicine, Collegiate Assessor		
SKRYPCHINKSII, Averkii Semënovich	1832; round-the-world expedition, naval transport <i>Amerika</i>	Staff-Doctor, ship's doctor		Later State Councillor
TILING (TILENG, TILLING), Genrikh Sil'vester (TILING, Heinrich Sylvester)	1851, 1864–1867; service in the colonies	Doctor of medicine		Dorpat (Tartu) University
TREMER Karl	1835; round-the-world expedition, naval transport <i>Amerika</i>	Staff-Doctor, Doctor of medicine, ship's doctor		After end of expedition awarded the Order of St. Vladimir 4th; later Collegiate Counselor, main doctor of Nikolaevsk naval hospital
VEBEL', Anton Bogdanovich (Khristianovich)	1829; round-the-world expedition, RAC ship <i>Elena</i>	Doctor of medicine, ship's doctor		
VOLKOV, Pavel Alekseevich	1820–1822; service in the colonies	Navy doctor		Left the colonies because of illness
VOLYNSKII, Nikolai Pavlovich	1836–1840; service in the colonies	Physician of the 9th naval depot	Staff-Doctor, 1838	Staff -Doctor of the 20th navy depot; retired from service in 1843

Last name, first name, and patronymic	Year of visit or years of service in the Russian colonies	Rank during time in the colonies	Highest rank conferred in the colonies	Additional remarks
ZAOZERSKII, Grigorii Alekseevich	1820 and 1821; round-the-world expedition of the naval sloop <i>Blagonamerennyi</i>	Staff-Doctor, ship's doctor		Petersburg Medical-Surgical Academy; left the sloop in Kamchatka because of illness
ZIVAL'D, Genrikh (SIWALD, Heinrich)	1824 and 1825; round-the-world expedition of the navy sloop <i>Predpriyatie</i>	Doctor of medicine, ship's doctor		Dorpat (Tartu) University: after end of expedition awarded the Order of St. Vladimir 4th degree, 1826

TABLE 2. MEDICAL ASSISTANTS AND PHYSICIANS' ASSISTANTS (*FEL'DSHERY* AND *PODLEKARI*)

Last name, first name, and patronymic	Year of visit or years of service in the Russian colonies	Rank during stay in the colonies	Place of service	Additional notes
BAUSHEV, Andrei Ermolaevich	1825; round-the-world expedition, RAC ship <i>Elena</i> ; 1841; semi-round-the-world expedition, RAC ship <i>Naslednik Aleksandr</i>	Medical assistant	Ship's corpsman	
BENZEMAN, Platon Khristoforovich	Worked in the service of the RAC in the colonies	Physician's apprentice, then medical assistant	Managed the RAC clinic at Hot Springs near Novo-Arkhangel'sk in the 1850s	Creole
BRANDT, Bogdan	1810; round-the-world expedition, naval sloop <i>Diana</i>	Medical assistant 14th class, ship's doctor		
BRITYUKOV, Miron Stepanovich	1784-1786; service in the colonies	Doctor's assistant, sergeant of the command at the Okhotsk port	Kodiak Island	
BUSHKOVSKII, Mikhail Stepanovich	Worked in the service of the RAC in the colonies	Physician's apprentice, then medical assistant	In the hospital in Novo-Arkhangel'sk	Creole
CHECHENĖV, Aleksei Petrovich	1829-1863; service in the colonies	Physician's apprentice, medical assistant	In the hospitals of Novo-Arkhangel'sk and Pavlov Harbor (Kodiak Island)	Creole
DUSHKIN, Il'ya Trofimovich	Worked in the service of the RAC in the colonies from 1845	Apprentice medical assistant, then medical assistant	In the hospital in Novo-Arkhangel'sk	Creole, in 1865 was appointed manager of Atka Island

