Lost Landscapes,
New Economies

An Alaska Anthology
Interpreting the Past
Edited by
Stephen W. Haycox and
Mary Childers Mangusso

Alaska, with its Indian, Eskimo, and
Aleut heritage, its century of Russian
colonization, and its peoples' formi­
dable struggles to wrest a living from
the North's isolated and harsh envi­
ronment, has long captured the
popular imagination. In this book, 25
contemporary scholars explore the
region's pivotal events and major
players, Native, Russian, Canadian,
and American.

Paperback, $24.95

Northwest Passage
The Great Columbia River
William Dietrich

"An engaging case study of a whole
bundle of environmental and social
issues (pollution, hydropower politics,
Indian rights, resource economics) that
should matter to people all over the
country."

New York Times Book Review

"A wonderful, disturbing and
thought-provoking history of the
Columbia River, Northwest Passage
is a remarkable book, first of all in its
scope and complexity. Here is a fine
blend of natural history, of human
history, and of political history."

Washington Post Book World

Paperback, $17.95

Forest Dreams, Forest Nightmares
The Paradox of Old Growth in the Inland West
Nancy Langston

Foreword by William Cronon

" Arresting. [This book] is an in-depth
look at forest policy as applied over
the decades to a specific region: the
Blue Mountains of eastern Oregon and
Washington... [Langston's] analysis
is original and shrewd."

Washington Post Book World

"A major study—part mystery, part
cautionsary tale."

New York Times Book Review

A Weyerhaeuser Environmental Book
Paperback, $16.95

Available from your local bookstore or call 1-800-441-4115

UNIVERSITY OF WASHINGTON PRESS
P.O. Box 50096, Seattle, WA 98145-5096 • 1-800-441-4115
From the Editor 2

History Commentary 3
Looking to the future through the lens of history.
By William Dietrich

Preparing for the Unthinkable War 7
Were Cold War civil defense preparations in the Pacific Northwest equal to the threat of nuclear attack?
By David Ballard

Log Chutes of the Pacific Northwest Coast 14
Enterprising lumbermen devised an ingenious method for transporting fresh-cut timber.
By David H. Davis

History Album 19
Tribute to a “throttle artist.”

Potatoes: A Washington Tradition 20
The lowly spud ranks high on the state’s list of agricultural successes.
By Jacqueline Williams

The Nicolas Point Drawings 24
This little-known body of work provides a unique pictorial record of Northwest Indian life in the 1840s.
By John C. Ewers

“Psychiana” Inc. 31
A look at the man behind the world’s largest mail-order religion.
By Keith C. Petersen

From the Collection 37
“A Mule Fest”: history in a handbill.

Hanford’s Pac-Men 38
Five chemical processing behemoths whose decommissioning costs threaten to gobble the Department of Energy’s budget.
By Michele S. Gerber

Columbia Reviews 44

Additional Reading 46

FRONT COVER: Woman’s dress, Plains (Blackfeet) or Plateau, collected by Peter John De Smet, S.J., 1859. This dress was one of several presents sent by De Smet to Belgian relatives and patrons following the meeting in 1859 between General Harney and Plateau chiefs at Fort Vancouver. The cut of the yoke, the pony-bead circles at the shoulders, and the woven hem line all suggest Blackfeet manufacture. See related story beginning on page 24. BACK COVER: Sheet music issued by the Northern Pacific Railway Dining Car Department, c. 1910. The song consisted of three verses and the chorus line: “For your breakfast dinner or lunch, on the N.P.R.R. in the Dining Car, Get a Great Big Baked POTATO.” See related story beginning on page 20. (Special Collections, Washington State Historical Society)
WHEN THE CITIZENS of Washington celebrated the opening of the new Washington State History Museum, with its comprehensive exhibition chronicling the history of the state from antiquity to the present, there was one more reason to celebrate—the launching of an exciting and ambitious program of temporary exhibitions. The museum opened in August with the inaugural temporary exhibition, “Sacred Encounters: Father De Smet and the Indians of the Rocky Mountain West.” This award-winning exhibition, on view for the first time in Washington, tells the heart-rending story of the collision of two sacred worlds—that of the Salish-speaking peoples of the Columbia Plateau and the European Jesuit missionaries.

The story unfolds in the 1840s when a recently ordained priest, Father Pierre-Jean De Smet, answered the call of the Salish-speaking Flathead Indians to establish a mission and live among them. This unusual request had its antecedents as much as a century earlier when Euro-American-introduced diseases decimated the Salish-speaking tribes and settlers pushed Indians farther and farther west, resulting in bitter wars between the Blackfeet and the Flatheads for access to buffalo herds. In the midst of this upheaval, the Salish prophet Shining Shirt foretold the arrival of fair-skinned men wearing long black robes. According to the prophecy, these men would bring peace and teach a new moral law, but their coming would also signal the beginning of the end for all people who then inhabited the land. Upon learning through trade contacts of the existence of such men in the east, the Salish sent four separate delegations to request a priest to teach them the ways of the “black robes.” What the Salish could not anticipate was how this action would quicken the pace at which they would be introduced to and forced to assume a new way of life that touched every aspect of their being.

The story of this encounter is one that reverberates into modern times. The Salish did not disappear, despite tremendous suffering and adversity, including being forced to cede their homelands in exchange for reservations. Nor were they absorbed into the “mainstream,” despite many conscious efforts toward this end. Instead, they survived with a unique identity, culture and history that is celebrated in this exhibition.

In this issue of Columbia, John Ewers’s article touches on the efforts of Father Nicolas Point—one of Father De Smet’s missionary associates—to create an ethnographic record of the Salish way of life at the point of contact between the two vastly differing cultures.

—Patricia Blankenship, Director of Museum Services
By William Dietrich

EDITOR’S NOTE
This essay was given as a talk at the Pacific Northwest History Conference in Corvallis, Oregon, on April 20, 1996.

I AM NOT A professional historian but a journalist. Yet when I tried to write a largely contemporary book about the Columbia, the river sucked me into its past, convincing me that its present was the product of its yesterdays. So rich was the Columbia’s past that I soon found myself in mid-current, certain I could be swimming in its history for the rest of my life. I eventually thrashed madly to shore and pulled myself out as a product of time—both its history of development and the deep time that came before.

I am not a specialist but a generalist: my job is not to know a lot about any one thing so much as to know a little bit about a lot of things, and try to draw connections among them. I would hope my book about the Columbia River, *Northwest Passage*, would not be mistaken for the Platte River—a mile wide and an inch deep—but it was a deliberate effort to look at the Great River of the West across a range of subject matter, hoping to understand the past in order to draw contemporary lessons from it. *Northwest Passage* is not a particularly optimistic book, and certainly has no glib answers to complex problems. In one sense, though, it is a conservative book—conservative in the sense of recognizing the need to conserve vanishing resources and conservative in urging caution about headlong change: that the lesson of Northwestern development should be one of humility, that progress brought not just triumph but unnecessary cost, and that if we had it to do over we would probably develop it more slowly and carefully, trying to correct the environmental mistakes of the last dam or pulp mill or aluminum smelter before building the next.

