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## LOWER CHINOOKAN DISEASE AND DEMOGRAPHY

*Robert T. Boyd*

**I**N the first century of contact, the Lower Columbia Chinookans suffered more from the effects of introduced diseases and depopulation than almost any other Native peoples in the Northwest. Yet they survived, and their numbers are increasing. This chapter is a history of Lower Chinookan disease and population, from the aboriginal state, through the disruptive early contact years, up to the rebound and revitalization of the last century.

### ABORIGINAL HEALTH AND DISEASE

Like other Northwest Coast peoples contacted by whites in the late 1700s and in common with early contact hunting-gathering peoples around the world, Lower Columbia Chinookans were relatively healthy. The explorers and traders who first met them said as much. On November 1, 1805, after spending nearly a year in lower-river Chinookan territory, William Clark wrote: "The natives of the waters of the Columbia appear helthy" (Lewis and Clark 1988:373). In 1811, Astorian Alexander Ross (2000) recorded: "If we may judge from appearances, these people are subject to but few diseases" (98). And as late as 1824, Hudson's Bay Company Governor George Simpson (1968) proclaimed: "they are however wonderfully healthy being rarely afflicted by any other than Imported Diseases" (99).

This relative health, however, did not mean that Lower Columbia Chinookan peoples were disease-free. They had their own inventory of diseases, which were related to a fishing and foraging lifestyle, residence in relatively small villages, and seasonal movement to resource areas. Most of the diseases were chronic, arising from dietary imbalances, bone wear, and parasites, all maintained in individuals and rarely very contagious. We know about these

diseases from the early historical literature, anthropologists' interviews with Chinookans, studies of disease traces in bones, and epidemiological comparisons with neighboring peoples (Table S11.1 online).

For hunting-gathering peoples, living in high-latitude temperate regions had advantages and disadvantages. The most important advantage was that colder climates support fewer parasites and disease-causing micro-organisms than do warmer ones. The biggest disadvantage was seasonal food shortages in late winter and early spring, which led to nutritional problems and occasional starvation. On the Lower Columbia, eyewitness accounts describe such shortages, and several myths and tales tell of starvation. A key resource was salmon, which is known for its inconsistent runs. In early April 1806, Lewis and Clark (1991) met several canoes of Cascades peoples on their way to the Wapato Valley. On April 1, Lewis wrote "that their relations at that place were much straightened . . . for the want of food; that they had consumed their winter store of dried fish and that those of the present season had not yet arrived" (49). Two days later, he wrote: "these poor people appeared to be almost starved, they picked up the bones and little pieces of refuse meat which had been thrown away by the party" (62). John Ordway, a member of the expedition, reported on April 5: "they inform us that the natives above the great falls [The Cascades] have no provisions and many are dieing with hunger. this information has been so repeatedly given by different parties of Indians that it does not admit of any doubt" (Lewis and Clark 1995:286).

Myths and tales with starvation themes include "A Famine at The Cascades" (Sapir 1909b:227-29), "They Died of Hunger" (Clackamas; Jacobs 1958-59:458-66), "The Spirit of Hunger" and "Winter All the Year Round" (Kathlamet; Boas 1901:207-15, 217-20), and "The GILĀ'unaLX" (Chinook; Boas 1894:229-33). Several other texts note starvation in passing. Causes for starvation included a cold and late winter with snow and ice, the exhaustion of stored food supplies, and the failure of major food resources. Some people suffered more than others. In "The Spirit of Hunger," for example, "Many old people were dying . . . poor children died of hunger" (Boas 1901:207). That myth also personified hunger as a spirit who hoarded and withheld the wild foods: "She was very lean; she was only bones, but she was braided" (212).

The personal hygiene of Lower Chinookans was good. Meriwether Lewis wrote of people in the Wapato Valley: "they are fond of cold, hot, & vapor baths of which they make frequent use both in sickness and in health and at all seasons of the year. they have also a very singular custom among them of baithing themselves allover with urine every morning" (Lewis and Clark



1991:33). The ammonia in urine would be an effective cleanser, and both frequent bathing and the urine wash are noted elsewhere (e.g., Simpson 1968:103; Jacobs 1958–59:400; Jacobs 2003:92–93).

Refuse disposal was a problem, as it is with semisedentary people everywhere. Solid waste accumulated over time, and salmon-processing attracted flies (e.g., Henry 1992:624, 702). Regular seasonal movements—from winter villages to warm-season camps—were a major way of dealing with this problem. Several sources describe abandoned winter villages infested with “fleas” (e.g., Lewis and Clark 1990:142; Cox 1957:76; Ross 2000:99; Simpson 1968:62). From the standpoint of disease transmission, however, lice were a bigger problem and the real parasitic villains among precontact Northwesters. Myths from the Kathlamet and Clackamas give complete inventories of lice varieties and their characteristics, and “greyback” (body) louse was a myth character (Boas 1901:12–13; Jacobs 1958–59:394–95). Lice were removed manually (e.g., Ray 1938:153–54; Jacobs 1958–59:340) or in the heat of the sweat lodge (Boyd 1999b:285–86).

## TRADITIONAL CURING

Clackamas Chinook recognized three broad classes of curing: minor ailments, treated by natural medicines; aches and pains and minor fevers, treated by sweating in sweat lodges; and more serious problems, handled by specialized curers in ritualized treatment sessions. The first class included “cuts, infections, burns, and broken bones,” dealt with by “poultices, herbs, and splints” (Jacobs 1959a:14). Willapa Bay people had several more specific medicines, including teas and grease ointments (Swan 1972:178). Herbalists were said to be mostly women (Ross 2000:97).