Last name, first name, and patronymic	Years of service in the duty	Duty	Place of service	Additional notes
ERANSKII (YARANSKII), Nikolai	1820s; service in the colonies	In the duties of physician's assistant	In the hospital in Novo-Arkhangel'sk	Creole
ERMILOV, Polikarp	1852; round-the-world expedition, on the RAC ships <i>Kad'yak</i> and <i>Atkha</i>	Medical assistant	Ship's corpsman	
ERMOLAEV (ERMOLOV), Naum Ignat'evich	1822–1825 and 1827–1834; service in the colonies	Senior medical assistant 1st class; grade 14th class	In the hospitals in Novo-Arkhangel'sk and Pavlov Harbor (Kodiak Island)	
FOMIN, Nikolai	1860s; service in the colonies	Medical assistant	In the Kodiak District	Creole
GABANOV, Aleksandr	1838; round-the-world expedition, RAC ship <i>Nikolai I</i>	Medical assistant, ship's doctor		
GERING, Iozef (probably HERRING, Joseph)	1863–1867; worked in the service of the RAC in the colonies	Senior medical assistant	In the hospital in Novo-Arkhangel'sk	
GROBOV (GRIBOV), Semën Fadeevich	1836–1837; worked in the service of the RAC in the colonies	Medical assistant of the 1st medical crew of the Baltic fleet	In the hospital in Novo-Arkhangel'sk	Died 1837
KALUGIN, Vasilii	1831–1840; service in the colonies	Medical assistant; grade 14th class	In various districts of the colonies	
KHRAMOV, Grigorii	1853; service in the colonies	Retired medical assistant 14th class	No data	
KOSYLBASHEV, Stepan	1797–1818; service in the colonies	In the duty of physician's assistant	In the hospital in Pavlov Harbor (Kodiak Island)	
KOTEL'NIKOV, Ivan	1820s; service in the colonies	Senior medical assistant	In the hospital in Novo-Arkhangel'sk	Died 1828
LARIONOV, Galaktion	1861–1866; service in the colonies	Senior medical assistant	In the hospital in Novo-Arkhangel'sk	
MATVEEV, Ivan	1840s; service in the colonies until 1845; set off for the colonies a second time in 1850	Medical assistant, then physician's assistant 14th class	In the hospital in Novo-Arkhangel'sk (probably)	
MUTOVKIN, Aleksei	1804–1805; round-the-world expedition, sloop <i>Neva</i>	Physician's assistant		
MUKHIN, Nikolai Ivanovich	1797–1825, from 1819 worked in the hospital	Physician's assistant, then inspector and housekeeper in the hospital	In the hospital in Pavlov Harbor (Kodiak Island)	
NIBUR, E. A.	1859–1861; service in the colonies	Assistant druggist	In the apothecary in Novo-Arkhangel'sk	Sent from the colonies for chronic drunkenness

Last name, first name, and patronymic	Year of visit or years of service in the Russian colonies	Rank during time in the colonies	Highest rank conferred in the colonies	Additional remarks
NIKITIN, Grigorii	1860s; service in the colonies (probably)	Junior medical assistant	In the hospital in Novo-Arkhangel'sk (probably)	
OL'GIN, Nikolai Aleksandrovich	1860s; service in the colonies	Medical assistant, part-time clerk	On Bering Island	Creole
PANSHIN (PANCHIN), Grigorii	1860s; service in the colonies	Medical assistant	In the Kodiak District	Creole
PANSHIN, Pavel Maksimovich	1840s–1860s; service in the colonies	Medical assistant	In the Kodiak District	Creole
PETROV, Mikhail	1854–1860s; service in the colonies	Medical officer 14th class	In the hospital in Pavlov Harbor (Kodiak Island))	Died 1867
PETROV, Osip	1863–1867; service in the colonies	Junior medical assistant; grade of 14th class	In the hospital in Pavlov Harbor (Kodiak Island)	
PLOTNIKOV, Aleksandr Gordeevich	1860s; service in the colonies	Medical assistant	In the Kodiak District	Creole
REPIN, Aleksandr Ivanovich	1830s–1850s; service in the colonies	Physician's apprentice, then, medical assistant	In the Kodiak and Unalaska Districts	Creole
STEPANOV, Arkhip	1821–1822; round-the-world expedition, RAC ship <i>Kutuzov</i>	Medical assistant		
TRANCHUK, Dominik Ignat'evich	1846–1851; service in the colonies	Pharmacist, druggist, and medical assistant	In the hospital in Novo-Arkhangel'sk	1847–1850 simultaneously worked as steward, in 1851—Mentor in the Sitka Seminary
VASIL'EV, Dmitrii	1824 and 1825; round-the-world expedition, naval sloop <i>Predpriyatie</i>	Medical assistant 1st class		
VILLER, Iogann	Worked in the service of the RAC in the colonies 1837–1848	Mechanic	Carried out the duties of medical assistant for the settlers of Unga Island 1847–1848	
ZENZIN (ZINZIN), Aleksei Grigor'evich	From the beginning of 1830s to the beginning of the 1860s	Medical assistant	In the hospitals in Novo-Arkhangel'sk and Pavlov Harbor (Kodiak Island)	Creole
ZYKOV, Daniil, Nikitich	1832–1862; service in the colonies	Senior medical assistant, non-commissioned office of the 4th medical crew; grade 14th class	In hospitals in Novo-Arkhangel'sk and Pavlov Harbor (Kodiak Island)	