If journalism is the first quick brush of history, then history is in a sense a more complete journalism, a journalism that includes the embarrassing corrections tucked away on page two, the follow-up stories, editorial, letters to the editor, and even a bibliography and index. Despite such seemingly enviable completeness, history fascinates me in its room for contemporary interpretation. Interview a dozen people at a current event about what happened and you will get a dozen slightly different stories. It is the joy and anguish of the journalist to get to pick among them and declare with authority, in print, with your name attached, that this is what happened.

I hoped history might offer more certitude, given the benefits of hindsight and time; but, if anything, the historical profession seems worse. Not only do written accounts of the past frequently disagree with each other, they are often fragmentary, incomplete, and you can’t call the source up on the telephone to clarify a vague point. It fascinated me that even so simple a question as, “How long is the Columbia River?” had so many answers, depending on when and how it was measured and who was doing the measuring. Determined at least to pin this down, I even interviewed the authorities at the U.S. Geological Survey who supposedly oversee this kind of thing. They responded with reams of inconclusive papers and I finally had to give up: I waffled with “about 1,200 miles.”

What is left, then, after such decisions, is story: a story of the past told through present-day eyes to shed light on future questions. *Northwest Passage* is my story of the Columbia, as accurate and yet as idiosyncratic as I could make it; and I benefited hugely from the keen eye of professional historians and the observations they drew.

One of the themes of my book is that the development of the Columbia is an example, even a metaphor, for the development of American civilization. The technical brilliance of harnessing the Columbia, and the resulting environmental, cultural and spiritual loss, is simply one of the most dramatic examples of what has been a recurring theme of American history—the desire to reinvent ourselves in the wilderness, and the simultaneous desire to remake the wilderness like ourselves.

This conflict of desires between the natural world and human artifact is a persistent and central strain in our society that in recent times has been reflected in many environmental battles and experiments with new societies, from post-World War II suburbs to 1960s alternative communities. I would propose here that this ambivalence towards wilderness is, in fact, a central theme of world history: that the bargain we struck 10,000 years ago when we began giving up hunting and gathering for the rewards and pitfalls of civilization has created a persistent tension between the human intellect and our evolutionary instincts. It was a trade, not simply an advance.

As a youth growing up I would read about the horrific depredations of the Huns and the Mongols and wonder what would possess barbarians to lay such complete waste to the clearly superior civili-
Ours is a restless species of which Americans are the epitome of restlessness, and in which discontent and yearning are fundamental values. We see unhappiness as a sign of intelligence. We read with fascination the accounts of those captured by the Indians who went native, or the survivalists who escape to the mountains today. We are fascinated by the Unabomber’s insane rationales and the mythic tale of a brother driven to both support and betray him. We move to places unspoiled, hoping we won’t despoil them and yet building a replica of what we came from. This, I think, helps explain what happened to the Pacific Northwest—how a new culture encountered one that had lived on this land for 11,000 years and, in the space of two centuries, transformed the land it seized in ways we did not fully intend.

The history of the Pacific Northwest is recent, and because it is so new it has played out against a unique backdrop of world events. The discovery of this part of the world roughly coincided with the beginning of the Industrial Revolution, and its development was closely tied to the machines of that revolution—from the sailing ship to the steamboat to the railroad to the electric motor to the car, airplane, atomic bomb and computer. Lt. John Mullan recorded in 1858:

Night after night I have lain out in the unbroken forests... or the pathless prairie, with no bed but a few pine leaves, with no pillow but my saddle. In my imagination I heard the whistle of an engine, the whir of machinery, the paddle of steamboat wheels as they plowed the waters. In my enthusiasm I saw the country as thickly populated, thousands pouring over the borders to make homes in this far distant land.

Our history is very much a technological one; the Northwest was invented because it is the product of invention. The Columbia was dammed as soon as it was technologically feasible to do so: the dams needed not just the correct engineering principles developed first in France but the machines to dig and pour, the electricity to create a demand, and the generators and power grid to fulfill that demand. This process continued with the development of Boeing and Hanford, and accelerates today with new chip plants in Portland and Beaverton.

The technology explosion has been matched; it is both caused by and is the cause of the human population explosion, clearly the most profound thing to happen to this planet since the Ice Age. Between the time of the founding of Fort Vancouver and completion of the last major dam on the lower Snake River, world population grew four times, from 1 billion to 4 billion people. We witnessed in that 150-year period mass migrations to eclipse those barbarian migrations of the ancient world—an immense shifting of peoples that brought waves of whites, Hawaiians, Chinese, Japanese, African Americans and Hispanics to share this place with its original inhabitants. This, too, is still going on. The Seattle Times newsroom has become something of a rainbow. The physician’s assistant at my doctor’s office has an Ethiopian name. The world presently has a net population gain equal to that of the city of Seattle every two days.
The state of Washington is projected to add 100,000 people a year for the next 15 to 20 years: as many people in three and a half years—in ONE state—as ALL the Americans who migrated West by covered wagon between 1840 and 1869. And one need only drive through some of the 'hoods and barrios of large Western cities to see that this Great Migration is producing its own kind of Wild West, just as tumultuous, terrifying and fascinating as the old one. The history of the West is not a thing of the past, nor has it stopped—indeed, it is accelerating. The only comfort, if it is one, is that we have seen much of this before.

We all know that development and progress are mixed blessings. I thank God I live in the late 20th century every time I go to the dentist or take a hot shower. But our century has also been a dark one of titanic wars and political conflicts and terrifying weapons, and the early Industrial Revolution produced horrific pollution and stifling slums. Urbanization seemed as much a corruption as a blessing; by the early 20th century there were misgivings about its effect on the American character. Sam Hill, the dreamer who built Maryhill, echoed already-popular sentiment when he said:

I believe in man on the land. We cannot afford to have our producers leave the land and come to the city and become parasites. We want our girls to stay on the farm and become the mothers of a virile race of men and not just go to the city and become manicurists, stenographers, and variety actresses. We want our boys to stay on the farm and not succumb to the lure of the Great White Way or become chauffeurs or clerks.

At the dawn of the 20th century the muckrakers were exposing the world of New York City slums, Pittsburgh was choked with 14,000 smokestacks, London was shrouded in what occasionally became killer smogs. We were in the newest of the new world did not think we would repeat the mistakes of less fortunate places; we had a solution to the mistakes of the past—the solution of technology.

Irrigation could turn waste into Eden. And electricity could free Pacific Northwesterners from the shackles of growing urbanization. If energy could be generated at a central facility such as a dam and delivered virtually anywhere by wire, what need was there to be corrupted by the big city! Its most essential commodity—energy—could be dispersed. Combine desert farming with hydroelectricity and the yeoman farmer, whom Thomas Jefferson considered the foundation of democracy, could again flourish. Government and technology could combine, through giant engineering projects, to produce a new individualism, a homesteading independence reminiscent of the earlier American West. Grand Coulee Dam would save us from both the vagaries of the weather and the puppet control of Washington, D.C., and Wall Street. Industry could disperse across the new web of electrical wires; farmers could develop new, small, intensive irrigated acreages; and the automobile could cut the umbilical cord of the streetcar.