Sweat bathing was seldom mentioned below Kathlamet, but all upriver Chinookans practiced it. Although Emma Luscier described two types—a plank structure and a willow-branch “beehive” oven—the second is the only one clearly defined in the historical records. David Douglas’s 1825 description of sweat baths downriver from Vancouver is the best we have (1959:114–15). The sweat lodge was made by digging a hole, one to three feet deep and five feet in diameter, on a river or stream bank and covering it with a round frame of willow sticks and “turf” or mud. Hot stones were added to the hole (apparently not heated in place), and the occupant (rarely more than one) entered with a bowl of water, which he poured over the stones to make steam. After remaining in the enclosure for from 15 minutes to an hour, or until he was

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“parboiled,” he ran out of the lodge and jumped into the cold water. Sweating, which removed body odor and “purified,” was done before hunting and as an adjunct to several ceremonies. Although sweating and the cold plunge worked well with prewhite aches and minor fevers, the treatment could be deadly with introduced febrile diseases.

Curing ceremonies conducted by shamans—“curers,” “medicine-men,” “Indian doctors”—were, like head flattening and canoe burial, unusual and fascinating to Euro-Americans. Including ethnographic recollections, there are over 20 accounts from the Lower Columbia Chinookan area. The best—from Gabriele Franchère, Joseph Frost, and James Swan—are based on or describe a single curing session. Franchère’s (1969) 1811 account is the earliest and most concise and can be used as a template to describe the elements of the curing procedure.

As soon as an Indian feels indisposed . . . the medicine man is called and, having received a present, begins his operations as follows: The patient lies on his back with his family and friends gathered about him, each holding a long stick in one hand and a shorter one in the other, the medicine man intones a lugubrious chant and the others take up the same tune beating time on their sticks. . . . the medicine man goes about curing the patient, kneeling beside him and pressing with both fists against his stomach. . . . At the end of each verse or couplet of the song, the medicine man joins his hands, brings them up to his mouth and blows, repeating often until, having spat out of his mouth a small white pebble that he has hidden in it in advance, he shows it triumphantly to all. . . . [and] blow[s] the sickness into the fire. (102–3)

Shamans had obtained a spirit power (or several) that gave them the power to cure. They normally endured long and difficult quests to obtain these powers and did not begin curing until later in life. Two sources indicated that there were special initiation dances for shamans during the winter ceremonies (Emma Luscier merely noted the initiation dance; John Wacheno actually described one). Chinookan people also believed that with the power to cure diseases came the power to cause them. So, an evil shaman was commonly assumed to have sent the object/spirit intrusion, and fully half the sources noted that this belief frequently resulted in the killing of an alleged disease-causing shaman.

Curing ceremonies always took place indoors and were attended by fam-



ily and friends of the ill person. The patient reclined on his back, on mats, sometimes elevated. Shamans were invited to cure, usually by messengers, and could decline treatment after giving a preliminary diagnosis. They normally began by singing, accompanied by the audience, who beat wooden poles on the ceiling and sang. Lower Columbia Chinookan sources do not address the timing of sessions, but they probably were more flexible than elsewhere in the Northwest, where they took place at night and for several nights in succession. Some sources described the building tension of the audience and the frenzy of the shaman, which suggest lengthy sessions.

How a shaman cured depended on his diagnosis. Chinookans believed that the more serious, potentially deadly ailments had supernatural causes. The most frequent was what anthropologists call “object intrusion”—that is, the entry of a foreign object-cum-spirit—usually sent by a malevolent outsider such as an evil shaman. In the Lower Columbia Chinookan area, the object was removed most often by pressing on the torso, as Franchère describes (sources also indicate that contact ranged from passing one’s hands over the body to kneeling on it). Less frequent, but still common, was the “sucking cure,” in which the shaman placed his mouth on the affected area. Both of these procedures resulted in the production of some small object, either in the mouth or the hands, which was quickly displayed to the audience and then disposed of. The sources list white pebbles, shells, pieces of bone, feathers, skin, or a “bug” (according to Wacheno, as the object was perceived to be animate), which rarely were accompanied by pus or blood if produced from the mouth (see also Jacobs 2003:159). The object might be thrown into the air with a quick movement of the hands, tossed into a fire, or dunked in a container of water.

Less commonly reported but apparently present throughout the Chinookan area was the belief that some diseases were caused by the loss of the soul, which had to be retrieved from the Land of the Dead by shamans or their spirit helpers. In the elaborate Spirit Canoe ceremony, soul loss and retrieval are well documented and often thought to be characteristic of neighboring western Washington Salishan peoples. A simpler form is reported in both river-mouth and Clackamas Chinookan sources, so it was probably typical of the Lower Columbia as well. Silas Smith (1901), who was half Clatsop, described the ceremony this way:

They believe that when a person becomes very sick the spirit leaves the body and seeks the shores of the spirit land, and unless it is recaptured and

returned to its original tenement, the person will of course surely die. In such cases the services of a skillful tamanawas doctor are engaged, and an assistant is furnished to accompany him . . . to the land of the dead. The assistant is given a baton, ornamented in the upper part with plumes of birds and claws of beasts. The doctor manipulates his assistant until he has him mesmerized; also the baton, which is in a constant state of agitation; he then places himself in a trance state, meanwhile keeping up a vigorous chant, and they start on their excursion to the shadowy shores. . . . If they should be fortunate enough to find the absconding spirit, the doctor secures it and brings it back . . . restoring it to the patient. (260-61)