TABLE 3. MEDICAL ASSISTANTS' APPRENTICES AND PHYSICIANS' APPRENTICES  
(*FELD'SHERSKIE* AND *LEKARSKIE UCHENIKI*)

Last name, first name, and patronymic	Year of visit or years of service in the Russian colonies	Rank during stay in the colonies	Place of service	Additional notes
CHERNYSHEV, Aleksei	1840s; service in the colonies	Physician's apprentice	No data	Creole (probably)
DMITRIEVSKII (DMITRIEV), Ivan Sergeevich	1866–1867; service in the colonies	Physician's apprentice	In the hospitals of Novo-Arkhangel'sk and Pavlov Harbor (Kodiak Island)	
FROLOV, Nikifor	1830–1836; service in the colonies	Hospital orderly	In the hospitals of Novo-Arkhangel'sk	Thai
KOZYRYACHEV, Luk'yan Gavrilovich	1850s; service in the colonies	Physician's apprentice	In the hospital in Novo-Arkhangel'sk	Creole
OSKOLKOV, Yakov Andreevich	1833–1847; service in the colonies	Physician's apprentice	In the hospital in Novo-Arkhangel'sk and at Fort Ross	Creole
PANSHIN, Ivan	1850s–1860s; service in the colonies	Physician's apprentice	In the hospital in Novo-Arkhangel'sk, from 1858 at Mikhailovskii Redoubt	Creole (probably)
PETELIN, Ivan Semënovich	1833–1858; service in the colonies	Physician's apprentice	In the Kodiak and Unalaska Districts	Creole
PRYAKHIN, Andrei Afanas'evich	1850s; service in the colonies	Physician's apprentice	In the hospital in Novo-Arkhangel'sk	Creole
RYSEV, Stepan	1820s; service in the colonies	Physician's apprentice	In the hospital in the Unalaska District	Creole
SKVORTSOV, Pavel Fëdorovich	1860s; service in the colonies	Medical assistant's apprentice	In the hospital in Pavlov Harbor (Kodiak Island)	Creole
TERENT'EV, Viktor	1850s–1860s; service in the colonies	Physician's apprentice	In the hospital in Novo-Arkhangel'sk	Creole

TABLE 4. MIDWIVES (AKUSHERKI)

Last name, first name, and patronymic	Years of service in the duty	Duty	Place of service	Additional notes
ANDREEVA, Domna Andreevna	1840–1845	Midwife	In Novo-Arkhangel'sk	
ATRAMONOVA, Anna	1850s	Midwife	In the Kodiak District	Creole woman (probably)
DMITRIEVSKAYA, Maria Semēnovna	1866–1867	Midwife	In Novo-Arkhangel'sk and Pavlov Harbor (Kodiak Island)	Wife of physician's apprentice I. S. Dmitrievskii
ERMOLAEVA, Olg'a Vasil'evna	1828–1834	Midwife	In Novo-Arkhangel'sk	Wife of medical assistant N. I. Ermolaev
GEDEONOVA, Maria Kalistratovna	1840s–1850s	Midwife	In Novo-Arkhangel'sk	Creole woman
GROBOVA, Maria Petrovna	1836–1841	Midwife	In the Kodiak District and Novo-Arkhangel'sk	Wife of medical assistant S. F. Grobov
GUSEVA, Irina Andreevna	1860s	Midwife's apprentice	In Novo-Arkhangel'sk	Creole woman
KOSTROMITINOVA, Anna Alfeevna	1850–1860	Midwife	In Novo-Arkhangel'sk	Creole woman
MILLER, Khristina (Kristina) Ivanovna (MILLER or MÜLLER, Christine)	1861–1866	Midwife	In Novo-Arkhangel'sk	
MOSKVITINOVA (DMITRIEVA), Akulina	1840	Midwife	In the Atka District	Creole woman
REZANTSEVA (RYAZANTSEVA), Fedos'ya Vasil'evna	1853–1860	Midwife	In Novo-Arkhangel'sk	Creole woman, studied midwifery in St. Petersburg in 1849–1852
TERENT'EVA (PETROVA), Ekaterina	1850	Midwife	In Novo-Arkhangel'sk	Creole woman (probably)
UCHILISHCHEVA (CHAYUDAK), Dar'ya	1840	Midwife	In the Kodiak District	Kodiak Eskimo woman
ZYRYANOVA, Praskov'ya	In 1845 set off from St. Petersburg to the colonies	Midwife	No data	