This was such a powerful myth that it still sustains itself: across eastern Washington and Oregon, the people most dependent on government intervention for their success tend to be government’s loudest critics. The proud products of a benevolent socialism see themselves as examples of unfettered capitalism. It is a myth politicians play to, but one of serious consequences because it hampers our ability to think clearly about what we’ve done to the Northwest or choose wisely among our future options. Before we can decide what kind of life we want in the future, we have to be clear about what led to the lives we have now. That is the job of the historian.

We’ve all seen the Utopian cities drawn in the 1930s, of towers plopped across a green landscape and linked by freeways or even personal airplanes. They look a bit nightmarish today, and terribly artificial, but at the time technology promised a rescue from the hardships of the Great Depression. It was not going to enslave us but liberate us, and no part of the country was—or is—on the cutting edge more than the Pacific Northwest. Then it was electricity, irrigation, aluminum and plutonium; now it is computer chips, software, medical instruments and genetic engineering.

Well, ruling technology proved to be as problematic as ruling one’s spouse or children. The future became less a march of liberation than a dizzying dance of chaotic possibility. Yeoman farms became hopelessly uneconomic and corporate farming took their place. The car granted one kind of freedom in turn for a new kind of fealty and now consumes more land area in our cities than people do. The dams created new industries but destroyed old ones and old cultures. Industry did not disperse but concentrated in strip corridors linked by freeway. What still counted, it seems, was proximity to people: related businesses, a work force, and amenities to sustain that work force. The predictions were both right yet hopelessly
wrong. In our earnest efforts to use technology to preserve rural values in the Pacific Northwest, we ensured that the region would be urbanized. As John Lennon observed, “Life is what happens to you when you’re making other plans.”

This story is essentially the story of my book Northwest Passage, and I’m not going to recount it in detail here. Rather we should ask why this story, of all the countless stories history can tell, is worth recounting. Yes, technology is a bit of a Faustian bargain, but a bargain that most of us quite consciously would continue making, considering all the costs and benefits. Is there a lesson in this tale? As regrettable as the loss of the untrammeled Northwest is, was it not inevitable and even, dare we still admit, desirable? Is revisionist history of this development merely crabby and selective?

Well, the twin desires I spoke of before—for a natural world we feel a spiritual communion with and an artificial one we rejoice in whenever the temperature drops—are real, basic parts of human nature. So I think the lesson of Pacific Northwest history is one of imbalance, and the promise of the Pacific Northwest is that it is a place that still has the time and space and educated population to redress that imbalance.

I grew up with a self-congratulatory history of this region; I was taught that most of what happened here, save a few unsavory dealings with the Indians or a race and labor riot or two, was a chapter in a story of overall triumph. This triumph could be easily measured by two things any normal person can observe—progress and growth. Politicians were lauded for it, industries respected for it. This was a history of the happy ending; a wilderness transformed into the most powerful, progressive nation on earth. And that is a perfectly valid, and defendable, way of looking at our past. But it is very difficult to improve on perfection, and if history was quite so perfect it would leave very little for the rest of us to do. Besides, perfection, in human affairs, is in the eye of the beholder. It is the critic who prevents us from resting on our laurels; it is dissatisfaction that allows progress.

Fortunately, however, we now have a more critical history, respectful of the labors of our ancestors but unafraid to question the assumptions with the benefit of hindsight. Hindsight is not an embarrassing second-guessing, it is practical wisdom, the epitome of learning from our mistakes: the very purpose of history. So here are some lessons I think we can draw from our past.

One is that industrial and technological development imposes its own values, rather than preserving past ones. The development of the Columbia River did not preserve the family farm and rural values but instead helped accelerate the economic and social changes that forced them into eclipse: rather than allowing an escape from the city, it made city amenities—and city problems—geographically universal. The striking thing about Moses Lake to me is not its differences in scale from Seattle but rather its astounding similarities, from the names of its businesses to the problems in its schools. Technology should be respected for the positive things it does, but pretending change will combat change has so far proven to be naive.

Second is that development for development’s sake is a reflex, not a philosophy. The pawning of our farmlands, the butchery of our forests, the collapse of our fisheries in less than 100 years—the heels of a civilization that lived here in some equilibrium for at least 11,000 years—is not benefiting, over the long term, even the industries carrying it out. Subsidizing transportation or growth where it does not belong may soothe some regional egos, but it is enormously costly. And yet development is still virtually a religion in our political discourse. One hundred years ago there was a critical need for development, and 50 years ago there was room for knee-jerk growth. Today, the quantities of life are no longer synonymous with life’s quality. Our leaders must be required to think more clearly, and more carefully, about which future they are trying to achieve.

Third, speed of change is not necessarily a virtue. The tragedy of the development of the Pacific Northwest is that we gave ourselves no time to learn. Probably our greatest tragedy was that the aboriginal culture here was allowed—no, encouraged—to disappear before we had any time to absorb its wisdoms. Another was that we damned the Columbia so rapidly, and so heedlessly, that we gave far too little thought to preserving its historic fish runs and indeed any of its historic character. One can only wonder what our situation would be today if the last dams had not been added to the lower Snake, if smaller dams in the Grand Coulee region could have allowed fish passage, if at least a single great rapid had been preserved to fuel wonder, if we had more than the Hanford Reach as spawning habitat. One can only wonder what would have happened if all the dams had been designed on the architecture of Wells Dam north of Wenatchee, where the placement of spillway and power penstocks on top of each other seem to allow much easier passage of migratory salmon. My, we were in a hurry. And why? So we could turn the wilderness into a copy of what we had come West to escape.

And fourth, history is a guide, not a prison. The most remarkable thing about our pioneer ancestors was their dynamic vision, an imagination we seem to have difficulty summoning today. They imagined line new lives while we seem to struggle to define what would make us truly happy in this one. Their dreams need not forestall our own—we as Americans can imagine new relationships with the land. So much of what we have done here is good: husbandry of the land, preservation of scenic beauties, cleanup of our worst messes. This is still an inspirational landscape. But as long as we are content to only tinker with the artifacts of the past, not question our own history, we will be enslaved by the past. The new histories of the West are guides for new directions, and we should be open to them.

My Future Northwest would not turn its back on technology. It would not pretend that caring about a problem, such as disappearance of salmon, is the same as solving it. It would not pretend that the population and economic and cultural pressures of the outside world are simply going to go away. But it would use history as a tool. History would ask what this land was like. It would aggressively catalog mistakes so as not to repeat them. It would explore the Northwest as an idea—what people came, and will come here to find—and then imagine a future that allows them to find that. The story of our past would become a guide to our future. The Northwest would truly become a passage—a way to a sustainable future of balance on this planet.

William Dietrich is a science writer for the Seattle Times and Pulitzer Prize-winning author of The Final Forest. His most recent work is Northwest Passage: The Great Columbia River.
Preparing for the

UNTINKABLE
WAR

Civil Defense in the Pacific Northwest during the Cold War Era

By David Ballard

DURING THE Cold War, one diplomatic or military blunder on the part of the United States or the Soviet Union could have precipitated the most horrendous war ever seen. Early in the Korean War, when world tensions were high, Congress created the Federal Civil Defense Administration (FCDA), and states were urged to build their own civil defense departments to help the FCDA implement a national program. State legislatures in Washington and Oregon responded, funding civil defense programs to prepare for the moment everyone prayed would never come.
Civil defense leaders throughout the 1950s tried to find strategies that would protect civilians from the unthinkable war. They promoted duck-and-cover drills, vainly tried to obtain congressional funding for bomb shelters, and discussed spreading key industries and military bases across the country to make it difficult for Soviet bombers to hit these targets. In 1954 the nation began practicing evacuation of large cities, based on the assumption that there would be several hours’ warning prior to an attack. Intercontinental ballistic missiles quickly made that strategy obsolete.