In the Puget Salish Spirit Canoe ceremony, an actual canoe was employed, and a bevy of shamans acted out the trip and soul recovery. Although Cultee spoke of “three or four seers . . . who go and visit the guests” (Boas 1893:39) and an 1840s source reported “priests” who “retire into a canoe to hold a consultation” (Dunn 1844:91), no Lower Columbia source describes a real Spirit Canoe ceremony. References to “mesmerism” (hypnotism), however, occur often in Chinookan spirit-dancing accounts. The Nehalem Tillamook description of soul retrieval, for example, has the shaman “lie dead” for a day (Jacobs 2003:169). A myth told by Charles Cultee (Boas 1894:158-60) and notes from Mrs. Howard (Jacobs 1958-59:516, 1959a:14) simply mention soul retrieval. Unlike object/spirit intrusion, soul loss was attributable to ghosts or errant souls, so shamans were blameless and shaman killings were not associated with it (Gibbs 1955-56:136).

## POSTCONTACT DISEASE HISTORY

Before contact with whites, Lower Chinookan peoples had a “disease pool” of several chronic, not very contagious ailments that persisted in individuals and a curing system consisting of herbal treatments, sweat bathing, and shamanistic curing sessions. Although based on a theory of supernatural causation, the curing system nevertheless helped ameliorate minor ailments and, for those it could not cure, provided some psychological closure. There is no evidence that curing practices made any disease situation worse.

As soon as Euro-Americans arrived or their influence was felt on the Lower Columbia, however, the system was thrown out of balance. New diseases appeared, and the indigenous curing system was unable to deal with them. There were several epidemics, people died, populations dropped. What



happened to the Lower Chinookan people in the first century of contact was a local example of what is now called the Columbian Exchange (Crosby 1972), the interchange between the Eastern and Western hemispheres of plants, animals, peoples, technologies, and disease-causing microorganisms that followed Christopher Columbus's 1492 landing in the Americas. Of the 10 most prominent and virulent diseases generally accepted by historical epidemiologists as making the voyage from Eurasia and Africa to the Americas (Boyd 1999b:table 2), four of the deadliest—smallpox, malaria, viral influenza, and measles—were documented on the Lower Columbia. Whites also brought tuberculosis and venereal syphilis, found elsewhere in Native America, to the Lower Columbia (Table S11.2 online). Though the Chinookan peoples survived, the cumulative impact of this onslaught on their numbers and cultural traditions was devastating (see Boyd 1999b). Here, I will summarize what we know from the Lower Columbia, emphasizing the two most important diseases, smallpox and malaria.

### *Smallpox*

The first imported disease to arrive among the Chinookan peoples was almost certainly smallpox, one of the most deadly and contagious diseases that affect humans. Three epidemics are documented among Lower Columbia Indians, but there may have been more. Smallpox is caused by a virus and spreads by face-to-face contact, usually through a sneeze ("droplet infection") or by touch, rarely through objects. The disease follows a predictable pattern of about 10 days latency, followed by a rash on the extremities that spreads and develops into lesions, during which time the carrier is infectious. An average 30 percent of those infected die after about a month, while the remainder, often with pockmarks, survive and become immune to reinfections. Smallpox vaccine was rare and largely unavailable in the Northwest during the presettlement period.

In February 1806, Meriwether Lewis recorded the first evidence for Chinookan smallpox: "The small pox . . . prevailed about 4 years since among the Clatsops and distroy several hundred of them. . . . I think the later ravages of the small pox may well account for the number of remains of villages which we find deserted on the river and Sea coast" (Lewis and Clark 1990:285). Two months later, in April, near *ničáq"li* (the Blue Lake village), William Clark wrote: "an old man . . . brought foward a woman who was badly marked with the Small Pox and made Signs that they all died with the disorder . . . which



She was verry near dieing with when a Girl. from the age of this woman this Distructive disorder I judge must have been about 28 or 30 years past" (65). Two epidemics are noted here, the first (using Clark's calculations) in 1776–78, the second in winter 1802. These dates are supported by records from other parts of the Northwest, suggesting regional epidemics, not just local outbreaks (see Boyd 1999b:ch. 2).

There is considerable controversy over the exact date of the first recorded epidemic and the possibility that smallpox penetrated the Northwest earlier. One hypothesis holds that the first great American smallpox epidemic, brought with Cortez to Mexico in 1520, spread throughout North and South America (Dobyns 1966; Campbell 1989). Also, vessels from smallpox-source areas may have gone astray or been wrecked on the Oregon or Washington Coasts before the Spanish explorations of 1774–75. These include Sir Francis Drake's 1579 voyage on the *Manila Galleon*, which debarked annually from Acapulco starting in 1565 (Schurz 1939) and Japanese junks that wrecked several times on the coast in the 1900s and assumedly in earlier centuries as well (Brooks 1876). In 1900, Silas Smith, a grandson of Clatsop chief Coboway, recorded three traditions of pre-Robert Gray wrecks, including the "beeswax ship" and the wreck that left the metalworker Soto behind. Despite the intriguing possibilities, however, there is no hard evidence for disease introduction from any of these sources.