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# DEBATING THE COMPLEXITY OF CLOVIS: INSIGHTS INTO THE COMPLEXITY PARADIGM

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## ABSTRACT

At the risk of sounding cliché there may be more definitions and ideas on what complexity is than there are archaeologists who have considered it. Could complexity have existed within a given society without material evidence of it? Using the Clovis culture of North America, this article seeks to examine this question. Within this article four different sets of complexity requirements are used. Clovis culture is considered and logical assumptions are made about Clovis. This is done in order to better understand the potential of the Clovis culture to have been representative of a more complex culture than previously thought. It is found that Clovis peoples could have been more complex than they are typically regarded to be. In addition this study promotes the idea that archaeologists should perhaps not be asking how complex a culture was but instead ask in which ways was a given culture complex.

## Introduction

In his 2010 article, Ames debates the appropriateness of the questions which archaeologists are posing concerning the complexity of prehistoric cultures. This is a worthy endeavor, as archaeologists have long debated the exact definition of complexity (Ames 2010; Hayden 1995; Woodburn 1982), but do not often debate how we use these various definitions of complexity to phrase, ask, and attempt to answer questions of complexity. At the risk of sounding cliché, in the end, there may be more definitions and ideas on what complexity is than there are archaeologists who have considered it, as many have switched their ideas throughout their careers. While Ames (2010) recognizes that there are several popular definitions of complexity, he moves beyond this to ask the following question: can inequality (an often used marker of complexity) occur without complexity (Ames 2010:16)? Instead of seeking to provide a new definition of complexity, Ames (2010) notes when complexity and inequality are linked and when they are not. Archaeologists may never agree on the ultimate causes and signs of complexity. This may in fact be for the best. Archaeologists can continue to use their own pet definitions, and in doing so, learn more about past societies as their variety of definitions serves to highlight different complex behaviors. In a similar manner to Ames (2010), this article seeks to address the questions that archaeologists are asking about complexity and evaluate in what ways we can change these questions to better elucidate the culture patterns within the past.

The crux of this article is best expressed in asking one question. Could complexity have existed within a given society without material evidence of it? The same question can be reformulated to incorporate any of the requirements for the various definitions of complexity. One word within this question is of particular importance: could. This word choice postulates that complexity could have existed among cultures with no material correlates. For good and obvious reasons archaeologists are focused on what can be seen within material remains. This is logical, as material remains are much, if not all of our data in many cases. There is a clear correlation between the amount of artifact categories a given society is thought to have and the level of complexity to which they are assigned. It must be stated that these artifact categories are only a tool used in order to reduce the inherent variability of the archaeological record into a manageable set of terms. This is done in an effort to make communication about or describing the variability of artifacts easier (Andreisky 2005:61). The number and variability of these categories are defined by the archaeologists who study these artifacts and therefore may or may not have been the same categories used by the ancient peoples who actually made the artifacts. What artifact categories do represent, however, is the number of bins an archaeologist feels is appropriate to study the lifeways of a given culture. To demonstrate the correlation between the number of artifact categories and the assumed complexity of a culture a quick study was conducted.

A search was done using JSTOR for articles within *American Antiquity* containing tables in which categories of artifacts were listed and the frequency of these artifacts were compared. Four articles on four different archaeology cultures were chosen at random and the numbers of artifact categories were calculated. Each article was found by searching "(insert culture) artifact richness." The only exception was the Knight's (2004) article on the Mississippian which was found while intending to find an article on the Hopewell. This article selection was considered random enough for the purposes of the article. Categories including non-modified remains such as faunal remains were not counted. The results of this study and articles used are shown in Table 1. There is a clear dichotomy between those societies thought to be "complex," the Mississippian, the Puebloan Southwest and the Marpole period of the Northwest coast, and the "non-complex" peoples of the paleo-archaic within the Great Basin. While further study is needed to confirm this phenomenon, this exercise makes the point that many archaeologists feel that more artifact categories equate to more complex peoples.

In an elegantly written anecdote, Tainter refutes the claim that more material culture (or social institutions) reflects social complexity within a system (or in the case of archaeology a culture). Tainter relates the manner in which the supplies were shipped to France when the forces of the United States joined World War II. All manner of supplies were to be had including medical gear, extra ammo, and even jeeps. This, however, did not constitute a complex system because the supplies were poorly organized to the extent that soldiers could not locate the items they needed and even damaged many important items while searching. Complexity then is both the number of items which reflect social institutions and the nature and way in which the items or institutions are interconnected (Tainter 2006).