Washington’s civil defense program was one of the most energetic in the country, earning praise for its preparedness from national civil defense officials. Under the leadership of former navy admiral Daniel Barbey and later Charles Rall, the Washington State Department of Civil Defense (WSDCD) held dozens of drills throughout the 1950s involving numerous state residents.

Washington had several key military installations, but regardless of the potential for being a Soviet target, citizen and government participation in civil defense exercises rapidly faded, and there was little that national or state officials anywhere could do to stop the trend. Operation Alert (OPAL), an annual national civil defense drill that created fictitious scenarios for civil defense officials to solve, began in 1954 with much civilian and government involvement. But by 1961 people everywhere had tired of civil defense drills. Civilian protests against the exercises grew louder every year.

In late April 1961 Stanley Earl, a Portland city official, chose to sit out OPAL and make a point while doing it. Prior to the drill he told reporters that he would show up for work but would definitely not join other city leaders at the Kelly Butte civil defense headquarters. Operation Alert, Earl told Oregonian reporters, was a worthless drill—a waste of time, money and manpower—most assuredly “not based on the realities of 1961 and [could] only serve to lull people into a false sense of security.”

The realities of 1961, Earl continued, were nuclear-tipped missiles hitting Portland in less than half an hour. Local civil defense officials, Earl contended, were lying to city dwellers by telling them that they would have 48 hours’ advance warning. When the alert began, Earl stayed in his office reading a book, Civil Defense: Billion Dollar Boondoggle. Then he went home and mowed his lawn. And why not? It wasn’t the real thing.

In the summer of 1961 the real thing almost happened. The Soviets and the United States squared off over the Western presence in Berlin. In the middle of the crisis, on July 25, President John Kennedy appeared on television to talk, in part, about civil defense. Prior to his speech Kennedy had concluded that family shelters were not fair because only those in higher economic classes could afford to build them. Low-income apartment dwellers and the masses jammed into urban areas were left out of the picture unless, of course, community shelters were built. Kennedy asked Congress for funds to build community fallout shelters in all new federal buildings and to stockpile them with food rations, picks, shovels, and any other tools that would help civilians dig out of the debris in the aftermath of a nuclear attack. Kennedy’s proposed civil defense program cost almost $300 million.

Frank Ellis, head of the federal Office of Civil Defense Management (OCDM), was optimistic about civil defense’s future following Kennedy’s speech, telling reporters he was seeing a “revival of survival.” But as reporters delved into the state of America’s civil defense, they discovered that things were still deteriorating. They found civil defense leaders encountering the same frustrations they had experienced for years. There was no panacea for protecting civilians from nuclear war. “Our civil defense posture?” one official rhetorically asked. “Flat on our backs.” No OCDM official interviewed could honestly tell how many cities, counties and states lacked civil defense programs or had allowed their readiness to lapse into disorganization.

The public’s confidence in civil defense was not much
better. A Gallup poll taken in August 1961 found that 83 percent of those interviewed believed their chances of survival in a nuclear war were poor or no better than even. Pool excavations outnumbered fallout shelter construction by almost 10,000 to one. Maybe there was no revival of survival for civil defense after all.

Across the Pacific Northwest, shelter permits increased following Kennedy’s speech. All kinds of companies “specializing” in fallout shelter construction sprang up everywhere, but as one Cedar Rapids, Iowa, building inspector pointed out, many shelters were so poorly built that they would collapse even under a sonic boom.

The growing interest in shelters provided a market for a wide variety of survival products. Some were totally ridiculous, like anti-radiation salve and fallout suits. There was more practical shelter equipment such as foldaway beds, compact electric kitchens, compact baths, and even battery-powered televisions. While the chance of “Gunsmoke” or any other commercial show being on after World War III began was extremely small, at least news programs could be seen.

A family could spend nearly $2,000 to equip a shelter. Merchants were not blind to this fact. Bob’s Hardware in Longview, Washington, unabashedly advertised shelter supplies on the entire back page of the Longview Daily in February 1962. “What a ghastly thing to advertise,” the ad began, “to sell items like these makes me feel like a grave-robber must feel . . . a sort of revulsion. However, let’s face the facts—a little preparation now could save our children and loved ones from a horrible fate. We would run into a raging fire if there was one chance in a hundred to save our children today. So why not prepare a little today for tomorrow?” Bob’s store offered blankets, sleeping bags, bunk beds, aluminum cots, water cans, canned heat, chemical toilets, flashlights and batteries, lanterns, stoves, and first aid kits. These seemed to be sensible products, but there was much more. What shelter could be a home without coloring books, story books, games and toys to keep the kids occupied over the days, weeks, or even months the family would have to live crammed into a shelter? Bob’s even sold an unusual device called the “Bendix Radiation Measurement Kit,” much like a Geiger counter, for $22.95.

But there was more for Pacific Northwest residents to fear than Soviet missiles. Washington and Oregon residents were shocked on Columbus Day 1962 when a storm, spurred on by Typhoon Frieda in the Pacific, slammed into their coastline. The tempest left 15 dead in Oregon and Washington and over $170 million in damages. It was a serious enough rain and gale that Seattle officials closed the World’s Fair. One Oregon farmer, at least, was thrilled that the wind had straightened his once-leaning barn.

When the storm struck, civil defense measures—the same ones that would have been used in a war—should have worked smoothly. They did not, and this caused ill feelings between civil defense people and residents. M. E. Cornelius, head of Kitsap County’s civil defense office, criticized residents for not being prepared for the storm, despite the advance warning. He was amazed that many people did not have candles or transistor radios and were out driving the streets when they should have been home. “One thing we learned from the storm,” Cornelius said, “was that regardless of how much warning we get, we don’t pay attention.” Some residents blamed Cornelius for the lack of preparedness, accusing him of not calling a civil defense alert for what he first called a little windstorm. The storm also severely strained Cornelius’s budget for the rest of the fiscal year.

Cornelius’s frustration didn’t end there. Quite a few people didn’t know where the local civil defense office was located, and many schools had no disaster plans. Things could have been worse. Cornelius could have been director of Portland’s civil defense office.

The Columbus Day storm caught Jack Lowe, Portland’s civil defense director, on vacation. The city had been hit hard, with over 160 injured. National Guard units were called out to stop looting, and just about all agencies, from the Red Cross to the Salvation Army, were there to help—every agency, that is, except Portland’s civil defense, and the Oregonian took a dim view of this absence.