There is also controversy over the precise date of the earliest epidemic noted by Lewis and Clark, how far it spread, and how it got to the Northwest (Boyd 1999b:32–38). Since 1973, researchers have fallen into two camps: one favoring introduction by a Spanish coastal voyage of the 1770s (Cook 1973; Fortune 1989) and another claiming that smallpox spread in the early 1780s from the Plains through mounted Indian intermediaries (Harris 1994; Fenn 2001). A recently discovered oral tradition from just south of Chinookan lands gives added support to the coastal theory and the introduction of the disease in the early 1780s. It is not a definitive answer, however, and it may well be that smallpox entered the Northwest at approximately the same time from both directions.

In 1845, settler John Minto (1915) interviewed Cullaby, a Clatsop man, aged about 50. Cullaby related a tradition that dated to the time of his grandparents' marriage, which would have been sometime between about 1765 and 1775. In Nehalem Tillamook lands, just south of Clatsop, people heard booms and saw fire at sea; on the beach, they found three corpses and a survivor with

red hair. The red-haired man stayed with the Nehalem and married a local woman. Then, in about 1782—recalled as a decade after the wreck and 10 years before the first ships entered the Columbia—another boat came close to shore:

Some of its people made a landing in small boats. When they went away, they left two sick men who soon afterwards died. Soon many of the Tillamook became sick in the same way. The disease caused their skins to turn very red and their faces to swell, making them almost blind. Many, many of them died, and the faces of those who survived were left spotted ever afterwards. This deadly sickness soon reached the Clatsops from the Tillamook people. (71)

The red-haired man died, too, but not before he warned the Nehalem to flee in small groups to the hills.

There is not much question about the origin of Lewis and Clark's second reported epidemic in the winter of 1801–2; it most certainly arrived via the northern Rockies route. Mortality was less, probably concentrated among nonimmunes under the age of 20 (Boyd 1999b:39).

Other than Lewis and Clark, evidence for the early smallpox epidemics comes from archaeology and from records of the Astorians. It is difficult to isolate, archaeologically, evidence of the smallpox epidemics from others that followed, but the likeliest example appears to be at the Sauvie Island village Clannarminamon excavated by the Oregon Archaeological Society in 1968, where “over 90 . . . skeletal remains were encountered throughout the entire excavation area at the same depth and all in complete disarray” (Jones 1972:182). This was the site where an 1812 observer reported that a formerly “very powerfull tribe” had been “reduced by the small Pox to 60 Men” (Stuart 1935:32).

Several years after the smallpox epidemics, the Astorians recorded how Chinookan peoples responded to what I call “a heritage of fear” in *The Coming of the Spirit of Pestilence*. There are two well-known examples. The first is the saga of the Cree-speaking female berdache Kauxumanupika, who accompanied explorer David Thompson down the Columbia in the summer of 1811. On the return trip, the explorers had to protect her because she had threatened Indians along the way with smallpox in order to extort furs from them. At Fort Astoria, fort head Duncan McDougall (1999) said: “if we had not



taken him [*sic*] under our protection from the moment he arrived, he would have fallen sacrifice to the dread they entertain of his power to introduce the SmallPox, which he very imprudently boasted of on his way down" (30). At The Cascades, Thompson (1962) had to reassure the people that the whites were not bringing "the Small Pox to destroy us" (367) and "2 Men of enormous Size to overturn the Ground &c" (earthquakes?). Upriver, the threats of Kauxumanupika may have spawned a religious reaction, which fed into the nativistic religions that arose in the mid-1800s (Spier 1935:25-29; DuBois 1938:8-9; Boyd 1996b:175-76).

The second event, supposedly carried out by McDougall himself, may have been inspired by Kauxumanupika, but its immediate impetus was the massacre of the crew of the *Tonquin* off Vancouver Island, which frightened the isolated Euro-American colony at Fort Astoria. McDougall brought together the headmen from both sides of the river and produced a small flask. He warned: "See here . . . in this bottle I hold the small-pox safely corked up; I have but to draw the cork and let loose the pestilence, to sweep man, woman, and child from the face of the earth" (Irving 1976:80). Concomly and the other leaders were cowed and did not attack the fort. Twenty-nine years later, another American, John Dominis, threatened Native Americans, both on the Lower Columbia and off Cape Flattery, with "disease in a bottle."

Native American myths from the Lower Columbia and adjacent regions (Alsea and Lower Chehalis) contain a motif of a person who travels from village to village, with each visit followed by the death of all inhabitants. Myths are not history, but this certainly sounds like the effects of a highly infectious epidemic disease. One Chinook myth, "The Transformers" (Curtis 1970:116-23), has people dying after a woman laughs in their faces (droplet infection?); another, "The Sun's Myth" (Hymes 1975; excerpt in ch. 8 in this volume), contains elliptical passages that may refer to pockmarked skin. Both appear to be attempts to control and capture, through symbolic expression, the horrifying experience of the early epidemics.

Smallpox may have appeared on the Lower Columbia a third time, in 1824-25, though the sources are not clear. Concomly lost two sons and "8 individuals of his family" (Scouler 1905:277) during this time, and scattered references from other parts of the coast refer to a "mortality." If it was smallpox, it was reappearing every generation, claiming mostly nonimmune people born since the prior epidemic. In 1853, a final smallpox epidemic attacked surviving Chinookan communities, killing nearly 50 percent of the people at the river mouth and at The Dalles (Boyd 1999b:161-64).