Tainter's example brings up more questions. Are archaeologists right in their assumptions that more artifact types are indicative of more complexity? Are there forms of complexity for which there are no material correlates? In order to evaluate these questions, the Clovis culture of North America is considered as a case study. Clovis provides a good case study as they have long been regarded as highly mobile band level hunter-gatherers, focused on the procurement and consumption of faunal materials (Kelly and Todd 1988). Knowing this, it would seem that Clovis should be at the lower end of the continuum of complexity, and possibly the very end. Another advantage of the Clovis case study is that there is not an ethnographic record which accurately

represents the Clovis culture, either directly or by comparison to modern hunter-gatherers (Kelly and Todd 1988:235). Within this article four different sets of complexity requirements are used. Clovis culture is considered and logical assumptions are made about Clovis. This is done in order to better understand the potential of the Clovis culture to have been representative of a more complex culture than previously thought.

## Case Study: Clovis Culture

The Clovis culture is characterized as comprised of band level hunter-gatherers who inhabited most of North America, extending from Central America up into Southern Canada. Clovis is known and typically identified by the unique morphology of their hafted bifaces. In terms of morphology, the Clovis hafted biface is identified via its unique shape and the presence of fluting on the haft (Haynes 2002:81). There is however, some variability in how Clovis hafted bifaces are made, including the presence of overshot flaking in the west and the lack of overshot flaking in the plains (Haynes 2002:81). These hafted bifaces are largely what defines the culture in that they are one of the only diagnostic artifacts for Clovis. Archaeological evidence of Clovis culture is found throughout North America and within all of the various environmental regions (Buchanan and Hamilton 2009). According to a recalibration of the radiocarbon dates from the most prominent Clovis sites, performed by Waters and Stafford (2007), the Clovis culture may have been short lived, extending from 11,050–10,800 radiocarbon years BP.

Hamilton and Buchanan (2009) have argued that there are in fact only three types of Clovis sites: camp sites, kill sites, and caches. Working with this limited typology demonstrates that caches are rare and campsites rarer still so that kill sites dominate the archaeological record of Clovis. Thus the archaeological record of the Clovis is quite ethereal, consisting largely of lithic artifacts with the occasional preservation of faunal tools or remains. The exact subsistence practice of the Clovis peoples remains unknown. Some archaeologists insist that a vast majority of the Clovis diet was meat (mostly big game) (Kelly and Todd 1988). This view, however, may be the product of perseveration. Others point out the few sites in which there are faunal preservation to argue that Clovis peoples were generalists (Waguespack and Surovell 2003). 79% of the sites sampled in this study contain mammoths, 24% contained lagomorphs, 24% fish, and 30% turtle and or tortoise remains. These numbers suggest that Clovis peoples hunted more than just large game (Waguespack and Surovell 2003:342). It is also likely that Clovis people made use of plants as well, but there is little direct evidence within the archaeological record to support this. Thus, the exact nature of Clovis subsistence remains unknown. This background on the Clovis culture highlights the fact that little has been revealed about the complexity of the Clovis peoples. In an effort to account for as many of the definitions of complexity as possible, the Clovis culture was evaluated by the standards of four different sets of criteria. All four criteria are used to better understand the level of complexity that could have been possessed by the Clovis culture. The first of the definitions used is that of Woodburn (1982). Woodburn (1982) defined two categories of resource consumption: immediate consumption systems and delayed return systems. Immediate consumption systems are those in which there is no storage of food and the tools used to acquire resources are simple. In opposition to this pattern is the delayed return system is one in which food is stored for later consumption and the tools of food procurement are more complex. Also important to the delayed return system is the requirement that the resources which are procured have been made more productive through intensification. A third requirement of delayed return

systems is that ownership of those resources (including both resource patches and technology required for the production of tools or goods) be in the hands of select members of the group (Woodburn 1982:432–433).