“Where was Civil Defense?” an editorial asked. The timing was unfortunate for Lowe, who had worked hard to establish his organization. Not only did the storm cause loss of life and financial devastation, but civil defense funding was on the ballot in the November elections. Lowe’s public relations efforts were at a low ebb. Yet, just when things looked bleakest for Portland’s civil defense, hope emerged in a macabre way. A major international crisis in late October brought the United States and the Soviet Union back to the edge of war and rekindled civil defense interest across the Pacific Northwest.
The ability of the OCDM to protect civilians during times of nuclear war became a hot topic in October 1962 when United States intelligence discovered that the Soviets were placing offensive nuclear weapons in Cuba. Reporters had noticed the air of anxiety at the White House, but the Kennedy administration kept Americans and the rest of the world ignorant of Russia's activity in Cuba until Kennedy addressed the nation on the evening of October 22.

Four days prior to Kennedy’s historic speech, when only a few dozen Americans knew how critical the situation was becoming, the Department of Defense issued a directive that the public didn’t notice. The department ordered each agency responsible for the nation’s defense to prepare fallout shelter utilization plans for the military installations in its jurisdiction. The military was also to have first access to public shelters. “The public shelter spaces made available will be allocated to troops other than those required to sustain operations, and to civilian employees and dependents,” the directive stated. “An excess or deficit in spaces is to be reported to local civil defense
authorities." Had the missile crisis become a nuclear war, regular citizens would likely have been turned away from public shelters: Most Americans were never aware of this Department of Defense order.

Two days later Kennedy asked for a civil defense status report, and what he learned appalled him. There were about 60 million shelter spaces in 112,000 structures across America, but most had yet to be marked by the Army Corps of Engineers and the Navy Bureau of Yards and Docks. In Oregon owners were reluctant to cooperate with the OCDM and allow their buildings to house shelters simply because they did not want to provide space for the supplies the OCDM said needed to be kept in shelters.

The government had contracted to produce $80 million worth of emergency supplies, but little of it had gotten to warehouses. The OCDM also had only trained 2,900 volunteers in both shelter management and radiological defense techniques. In simple terms, the nation was still not ready for any type of nuclear war, and the question of whether it could ever prepare for such a calamity loomed large.

Washington's governor, Albert Rosellini, was a member of the Civil Defense Committee of the Governors Conference, along with governors Edmund Brown (D-CA) and Nelson Rockefeller (R-NY). They met with Kennedy at the height of the crisis and complained about the short time they had had to prepare some type of civil defense protection. As Rosellini recalled, committee members decided that about all they could do was encourage the states to find shelters. Prior to leaving for Washington, D.C., Rosellini had requested the state's civil defense personnel and National Guard to be ready for any emergency.

Washington's civil defense program was considered one of the best in the nation, but although years of evacuation drills had given the WSDCD headlines and accolades, the age of intercontinental missiles meant fallout shelters, something that wasn't a WSDCD strength. Twelve Washington secondary schools had built shelters as part of Future Farmers of America projects. In Seattle, 89 buildings qualified as shelters, but only one had emergency supplies. It was an inadequate situation and Post-Intelligencer reporter Stan Reed discovered just how confusing and defective the shelter program was when he visited Ballard High School during the missile crisis.

A front-page photo showed a group of sophomore girls standing in the school's small basement, which was crisscrossed with pipes. There were no supplies, and space allowed for only 120 people in a school of over 2,600 students and faculty. The school's principal had no idea where the school shelter was until he called the Seattle Public Schools civil defense coordinator. Lincoln High's principal also had to call the district office to learn that there was room under the school's gymnasium for 372 people. Lincoln was almost as large as Ballard High.

Lieutenant Colonel (Ret.) Roscoe Burr, the Seattle-King County civil defense leader, didn't seem worried when asked about the situation. "This should be adequate provision for sheltering those who must remain at the school," he said. "Most of the students will be sent home as soon as an alert is received." Rosellini also shrugged off Washington's lack of shelter preparedness. The state, he said, was ready in case of war and was ahead of the majority of other states. Frank Primozich, an OCDM official in the Everett office during the crisis, recalled that the state and region were not at all prepared to shelter civilians. There were not nearly enough shelters available, and individual shelters were scattered and few. Washington, at least, was the only state to have issued ration cards to its residents. Over two million were given out to Washingtonians, and as the crisis progressed, some who had lost their cards began searching for ways to acquire more.

Shelter construction in the state, according to some firms specializing in building the structures, increased because of the crisis. Spokane's civil defense office reported more phone calls following Kennedy's October 22 speech. "What is the
nearest air raid shelter to my home?" an elderly woman asked. "Do you really think this is serious?" Civil defense officials, who had no more idea what was happening than anyone else, told inquirers to be prepared just in case.

Spokane's civil defense readiness was in the same situation as Seattle's, especially regarding availability of shelters. There were buildings already designated as shelters, but few were marked for the public's knowledge because officials were still waiting for signs for be printed. Evacuation had not totally been abandoned in Spokane, either, as the Central Valley School District, during the crisis, tested how fast they could send the students home if an emergency occurred. "We were working with the county civil defense office," Gilbert Mills, superintendent at the time, recalled. "It wasn't our idea. Some people seem to get shook up no matter what. I thought a lot of it (civil defense drills) was a lot to do about nothing."

As some people went scrambling to find shelter space, the Grant Williams family of Angle Lake, Washington, saw an opportunity to rid themselves of 350 cans of water. During the Berlin crisis, they discovered that there were no effective rustproof water cans available to store the recommended seven gallons. The family immediately set out to remedy the problem. The Williamses made a deal with the Steel Container Corporation of Tacoma to produce a seven-gallon container the family called the "Williams Waterpak." There were 480 cans originally built during the Berlin crisis, but at the height of the Cuban missile fracas, 350 were still left in the family's crowded basement.

The Williamses had intended to use whatever profits they made to build a fallout shelter, but to recoup some of their $3,000 investment, they were selling the cans at four dollars a can or three for ten dollars. While the Cuban missile crisis scared millions throughout the world, the Williamses brought a bit of tongue-in-cheek humor to the ordeal by holding a "going-out-of-business" sale. They had alternative ideas to using the containers for their intended purpose. "They can be decorated and used as rustproof wastepaper baskets," Mrs. Williams said, "or they could be used for indoor or outdoor planters." The missile crisis, however, did not stimulte sales.

In Portland, interest in shelters and getting kids home from school was heightened. The crisis also inspired a dozen high school and college students to demonstrate against nuclear war. The "peace demonstrators" carried placards urging "Negotiation, Not Annihilation," and "No War Over Cuba," but news reporters outnumbered demonstrators. Passersby called the objectors "Commies," and one young man took time off from lunch to start his own counter-demonstration, carrying signs urging people to "Stand Behind JFK," and "Stand Up or Be Stood On." Another man walked through the crowd handing out business cards and telling photographers that if the demonstration got out of hand and their camera equipment got broken, he could have it repaired quickly.

Kennedy wisely chose not to push Khrushchev beyond the brink and, Khrushchev judiciously decided to remove the missiles, under United Nations inspection, and to halt construction of military bases. Kennedy agreed to lift the trade and weapons ban when the UN had acted, and also pledged not to invade Cuba. The crisis appeared to be over, but in Portland it had just begun.