## “Fever and Ague”

Smallpox, reappearing in waves among Lower Chinookans, was devastating, but worse—from the standpoint of suffering, number of casualties, and effect on cultural continuity—was a disease that first appeared in summer 1830 and that we now know was malaria. The disease was then known as either “fever and ague” (or shaking) or “intermittent fever,” after its most prominent symptoms, alternating fits of fever and chills (the term “malaria,” after its supposed cause, “bad air,” was not generally used before the mid-1800s). Cases of the fever had popped up on the Lower Columbia before 1830 (e.g., two members of the Astor Expedition), always imported from elsewhere. The Lower Columbia Chinookans believed that the disease was introduced by an American captain, John Dominis, and his ship the *Owyhee*, which sat at anchor off the lower tip of Sauvie Island for most of a year in an abortive attempt to capture the Indian trade from the Hudson’s Bay Company.

The *Owyhee* pulled anchor in mid-July 1830, and it was during that month that the first cases of “intermittent fever” appeared at Fort Vancouver. By month’s end, almost everyone at the fort had experienced fits, and the supply of medicine was exhausted, to be replenished in mid-August by the annual supply ship. We do not know whether Indian settlements were hit simultaneously or later, but August and September were apparently the deadly months. On October 11, in separate letters, fort head Dr. John McLoughlin (1941) wrote: “The Intermitting Fever . . . has carried off three-fourths of the Indn. Population in our vicinity” (88). At Fort George, botanist David Douglas (1905) wrote: “A dreadfully fatal intermittent fever broke out in the lower parts of this river about 11 weeks ago, which has depopulated the country. Villages, which afforded from 1 to 200 effective warriors, are totally gone” (202). McLoughlin’s “vicinity” probably referred to the Portland Basin, while Douglas’s “lower” river stretched from The Cascades to the river mouth. The two Multnomah villages and Cathlanaquiah, on the southeast and southwest shores of Sauvie Island, filled with corpses, were burned on order of McLoughlin to prevent further infection. Several members of Kiesno’s family expired, although he received medicine and survived. At the river mouth, Concomly died. Archaeological records of the devastation may be preserved at sites on Lake River and near Kalama, where clusters of human remains escaped the ravages of early artifact hunters (Kenneth Ames, personal communication, 2012).

There were two reasons for the great differential in mortality. First, the



whites had medicine—barely enough, it seems, for themselves—and with almost all personnel sick at the same time, they could not attend to Natives. Second, the Indians, without medicines, treated the alternating hot and cold spells with their own sweat lodge/cold plunge treatment, or “Maddened by fever” they “rush[ed] headlong into the cooling stream” (Ogden 1933:97). Both actions caused sudden death. The last new case of “intermittent fever” was recorded at the fort on November 12.

A century later, Victoria Howard recalled what her Clackamas mother had told her about the arrival of “fever and ague”:

they said, “The ague (fever and shivering) is on its way here. Dear oh dear!”  
... Soon but I do not know just how long after, then some one person got the ague. He lay with his back to the fire, he got only colder. . . . His whole body shook. So long a time and then it stopped. Now he got feverish, he got thirsty for water. They gave it to him, he drank it. So many days, and then he died. Then some other person too, and also I do not know how many others got the ague. Soon then a great many of them, I do not know how many. Their village was a large one, but they all got the ague. In each and every house so many of the people were ill now. They said that when they had fever, . . . they would run to the river, they would go and swim in it, they would go ashore, they would drop right there, they would die. . . . The (Clackamas) people died, I do not know how many. Only a few did not die. It (the epidemic of ague) quit even before they gathered them (the corpses that were lying around), they buried them. They were at last through with (burying) them all, and then they (the survivors) lived there. (Jacobs 1958–59:546–47)

Malaria recurred with remarkable regularity every summer and autumn after 1830, though with decreasing intensity. In 1831 and 1832, the disease took hold in July, peaked in early fall, and then tapered off with cold weather. In 1830, the disease was limited to the Lower Columbia, but in 1831 it appeared in the remainder of the Chinookan zone in the Columbia River Gorge to The Dalles and to the (non-Chinookan) Kalapuyan peoples of the Willamette Valley. In 1832 and 1833, it spread to southwest Oregon and the California Central Valley.

The Chinookan people of the focal area suffered most, experiencing not one but several annual back-to-back epidemics. People who managed to escape one year’s outbreak would be infected the next. Another geographic

characteristic was that fewer people were infected close to the ocean or in the dry interior. The HBC people saw these patterns and recognized that it was not a contagious disease spread by human contact—it was environmental in nature—but they thought it was caused by miasma, foul air associated with stagnant water and rotting vegetation (Ogden 1933:97).

Malaria, we now know, is transmitted by mosquitos that carry a parasite that invades blood cells, reproducing and causing them to burst all at once, producing fits of heat and cold and anemia. Once the parasite is in the blood, it can be picked up by a second mosquito and spread to other hosts. The malarial parasite appears to have originated in Africa and spread to the Americas after contact. Only one genus of mosquito, the *Anophelines*, carries malaria; *A. freeborni* is the Northwest representative, which breeds in stagnant water during warm weather. On the Lower Columbia, spring melts caused a June freshet, which backed water and debris into sloughs and lakes that began to decay with summer evaporation—an ideal mosquito-breeding environment. The treatment for malaria, quinine (distilled from cinchona, also called Peruvian bark), kills the malarial parasite; “powdered dogwood bark” was used as a backup in the Northwest to alleviate fever, but it did not cure the disease.