The first step in understanding where Clovis culture fits along this continuum between immediate and delayed consumption is the consideration of whether or not Clovis people stored food. Despite the fact that the Clovis people did not use archaeologically visible storage pits, there has been some direct evidence of storage among the Clovis peoples. Frison and Todd (1986) reported the presence of a meat cache located beneath a pile of bones at the Colby Bone Bed. Even if such caches were an everyday practice of Clovis, preservation of such sites would be a rare occurrence indeed. The second reason Clovis is likely to have practiced storage is the inherent logic that mammoths are far too large to be eaten by a band of 25 people in a short period of time. As shown by Gary Haynes, mammoths would have likely contained over 2.5 million calories (Haynes 2002:216). Assuming that a member of the band ate 2,000 calories of meat a day it would take a band of 25 people 52 days to eat the meat. This necessitates either storage or the waste of copious amounts of meat. Thus not only could Clovis have practiced storage, but the size of their primary prey requires it.

Another requirement of Woodburn's (1982) delayed return pattern is the use of high quality tools. Few would argue that Clovis hafted bifaces are not of high quality. While it is admitted that Clovis hafted bifaces do not take a long time to actually knap, the acquisition of the chert used to make them may have taken quite a while. Several archaeologists have reported that chert used to create Clovis hafted bifaces have come from between 120–300 kilometers away (Fagan 2005:92; Huckell 2004; Morrow 1995). These chert sources even could have been claimed by specific groups. This would fulfill another requirement of a delayed consumption system in that it would demonstrate ownership of resources required for the production of tools used to procure food. The restriction of certain chert resources to certain groups or certain members within a group could be addressed through archaeological remains. This endeavor, however, would require a large data set and thorough understanding of the cherts available within the region of study. This would be an interesting and potentially highly informative direction for further research. The second set of criteria by which Clovis culture was evaluated is simply the presence or absence of inequality. Inequality has been argued to be essential in understanding complexity (Feinman 1995; Roscoe 1993; Wiessner 2002). The question of whether or not Clovis peoples could have had status differentiation is difficult to argue. There is an overall lack of habitation sites within the Clovis archaeological record and no burials; thus assigning goods to a single person or group of people is difficult. With little potential evidence for material items which could reflect inequality, the potential for social inequality must be evaluated through an examination of how Clovis peoples could have lived. As argued by Ames (2010), there is inequality among most groups in some form. It must be acknowledged, however, that the potential for status differentiation with a small band of 25 people would be quite limited. This is not the only contact that Clovis people would have had, as it is important for hunter-gatherers to maintain contact with others for the purposes of information exchange (Fitzhugh, Phillips, and Gjesfeld 2011), and also potential exchange of marriage partners. These types of Supra-band networks are predicted to develop and be most important in situations where the environmental conditions are variable or the people participating in the network are new to the area (Fitzhugh, Phillips, Gjesfeld 2011). These are conditions which could certainly be argued to apply to Clovis peoples; therefore, given the model presented by Fitzhugh, Phillips, and Gjesfeld (2011), it is likely that such a network would have existed among the Clovis.

It is during these periods of networking and information sharing that status enhancement could have occurred. The host could have provided meat if a mammoth or other large fauna had recently been killed. If the more generalized subsistence strategy of Clovis is accepted then there would have been several other options for feasting foods. Hayden (1995, 2001) argues that this kind of feasting was the essential form of prestige building which leads to social inequality. Though this version of the rise of complexity certainly involves inequality, the proximate and only cause for Hayden (1995, 2001) is feasting. As outlined above, if Clovis did practice storage and routinely took mammoth as prey, they would have both the method and the food to provide feasts when several groups got together to share information and exchange marriage partners. These events would have provided ample opportunity for prestige building and left little in the way of archaeological evidence.

Another avenue for prestige, and therefore inequality development, is the hunting of large game. The exact nature of Clovis hunting techniques is unknown. It has been shown that an elephant can be taken through the use of Clovis hafted bifaces and atlatls, but more importantly within the same article it was argued that multiple hunters made the process much easier (Frison 1989). This indicates it is likely that several hunters worked together to hunt mammoth. A good analogy to illustrate how variable prestige gain among Clovis hunters could have been is whaling. Like mammoth hunting, whaling is both risky and an opportunity to gain prestige through the procurement of a large meat package. On one end of the whaling spectrum prestige gain is the Inupiat whale hunt. Within the ethnographic pattern, a team of hunters goes after whales during whaling season. Within the boat are several people with specialized tasks including 6 rowers, a harpooner, and a steerer (usually the leader) (Cassell 1988:98–99). Despite the fact that the steerer and harpooner had more important roles, the prestige was shared among the crew. The only exception to this was the *Umialik* (the organizer) who enjoyed enhanced prestige having put forth the economic capital for the hunting season (Cassell 1988). All members of the boat crew share equal risk, and the greater share of the prestige is gained through economic superiority. The counter example is the whale hunting of the Aleutian Islands, in which a single Kayaker approaches the whale, dispatches it, and is certain to receive credit for the act due to their personally diagnostic harpoon (Quimby 1944). In this case the only person who takes the risk is the hunter, and differential prestige is gained, not through economic superiority, but skill. These examples illustrate that different hunting practices can result in vastly varying prestige gaining systems, even when the prey is similar. Therefore without greater knowledge of Clovis hunting, it is impossible to say how prestige was distributed after a mammoth kill. Clovis mammoth hunting could have afforded individuals or groups great prestige and in turn built the foundation a semi-ranked society built on achieved status.