Portlanders signaled their disenchantment with civil defense shortly after the missile crisis ended. They were asked on November 8, 1962, to approve $75,000 for Jack Lowe's civil defense operation to continue for another year. But the Columbus Day storm was still fresh in the voters' minds. The newspaper that had criticized Lowe's office a few weeks earlier now stood in his defense: "Portland's C.D. primarily is an educational rather than an action agency," an Oregonian editorial stated. "If an enemy attack comes, C.D. Director Jack Lowe is not going to clap on a tin hat and lead us all by the hand to safety. But over the years he has been trying to tell all who will listen how best we can provide in advance for our survival."
Many people agreed, but not enough. The tax measure was handily defeated, and Portland's civil defense program was put on hold. It was a prophetic moment, in a sense, because the rest of America's Cold War civil defense also was placed in limbo after the Cuban missile crisis. It was a symbolic confession of civil defense's futility against nuclear war.

More and more Americans began to speak out against the shelter program. A Cornell University survey found that only one percent of the respondents believed shelters were essential. What was the use, many asked, of taking cover when the world left behind would be poisoned and civilization destroyed? Portland city council members questioned the value of its civil defense program in May 1963 and subsequently voted to abolish it altogether. Civil defense in the future, council members decided, would focus on natural disasters and would be the responsibility of other city agencies.

Soon afterwards the Oregon legislature debated the continuation of civil defense. The Columbus Day tempest, opponents argued, proved how ineffective civil defense was against a storm; God only knew how feckless it would be in the face of a nuclear holocaust. Proponents pointed out that the storm had been a fluke, and it was just plain unlucky that Lowe had been on a hunting trip that week. Congress also refused to fund a national shelter program, and civil defense against nuclear war faded as a national concern.

The civil defense efforts in the Pacific Northwest up to 1963 were indicative of the fears and anxieties many Americans felt about nuclear war. The plans and exercises generated from civil defense offices in Washington and Oregon in particular influenced the national civil defense program. Those involved were dedicated, unselfish public servants and volunteers motivated by a keen desire to help their fellow human beings. However, the legacy of nuclear war civil defense was a great deal of wasted time and money. Should a nuclear war occur today, the civil defense strategy is evacuation to rural areas, just as it was in 1954.

David Ballard is a middle school teacher in Coeur d'Alene, Idaho, and has been a freelance writer for 25 years.
Log Chutes
of the Pacific Northwest Coast

A Fast, Efficient yet Dangerous Method Used by Early Loggers to Transport Fresh-Cut Timber

By David H. Davis

From British Columbia to central California, hundreds of 19th- and early 20th-century log chutes once dotted the landscape. Often these were simple ad hoc constructions in the form of log-lined trenches and long, 12- to 24-inch-diameter poles (called chute sticks) sitting directly on the ground. Occasionally, a more refined kind of chute was constructed with lap joints and beveled sticks. This type, cut above ground on evenly spaced crossties (Figure 1).

Materials varied from region to region, as did chute stick lengths. Douglas fir and other straight timber lacking abundant knots was best for all types of chutes. Historic photos show a variety of stick lengths, with different lengths and diameters sometimes used in the same short segment of chute. The ideal stick tapered only a little from end to end and was 16 to 20 feet long as well as perfectly straight. Craftsmanship varied even more than materials, depending on economic outlay and intended use. Chutes intended to be used longer than a few months were generally better built.

Simply defined, log chutes of all types were artificial channels constructed to transport cordwood, shingle bolts, or sawlogs from the stump to some other location such as a railroad landing or a body of water. Thus it may be said that chutes formed the initial link in a chain of transportation that ended at the sawmill. Although a certain amount of variation exists in material and construction types, the most important distinction to be made is between gravity and trailing chutes. Logs traveled downhill by gravity on very steep hillsides, but they had to be towed over level ground or on slopes of less than 25 degrees. Towing, called “trailing,” was by means of draft animals or steam-powered engines. Introduced on the Pacific Coast during the 1880s, donkey steam engines on portable wooden sleds reeled out hundreds of meters of towing cable that wound onto drums driven generally by two heavy pistons. Donkeys were much more powerful than flesh
and blood animals—they could sometimes pull as many as 20 logs chained together in long “trails.”

With rare exceptions, gravity chutes (Figure 2) were usually shorter than a mile, partly because the ideal in log transportation was safety rather than speed. Speed became a liability over long distances. Friction could cause fires, and high speed on curves could result in lost or damaged logs. Trailing chutes, on the other hand, were frequently over a mile in length. Originally, three Whatcom County, Washington, chutes discussed in Log Chutes on the Industrial Frontier (Davis 1993) were all over a mile long (Figure 4), while the gravity chute across the bay from them (on Lummi Island) could not have been longer than half a mile. These chute lengths were typical throughout the Northwest and most of the Pacific Coast. Gravity chutes were almost always shorter than trailing chutes.

The significance of log chute innovations cannot be appreciated without reference to a thumbnail sketch of log chute history. Chute technology arrived on the East Coast by way of Europe. Koroleff and Bryant credit the United States for inventing the concept of trailing chutes, where logs were propelled downhill by something other than gravity. The first known trailing chutes were built on the East Coast and relied on animals for power. In other respects, however, most East Coast trailing chutes were structurally the same as gravity chutes built in Europe. In sketches and photos they appear to have been lightweight constructions made of small timbers, and were often designed for the transport of cordwood instead of large timbers or logs. A few were portable and made out of prefabricated metal parts or milled lumber.

Log chutes in the virgin forests of the Pacific Coast and the mountains of central California had to be made from much more sturdy material than chutes in Europe or in the eastern United States. They were always constructed with whole logs and were never portable. The dimensions of Douglas fir, red cedar, sugar pine and California redwood meant that chutes transporting such enormous logs would have to withstand more than ordinary stress. This may be one reason why chutes in the Far West were frequently built in trenches instead of above ground. The walls of a trench provided better chute stick support than would be possible with chutes built on crossties in comparatively delicate constructions held together only by chute spikes.

Historic photos and archaeological evidence all along the Pacific Coast indicate that chutes built in trenches were so common between 1890 and 1935 that they could be said to constitute a traditional western logging technology. In addition to lined trenches, other types of chutes also existed in many parts of the Northwest, but in all three Pacific Coast states and British Columbia, photo archives testify to the preponderance of lined trenches or similar ad hoc chutes constructed of unhewn logs sitting directly on the ground.

**Figure 1.** An exceptionally well-made chute built on crossties.

### A LEXICON OF LOG CHUTE TERMS

**Block.** A large pulley used for rope or cable.

**Bolt.** A segment of wood sawed from a short log; a term usually applied to shingle-length logs in the Northwest.

**Chaser.** A member of a hauling crew on a log chute who rode in a “pig” or “chute boat” behind a trail of logs and ran into the woods to yank on a pull wire to signal when there was trouble. (Also called a frogger, a sled tender, and a pigman.)

**Chute Boat.** A hollowed-out log that was canoe-shaped but blunt on both ends. It was used for carrying tools and the chaser at the end of a log trail. Also called a chute sled, rigging sled, and pig.

**Chute Sticks.** Long logs used in a chute channel as rails along which cut timber could slide by gravity or be towed. They sat directly on the earth or were spiked to crossties. Also, they could be round or hewn. Sticks were generally placed in pairs but could also be used singly as a lip or rail on a side hill.

**Donkey Chute.** A trailing chute with a donkey engine.

**Donkey Engine.** A small steam engine with an upright boiler over a wood, coal, or (later) diesel-burning firebox. Donkeys are rated according to drums. There were one-, two-, and three-drum types (called bull donkeys).