Until the late 1800s, the miasmatic theory held sway in Western thought, while Lower Columbia Indians uniformly attributed the origin of the disease to Captain Dominis of the *Owyhee*. Dominis, suffering in competition with the HBC for the Indian trade, reportedly had borrowed a leaf from the Astorians and had threatened the Chinookan villagers with a vial before opening it and releasing the fever (see, e.g., Lee and Frost 1968:108). There were variations on this theme at different places. In addition to or in place of the vial, for example, Dominis “hung up some bad sail in a tree” (a flag?) or threw “a parcel containing poison” into the river (Lee and Frost 1968:108). The disease was said to emanate from a shell attached to river survey sticks (Tappan 1854), glass trade beads (McWhorter, n.d.), or even smoke from the ships’ cannons (Clarke 1905:132). In the Chinookan mind, Dominis was acting like an evil shaman, and many of these items were functional equivalents to the bones, shells, or claws that they believed entered bodies and caused disease.

## POPULATION HISTORY TO 1854

There are several issues in Lower Chinookan population history: the size of the population at and before contact with Euro-Americans; the reasons for



and magnitude of subsequent decline; the rate and size of population rebound in the 20th century; and the amount and significance of intermarriage with Euro-Americans. Demographers like to point out that no census is perfect, even today. This was even more the case 150 to 200 years ago, and the problems multiply when trying to determine the population of seasonally mobile, preliterate peoples. Nevertheless, the population history of the early contact Chinookan peoples is one of the best known for a Native American group. President Thomas Jefferson asked Lewis and Clark to estimate Indian populations on their route, and they did so with what appears to be commendable accuracy. The Hudson's Bay Company took a census of the Northwest tribal peoples they traded with after 1824, and there was a great interest among Euro-Americans in the depopulation caused by the "fever and ague" epidemics. Finally, when government control was established and treaties became imminent, knowing Indian numbers became important.

Lewis and Clark's "Estimate of the Western Indians" (Table 11.1) is our benchmark for Columbia River indigenous populations. The explorers used several methods, especially house counts, and estimated lower-river numbers twice, probably in autumn 1805 and spring 1806. By comparison with spotty estimates preceding and following Lewis and Clark—the Vancouver Expedition's canoe-capacity estimates in 1792 and Robert Stuart's 1812 villages estimates of adult males—and with fever-and-ague loss figures, they appear to be quite reliable. The "Estimate" has two major characteristics: the numbers are large for preagricultural peoples, and there is great seasonal variation in village size.

In 1825, HBC Governor Simpson (1968) reported: "The population on the banks of the Columbia River is much greater than in any other part of North America that I have visited as from the upper Lake to the Coast it may be said that the shores are actually lined with Indian lodges. . . . the whole of the Interior population flock to its banks at the Fishing Season" (94). Lewis and Clark's first estimate probably approximates a core resident Chinookan population; their second estimate appears to include many visitors to seasonal fisheries (Boyd and Hajda 1987). For Chinookans from The Cascades to the ocean, the base total is 7,560; with fishery visitors, the estimate is 14,640. The actual Chinookan population was probably greater than the first estimate's minimum and perhaps two-thirds of the fishing season total, or up to 10,000 people.

But what was the precontact number? Here there is very little to go on. By 1805, Chinookans had already experienced two smallpox epidemics, one a

TABLE 11.1. Lower Chinookan peoples in Lewis and Clark's estimates<sup>1</sup>

NAME	ETHNICITY	ESTIMATE 1	ESTIMATE 2	DIFFERENCE
Sha-ha-la Nation	Cascades Chinookan (fishery visitors:	1,500	2,800	1,300 (46%)
y-e-huh Clah-del-lah	Northwest Sahaptins)			
Ne-er-cho-ki-oo				
Wap-pa-to Nation	Multnomah Chinookan	2,210	5,290	3,080 (58%)
Ne-cha-co-kee		100	100	
Mult-no-mah	(visitors: diverse)	200	800	600 (75%)
Clan-nah-quah		130	130	
Shotos	(visitors: Northwest Sahaptin)	180	460	280 (61%)
Quath-lah-poh-tle		300	900	600 (67%)
Cal-la-maks		200	200	
Cath-lah-cum-ups	(visitors: Athapascans?)	150	450	300 (66%)
Clack Star		350	1,200	850 (71%)
Clan-nar-min-a-mow		280	280	
Clan-in-na-tas	(visitors: Kalapuyans?)	100	200	100 (50%)
Cath-lah-nah-quiah		150	400	250 (63%)
Cath-lah-com-mah-tup		70	170	100 (59%)
[Clackamas] villages	Clackamas Chinookan	1,350	2,850	1,500 (53%)
Ne-mal-quin-ner		100	200	100 (50%)



TABLE 11.1 (continued)

NAME	ETHNICITY	ESTIMATE 1	ESTIMATE 2	DIFFERENCE
Clark-a-mus	(visitors: Molala?)	800	1,800	1,000 (56%)
Cush-hooks	(visitors: Kalapuyan?)	250	650	400 (62%)
Char-co-wah <sup>2</sup>		200	200	
[Cathalamet] villages	Cathalamet Chinookan	1,800	3,000	1,200 (40%)
Skil-lutes	(visitors: Cowlitz)	1,500	2,500	1,000 (40%)
Wack-ki-a-cums	(visitors: Athapascan)	100	200	100 (50%)
Cath-lah-mahs		200	300	100 (33%)
[Lower Chinook]		700		
Chin-nooks		400		
Clat-sops		200		
Kil-laxt-ho-kles <sup>3</sup>		100		
<b>Total</b>		7,500	14,640	7,080 (48%)

1 Based on Boyd 1999b:table 15. Lewis and Clark's original two estimates are in Lewis and Clark 1990:473-89.

2 In 1999, I excluded Char-co-wah on the basis of the "Ch," which is usual at the beginning of Kalapuyan (Willamette Valley) place-names. By location (above Willamette Falls, west bank), however, Chinookan is more likely; and since ethnographers at the turn of the 20th century considered the village "probably Chinookan" (Hodge 1971(1):235), it is here reinstated.