Having examined inequality based definitions of complexity, feasting as complexity, and ideas of delayed and immediate return systems, the final method of complexity evaluation is the trait list. Trait list definitions of complexity have been used by many archaeologists (Price and Brown 1985; Loponte, Acosta, and Musali 2006). The traits used within this article are largely taken from the general traits argued to be typical trait lists by Ames (2010). Due to the nature of trait list views of complexity, several of the attributes have already been addressed within this article such as inequality and storage. These traits are included in Table 2, along with the traits considered in this section. Beyond storage and inequality, three other attributes will be considered within the trait list style analysis of Clovis. The first of these attributes is the density of populations and or population levels. This attribute has been used in several studies but will be defined here as per the guidelines set out by Price and Brown (1985:10). Price and Brown (1985)

see population growth and the resulting population density not as a cause of complexity but instead the cause of problems or stress, which are addressed through changes in human behavior and subsequently lead to greater complexity (Price and Brown 1985:10). Thus the marker of these changes can be seen archaeologically through greater population growth and increased population density.

Pinpointing the actual population of a hunter-gatherer group is a very difficult endeavor at best and is in fact nearly impossible using current anthropological theory. A few methods have been developed to quantify the populations of those groups who leave little in the ways of living structures. A popular method for population estimation is that of Chatters (1995). Chatters uses the frequency of radiocarbon dates as a measure of population. What this truly measures is not population but likely a combination of the availability of fire wood, how often people used fire, and how much money the modern archaeological project had within the budget for radiocarbon dates. Also, as demonstrated by the data used by Buchanan and Hamilton (2009) the number of Clovis sites with radiocarbon samples is quite low when compared to the number of non-radiocarbon sites on the landscape. Despite containing many Clovis points the southeastern United States is nearly devoid of radiocarbon dated Clovis sites. Thus the only real statements that can be made about Clovis populations is that they were well spread out and lived in a variety of environments (Buchanan and Hamilton 2009), lived in small bands (Haynes 2002), and likely participated in some sort of macro band networks as per the models of Fitzhugh, Phillips, and Gjesfeld (2011). Thus, the total population, as compared to later North America hunter-gatherers, is likely low as is the population density.

The next attribute on the trait list of complexity is the requirement of semi or complete sedentism. Price and Brown (1985) argue that this more sedentary lifestyle is typically due to circumscription. For Price and Brown (1985), circumscription occurs when the resources of the land around a group are being utilized such that a population is forced to become sedentary and aggregate. As shown within the population study, the population of Clovis was likely not high enough for this to have occurred. There is also no direct evidence of Clovis permanent housing of any kind. Also, as discussed previously, Clovis moved great distance as Clovis hafted bifaces are made from chert found as far as 300 kilometer away (Fagan 2005). For these reasons it is likely that Clovis was highly mobile and should not be considered sedentary or even semi-sedentary.

The final general requirement upon the trait list of complexity is evidence for occupational specialization. As with many of the traits discussed above, there is little direct evidence for specialization but there are some constructive statements to be made from the data at hand. One potential avenue for Clovis specialization is in the production of lithic stone tools. Clovis bifaces are more difficult to make, requiring quite a bit of skill, and could require the mastery of a specialist to make. Many of the stylistic studies of Clovis hafted bifaces manufacture such as those of Buchanan and Hamilton (2009), Hamilton and Buchanan (2009), Morrow and Morrow (1999), and O'Brien, Darwent, and Lyman (2001) have had a regional focus which is too broad to address these questions. Thus the quality of the hafted bifaces could represent the work of specialist. Another potential venue of specialization among the Clovis people are the networking specialists proposed by Fitzhugh, Phillips, and Gjesfeld (2011:6). These specialists gather knowledge and move materials about from band to band. In doing this they build relationships and gain knowledge about the surroundings that can be used in times of need to dictate where to move or whom to move in with (Fitzhugh, Phillips, and Gjesfeld 2011). These specialists could have existed amongst Clovis peoples and been all but archaeologically invisible. While lithic specialists may be detectable within the archaeological record, these networking specialists would be difficult to detect. These nearly invisible specialists may have been present among the Clovis people.