**Donkey Sled.** The double rail sled on which a donkey engine rode or pulled itself by its own power from one side of a chute to the other. Sleds were built from large squared-off logs that were shaped or rounded on one end. These rails were rarely less than one meter wide and were frequently eight or ten meters long when more than one cable drum was used.

**Gravity Chute.** A log chute dependent on weight and the force of gravity to transport logs. Also called a running chute.

**Greaser.** A crew member who daubed grease of almost any kind (including fish oil) on a chute several times a day to keep logs traveling smoothly. He carried a bucket and a swab on a long stick.

**Haulback Line.** This cable was used to tow the main cable and the rigging back to the chute head once it had pulled a trail of logs to the bottom of the chute.

**Skid Road.** A (usually) short road leading from the stump to a chute, landing or skidway. Before steam power, skid roads often made use of crossties or “skids” placed every few feet in the road, so that logs rode on skids instead of bogging down in soft earth, as animals pulled and churned the soil.

**Trailing Chute.** A log chute whose power source for moving logs was either draft animals, steam power or fossil fuel tractors with caterpillar treads.

**Whistle Punk.** The person who transmitted signals (by telegraph or pull wire) to the engineer of a donkey engine.

**Wolf Trap.** A wooden braking device with a heavy hinged log lid that impeded the speed of logs running down a gravity chute (also called bear trap).

**Yarding Donkey.** The donkey that yarded or pulled in logs from the stump to a landing or chute head. It worked on short rather than long distance tows.
viewpoint, the topography of the mountain where they were built is twisted and folded in unusually daunting ways. Yet the chute loggers who built this system arrived at satisfactory solutions to some difficult engineering and transportation problems, including marshes, streams, gullies and sandstone obstructions.

Many log chutes remain unrecorded and undiscovered, partly because historical archaeologists may assume that a ditch running straight down a hill or across other, less steep stretches of terrain was built to convey water or was caused accidentally by dragging logs along the ground. If a ditch is short and full of bends, it is probably not the remains of a chute. Most chutes are at least 100 meters long and more frequently ten times that length.

Besides evidence of cable fragments, donkey parts, pulleys or other artifacts, one indicator of how a trench might have been used is cable scars on trees. Some stumps and trees were used intentionally as "Oregon blocks" or cable posts around which cable could be pulled. A sign of a chute trench now filled by erosion is, in western Washington, a perfectly straight line of alders of the same age. Alders take root well in the disturbed soil of berms and ditches.

In addition to being used as temporary camps, cleared areas were sometimes used as donkey engine landings, although donkeys also perched on the edge of drop-offs when necessary. Often donkey loggers towed logs to the edge of a gravity chute, from which point the logs could slide downhill by their own weight (Figure 3). Such locations may contain several stumps encircled by cable that is stapled or spiked in place, indicating how and where a donkey was anchored.

Eyewitness accounts of log chutes in operation describe their speed, efficiency, craftsmanship, and the dangers of working on any kind of chute, whether trailing or gravity. Some observers claimed that logs on gravity chutes reached speeds of 60 to 90 miles per hour, especially when chutes were long or icy. (Figure 5) An early journalist writing for Scientific American described logs in a chute racing pell-mell down a mountainside:

> They come with the speed of a thunderbolt and somewhat of its roar. A track of fire follows them—fire struck by their friction with chute logs [i.e., chute sticks]. They descend the seventeen hundred feet of the chute in fourteen seconds. In doing so they strike the deep water with a report that can be heard a mile distant [Scientific American, March 21, 1885].

A less dramatic example of logs rushing down a chute can be witnessed personally by visitors to the small museum maintained by the Bainbridge Island Historical Society. The museum owns a short film clip (on tape) that shows logs trundling down a gravity chute during the late 1920s. The amateur filmmaker captured images of logs pitching and rolling on curves as they sped toward a cliff edge and directly into Puget Sound.

Chutes built to transport valuable timber had to be...
engineered and constructed with great care; otherwise, too many logs would be damaged or lost. On gravity chutes the enormous weight of larger, heavier logs was used to propel smaller ones in front of them. At the top of the chute the lightest logs were loaded on the downhill side. Then the whole lineup was given a vigorous push by a harnessed horse team, and the trail was on its way. But this procedure could cause lighter logs to fly out of a chute as a log trail sped into a curve. "Deadheads," or logs sitting in a flat spot in the path of a speeding log trail, could splinter or split lengthwise on concussion. Such accidents had an economic impact, prompting a study in 1929 that resulted in an article entitled "Log Damage on Gravity Chutes," by I. V. Anderson.

Communication along chutes (done mostly with pull wires and primitive telegraph signals based on shorting out two wires strung alongside a chute) was imperfect at best. Anderson tells the story of a logging superintendent inspecting chute operations in the 1920s. Walking up a chute in his caulk boots, the superintendent was caught by surprise by a trail of logs that ran him down and killed him on the spot. Both wild and domestic animals, such as cows, were occasionally injured or killed by speeding logs. All sorts of risks were taken when logs were sent singly down a gravity chute. This was called "wild-cattin," and the name itself implies this method's obvious dangers, especially if "wild" logs flew out of the channel.

More Deadly Than War is a book about accidents in early logging along the Pacific Coast, mostly in Washington. The author, A. M. Prouty, explains how, in their own way, trailing chutes were as dangerous as gravity chutes. Whether animal or steam power was used for towing logs along chutes, ropes, cables, tongs and logging hooks (called "dogs") comprised a form of rigging that:

Figure 2 (OPPOSITE PAGE). Gravity chute on Lummi Island (Whatcom County), 1918.

INSET: Figure 3. Donkey engine and crew, Bellingham, near the turn of the century. The second drum, called the haulback drum, was used for returning the towing cable.

BELOW: Figure 4. Basic two-stick trailing chute over a gully near Hoquiam. Note pull-wire on logger's shoulder.
A really high-grade piece of engineering... When logs came down that chute it was like they were shot out of a cannon. And they didn't have to use grease of any kind. You see, logs are very slippery in the spring and they slide fast. The bark got knocked off on the way down, and that made them slippery. Sometimes those logs coming down the chute would get so hot you’d see smoke coming from them.

Mr. Hunsby was impressed with the craftsmanship of this chute (locally called the Lummi Island Chute), which was built toward the end of World War I by a logger named Lindy Hansen. Hansen was also the boss of the small logging crew that operated the chute and the logging machinery above and around it. Compared to the perfectly engineered chute in Figure 1, the Lummi Island Chute appears to be far less refined, although it may have been better built in sections farther up the mountain than those shown in the photograph. George Hunsby remembers well the construction of the chute, which was hewn:

There were notches in each skid (or chute stick) and they had crosspieces and drove iron in to hold them all in place... They had to do a lot of work with axes to smooth out the bottom of the chute, and they used adzes, too, and big chisels—the kind I never saw before or since... That chute had three logs on each side and at least two on the bottom.

Hunsby explains how a small camp (visible in some photographs) was built near the chute apron, on the beach. An office, cookhouse, “commissary” and bunkhouses made up the camp, constructed with rough-cut lumber on temporary foundations.