3 Listed in the "Estimates" as somewhere on the coast north of the Columbia, probably on the Long Beach Peninsula of Willapa Bay. In 1901, Franz Boas (1901:196) recorded Naqtxó'kl *naqšixiúkł* for North River, which is clearly related, and in 1905 he gave the Lower Chinook spelling of Kil-laxt-ho-kles as Gałá qstxoql *gałáqstxiuqł*, which is the same as Naqtxó'kl *naqšixiúkł* but with the prefix "people of" (Hodge 1971(1):688). So Kil-laxt-ho-kles appears to be a Lower Chinook name for "people of the North River" or, more broadly, Willapa Bay (Henry Zenk, personal communication, 2009).

few years before and the other a generation back. In 1999, I estimated an aboriginal number by starting with Lewis and Clark's base and assuming average smallpox mortality (30 percent in a "virgin soil" outbreak; less in the second) and no rebound (unlikely in a short time span), for a total of 13,968 in about 1770. There are many caveats, and the total was probably larger, perhaps significantly so. Starting with an 1805 base of 10,000 would raise the number, as would assuming a greater-than-average mortality in the first smallpox epidemic. Both are likely, so it is safe to assume a minimum population of 15,000 Lower Columbia Chinookans before white contact. To date, we have no other good methods of approximating aboriginal populations. Perhaps in the future, archaeological site counts, carrying capacity estimates, density comparisons, or some other method will help firm up this number.

Population decline from the first smallpox epidemics has to be estimated, but depopulation from the fever-and-ague years is very clear—and dramatic. We have both loss estimates and postepidemic numbers, and (allowing for some unreliable figures) they are consistent and match. In 1835, a visiting missionary said that "probably seven-eighths, if not, as doct. McLaughlin believe nine-tenths have been swept away" since the start of the fever-and-ague epidemics (Parker 1967:178). In 1841, Horatio Hale (1846), a member of the Wilkes Expedition, wrote: "the region below the Cascades . . . suffered most from the scourge. The population, which before was estimated at upwards of ten thousand, does not now exceed five hundred" (245). Portland Basin peoples were hit the hardest: "From the river Cowilitz to the falls of the Columbia 'Kassenow' claims authority. His tribe . . . has lost more than 2,000 souls by fever" (Slacum 1972:15). In 1837, there were 37 people at Kiesno's village, the only village near Vancouver that was still inhabited. Counts from 1841 showed 574 at the mouth of the river (Hudson 1841), 150–200 at The Cascades, and about 300 each on the Clackamas and the Columbia from Cathlamet to Vancouver (Wilkes 1925:296). Using Lewis and Clark's figures, there was an estimated Lower Columbia Chinookan decline of 82 percent from 1806 to 1841.

On the ground, these statistics translated into several things. First, abandoned villages were everywhere, particularly in the Portland Basin. In 1833, for example, Kalama "a few years ago contained two or three hundred inhabitants, but at present only its superior verdure distinguished the spot from the surrounding country" (Tolmie 1963:183). Second, Indian cemeteries were filled to overflowing. From the perspective of whites, an impediment to settlement had been removed (e.g., Wyeth 1973:149). From the standpoint of the Lower



Columbia Chinookans (particularly in the focal area), several local polities and families were gone; much accumulated cultural tradition, both in practice and in memory, was lost; and the few survivors suffered a palpable depression and fatalism. At Willamette Falls, for example, “after the fever had ravaged, people expect to die any day; and that is why, these poor natives say, they no longer take the trouble to build” (Landerholm 1956:81; see also Ball 1925:99).

In 1838 and 1851, two sets of censuses of local Chinookan groups—the first taken by the HBC, the second in association with the 1851 treaty negotiations—show internal trends in Chinookan populations. The first is a low percentage of children, indicating populations that were experiencing difficulties replacing themselves. In 1838, children made up 30 percent of 288 Chinooks and Clatsops (Frost 1934:58); in 1845, the local Methodist minister said there were fewer than 14 in a Chinook/Clatsop population of about 400 (Gary 1923:275). From 1851, two Chinook/Clatsop counts show another trend: intermarriage with whites. Of 279 Indians in one count, 17 were women married to whites, with 53 children among them (Gibbs 1851). The second count of 251 showed 54 “half bloods,” or 22 percent (Shortess 1851). Outmarriage, of course, was a Chinookan cultural preference; but with a diminished core population and a rapidly increasing white majority, there was a danger that the numerous mixed-blood children, especially those resident in white communities, would self-identify as white and be lost, culturally and biologically, to a continuing Chinookan entity.

After the 1847–48 measles and the 1853 smallpox epidemics, another census was taken of Lower Columbia Chinookan populations, which came in with a total of 525 (Boyd 1999b:table 17). This was the last period of major decline, and it was concentrated among Clackamas (78; measles the likely culprit) and peoples at the river’s mouth (279; smallpox). In 1902, Silas Smith recalled:

along in the 50’s, of my best judgment, there were about 500 full blooded Indians inhabiting the Columbia river from Point Ellis to what is known as Ilwaco now. . . . the smallpox epidemic was in the winter of ’52 and ’53 and a good many Indians were killed by that disease. I could not say how many. I will say that even after the smallpox, there were a great many Indians. I would not say there were less than 300. (US Court of Claims 1902:226, 242)

The “epidemic era” among the Lower Columbia Chinookan peoples ended in 1853, and, despite horrendous mortality, they had survived. In less than a

century, however, their population had plummeted from in excess of 15,000 to just over 500 survivors living on the margins of a culturally different and rapidly increasing non-Native immigrant population of 12,000 (Bowen 1975:181). Disease was the major engine of change among the Chinookan peoples in their first century of contact with Euro-Americans. In the second century and beyond, they had to deal with a new set of threats.