## Discussion and Conclusions

In the preceding analysis of Clovis complexity, it should be noted that no exact answers or opinions of whether or not Clovis are complex were offered. In many ways this is point. Kim and Grier (2006) have noted that in truth there is little to be gained by placing some cultures within the metaphorical box labeled complex and others within the box of simplicity. Kim and Grier further point out that various terms and studies of complex versus simple hunter-gatherers has helped to demonstrate the diversity of the hunting and gathering lifestyle in the past, but now these terms encourage typological generalization. Anthropologists should not seek to answer the question of whether a society was complex or not, but instead seek to evaluate in what ways a society could have been complex. In truth, this analysis has not clarified the question of whether or not Clovis is complex, but instead has muddled the argument. Illustrating the ways in which Clovis people were and could have been complex aides in fleshing out Clovis behavioral systems as well as pointing out some avenues for further research.

Several examples of behaviors and actions which the Clovis people could have engaged in have been suggested, providing evidence that there are culturally complex behaviors for which there would be no material correlate. As Ames (2010) suggests, it has long been the burden of archaeologists to prove complexity and if no material indication of complexity is present egalitarianism (read lack of complexity) is assumed. If there are complex behaviors for which there is no material indication, are archaeologists safe to assume that cultures are egalitarian and therefore not complex? The crux of Ames (2010) argument is that inequality exists, at least to some degree, within all societies.

The fact that there are complex behaviors which exist and leave no archaeological evidence and that inequality is actually present within most societies deemed egalitarian begs the question: what is the importance of the concept of egalitarianism? Are there actual egalitarian non-complex hunter-gatherers in the archaeological past? If not, why do archaeologists continue to ask whether or not a given society is complex if the answer is always yes? This is not to say that comparing the complex aspects of one society to the complex behaviors within another is not a worthwhile endeavor. Comparison of these traits can lead to an understanding of why they developed in one area and not in another. Now that the variability of hunter-gatherers has been recognized (Kim and Grier 2006), the variability of hunting and gathering societies can be compared in an effort to better understand hunting-gathering societies of the archaeological past of which we know little.

The variability present among hunting-gathering societies demands that archaeologists ask different questions. Instead of asking whether a society was complex they should ask in which ways was a given culture was complex. As opposed to placing a culture along the continuum between egalitarian and ranked or simple to complex, archaeologists should be asking does a society attempt to maintain equality and if so, what complex mechanisms do they attempt to use? These questions will help to highlight and understand the cultural variability between hunter-gather groups and facilitate hunter-gatherer studies in both the archaeological past and present. Ames makes a key point within his (2010) article stating, "Archaeologists lack methodologies for establishing whether an ancient society was egalitarian."(37). If archaeologists lack the methodologies to evaluate complexity, why do they continue to ask questions that demand them to do so? It is the author's view that modern archaeologists will never find social complexity within the archeological record through generalization.

TABLE 1. NUMBER OF ARTIFACT CATEGORIES

<b>Region/Time period</b>	<b>Artifact Categories</b>	<b>Article</b>	<b>Contents</b>	<b>Table/Chart</b>
Pueblo II SW	31	Kent 1999	Ceramic and Lithics	Table 4 page 88
Marpole NWC	35	Smith et al. 1950	Lithics, Wood, Bone tools and more	Table 3 Page 28
Paleo Archaic Great Basin	6	Jones et al. 2003	Lithics	Tables 6 and 7
Mississippian	29	Knight 2004	Ceremonial, Bone tools, Prestige Items	Table 2

TABLE 2. COMPLEXITY TRAIT LIST FOR CLOVIS

<b>Trait</b>	<b>Could Clovis have possessed this?</b>
Storage	Limited evidence (but likely due to amount of calories gained)
High population densities	No, likely low population density.
Semi to full sedentism	No, we know them to be highly mobile due to the range of lithic raw materials.
Occupational Specialization	Unknown. While this is uncommon among hunter-gatherers, the skill required to make a Clovis point is intriguing.
Evidence for Status differentiation (Inequality)	Unknown. Though most modern hunter-gatherers do not exhibit this strongly, big game hunting could provide an avenue.

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