## REBOUND AND RECONSTITUTION, 1855–2011

With the passing of the 1853 smallpox epidemic, Lower Chinookan populations transitioned into a new period characterized by gradual rebound, extensive intermarriage with whites, and reconfiguration of tribal units. Because the Chinook Tribe was without government recognition, data on population numbers and trends are nowhere near as complete as they are for recognized tribes who fell under direct government supervision. This is true even for those Chinookans who were enrolled at multitribal reservations such as Grand Ronde and Quinalt, because separate records on tribal affiliation were rarely kept.

The best summary of population history after the 1850s is Stephen Dow Beckham's 1987 *Chinook Indian Tribe: Petition for Federal Acknowledgement*. Beckham reproduced family statistics from the 1880 and 1890 federal censuses in Pacific and Wahkiakum Counties, the special counts by Charles McChesney in 1906 and Charles Roblin in 1919, and tribal rolls from 1953 and 1987. Neither the federal censuses nor the special counts are complete, and the populations counted are not comparable.

Total counts for Chinook descendants number 187 in 1880, 289 in 1890, 124 in 1906, and 257 in 1919. In 1880, the five largest population centers in the two-county area were Chinookville, Wallicut, Brookfield, Cathlamet, and Bay Center; in 1890, they were Bay Center, Ilwaco, Brookfield, Cathlamet, and Nemah. Three names appear on both lists, a discrepancy that represents either an undercount or internal migration—probably both. The most notable characteristic of the 19th-century census sample is the large number of Indians married to white settlers and the large number of half-blood children. In 1880, 21 Chinook women were married to white men (no Chinook men were married to white women). They had a total of 61 children; and out of the total population of 187, at least 121 (65 percent) appear to have been half or quarter blood. The Wahkiakum County population was more heavily mixed, with several half-blood women married to whites, with quarter-blood



children. The trend of Native women espousing white settlers, in place since 1811, continued and intensified as the white settler population increased in numbers and proportion to the diminished Indian communities. A second trend, which began early but does not show in the two county censuses, is that many Chinook women who married white men moved away from their aboriginal homeland. A third trend, which intensified nationally in the century after 1854, was for offspring of less than half-blood to no longer identify as Indians and no longer to report themselves to census takers as being of Native American descent.

Nationally, Native American numbers reached a nadir just after the turn of the 20th century. Then, first with improved health care on reservations and by mid-century with an increased willingness to recognize Indian ancestry and identify as such, Native American populations began a dramatic rebound. After World War II, Indians began to migrate to urban areas, a trend that shows clearly in the 1953 Chinook tribal roll.

Membership in the Chinook Tribe today is determined by annuity payments or by demonstration of descent from an ancestor named on the McChesney or Roblin lists. In 1953, of 978 enrolled Chinook, the largest communities were Bay Center (93 members), Astoria (91), and Taholah on the Quinault Reservation (64). In the 1987 roll, membership had doubled, to 1,980, and members were concentrated in the Portland metropolitan area (143), South Bend/Raymond (108), and Longview/Kelso (108). Bay Center remained the most heavily Chinook community, with 62 enrolled members.

In 2011, the population of those with Lower Chinookan ancestry and who self-identify as Chinookan is large and on the way to recouping the dramatic losses of the first century of Euro-American contact. The Chinook Tribe—incorporating descendants of the river-mouth Chinook, Clatsop, Wahkiacum, Kathlamet, and Willapa peoples—has 2,910 enrolled members (Chinook Tribal Office, July 2011). The membership of the Shoalwater Bay Tribe, largely Chinook but with Lower Chehalis blood as well, numbers 360 (Tony Johnson, personal communication, 2011). Some Clatsops are enrolled in the Clatsop/Nehalem Tribe (total 200), nearly all of whom have some Clatsop ancestry (Douglas Deur, personal communication, 2011).

Determining Chinookan proportions at the two large multitribal reservations where they have a significant presence—Quinault and Grand Ronde—is difficult because of intermarriage and because separate figures are not kept. Judging from allotment records, however, about 40 percent at Quinault (Beckham 1987:157) and 15 percent (Willamette Falls and Cascades) at Grand

Ronde (Henry Zenk, personal communication, 2011)—1,157 of a total of 2,893 at Quinault and 780 of a total of 5,200 at Grand Ronde—are ballpark figures (enrollment figures courtesy of tribal enrollment offices, July 2011). Some people of predominantly Chinookan heritage are enrolled elsewhere. The classic case is the Cascades people, with descendants at Grand Ronde, Warm Springs, Yakama, and Cowlitz (see Williams, ch. 15 in this volume). All told, there may be 4,627 descendants of Lower Chinook and Kathlamet speakers and another 780-plus descendants of the Portland Basin Cascades, Willamette Falls, and Wapato peoples. As of the first decade of the 21st century, the Lower Chinook have recouped their contact-era losses, and descendants of the Portland Basin Chinookans, tragically diminished by the 1830s epidemics, are clearly still with us.