As may be seen in Figure 2, many logs have jumped the chute and lie along its sides. The chute timbers themselves appear somewhat but not perfectly in line, although, as suggested, this chute might have been better built and better maintained farther uphill. When judged alongside more than 60 other photographs of chutes built up and down the Pacific Coast during the same period, this and the three trailing chutes across the bay from Lummi Island may be said to be good examples of typical log chutes used throughout the Pacific regions of the Northwest.

In almost every case, log chutes were built to last only a season or two, or as long as it would take to cut and transport the timber they were built to exploit. That perhaps explains why the logger’s creed was, in essence, “Whatever works, works well enough.”

---

David H. Davis is a freelance historical archaeologist. Current projects include the interpretation and history of a 1910 sawmill in Calaveras County, California, and an extensive study of a little-known branch of the Emigrant Trail across the Sierra Nevadas.
Tribute to a "Throttle Artist"

Ed Wolters started his railroad career as an engine wiper for the Northern Pacific in Tacoma and became a locomotive fireman in 1905. Four years later he was promoted to engineer, a position he held until retiring in 1948. Most of Wolters’s career was on Stampede Pass over the Cascade Mountains, a line that tested an engineer’s skill with its torturous grades, hairpin curves and a two-mile tunnel that could become suffocating when filled with steam engine smoke. Wolters was one of a select group of engineers who rated the special nickname, “throttle artist,” because of the smooth, jerk-free ride he provided.

Northern Pacific paid tribute to his ability in 1942. A special train came to the Northwest in the early months of World War II. No one was supposed to know who was aboard, but word soon spread across the Northern Pacific that it must be President Franklin D. Roosevelt, en route to inspect Northwest defense preparations.

Northern Pacific selected the best of its engine and train crews to handle this most important of trains. To climb the mountain grade from Easton to the top of Stampede Pass, a helper engine would be required, pushing on the rear of the train. This was an especially delicate assignment as the president, with his polio-damaged legs and steel braces, was particularly sensitive to jolts and the helper locomotive would be coupled against his private car. Ed Wolters was their man.

In a follow-up letter to the Northern Pacific, Stephen Early, secretary to President Roosevelt, wrote, "... to the officials and men of the railroad lines over which the President passed while he was making his tour of inspection, ... never in the life of this record-breaking traveler has he moved from coast to coast, from border to border, with as much ease and comfort, rest or enjoyment."

—Jim Frederickson

The Historical Society gladly accepts donations of prints or negatives of regional historical interest to add to its photograph collection. (Please contact the Society before making donations.) Readers are invited to submit historical photographs for History Album. If a photograph is to be returned, it must be accompanied by a self-addressed, stamped envelope.

COLUMBIA 19 FALL 1996
WASHINGTON is known for its apples, but the potato, *Solanum tuberosum*, has a much longer history. It appeared in the earliest Washington gardens. Though the gardens did not survive, this tasty tuber persevered to become a favorite food and important crop for the citizens of the state.

Salvador Fidalgo, a Spanish marine explorer, supervised the planting of the first Washington garden at Núñez Gaona (Neah Bay) in 1792. To insure an early harvest he used plants brought from San Blas in Mexico. Fertile soil and plenty of water yielded enough vegetables to feed his crew. Contemporary visitors described the gardens as “tolerably good.” No one specifically mentions potatoes, indeed no one mentions any vegetable by name (at least in English translations), but there is good reason to suppose that purple and yellow potato blossoms colored the landscape. The evidence comes from written accounts left by early Spanish explorers who settled just a short distance to the north at Nootka Sound off the coast of Vancouver Island. There in 1790 Captain Pedro Alberni cleared the land, dug a well and planted a garden where “potatoes and beans grew readily.” According to Juan Francisco de la Bodega y Quadra, Spanish naval commander, the gardens contained enormous potatoes considered “an article of subsistence in case of necessity.” If potatoes flourished such a short distance to the north, would not the Spaniards have planted them in the garden at Neah Bay?

While the year 1792 may be a bit speculative for the first Washington potato planting, written documents attest that on June 5, 1795, Englishmen planted potatoes on islands near present-day Ilwaco. Charles Bishop, captain of the Ruby, an English vessel anchored at Cape Disappointment, dramatically described that planting: “While we [were] in the Harbor, We cleared a small Island and Planted: Peas, Beans, Potatoes . . . that we are in hopes on our return from the Northward we Shall have vegetables for our Table.” And have them he did! On his return in November, Bishop found perfect potatoes with a sweet taste. He attributed his success to the Oregon Country’s mild climate. Unfortunately, erosion has wiped away all trace of those historic islands and gardens.

Other early potato plantings took up space in gardens established by European and American fur trading companies such as the Astor Company, the North West Company, Pacific Fur Company and Hudson’s Bay Company. In 1811, Gabriel Franchère, an explorer with the Astorians, expressed surprise that one dozen potatoes in “bad condition” produced a promising crop. Ross Cox in 1815 harvested a “fine crop of potatoes” in the kitchen gardens at Spokane House, an outpost established by the British near the junction of the Spokane and Little Spokane rivers. He also tried to instruct the local natives in “the good effects that would result from their [potato and other vegetables] cultivation,” but they declined because “it would interfere with their hunting and fishing, and prevent their women from collecting their own country fruits and roots in the autumn.”

Potatoes thrived in the gardens at Forts Vancouver, Colville and Nisqually, established by the British Hudson’s Bay Company to feed trappers and explorers. Hudson’s Bay Company Governor George Simpson believed, “The river with a potato Garden will abundantly maintain the Post.” Practicing what he preached, Simpson personally supervised the beginning of the potato patch at Fort Colville.

The potatoes grown at Fort Vancouver in 1825 came from seed potatoes imported from London. An 1825 map of
the Columbia River shows "potato grounds" behind the stockade. Documentation indicates that workers hand planted the "eyes" in plowed rows and then covered everything with more dirt "obtained from between the rows." Similar methods, albeit with machines, are used today. Employers and employees soon realized that potatoes had the potential to become a major agricultural commodity.

By 1832 visitors to Fort Vancouver lavished praise on the lush gardens and the excellent potatoes. When Narcissa Whitman stayed at the fort in 1836, she observed that potatoes seemed to be on the menu at every meal served in the elegant fort dining room. The following year the Whitmans planted potatoes in their mission garden at Waiilatpu.

ABOVE: The use of a camas digging stick, demonstrated here by a Wanapum woman, made an excellent tool for turning the earth when planting or harvesting potatoes.

RIGHT: Burlap bags filled with potatoes show a successful harvest around Lake Chelan in the early 1900s.

Though the Indians Cox encountered did not choose to grow potatoes, most Native Americans living in the Pacific Northwest realized their potential. Potato harvesting and preparation easily fit with their way of gathering and preparing roots such as camas. Since *Solanum tuberosum* is not native to this area, the Indians probably obtained their first "seeds" from the Spanish gardens, the European ships that sailed along the coast, or the early forts. An early variety, though not the first one, was called "ship potato," giving credence to the idea that the ships brought the first potatoes to the Northwest. The tribes who lived away from the forts most likely received their first potatoes from the native women who worked in the fort gardens.

Although we cannot pinpoint the specific place and time potatoes first entered the native diet, from stories scattered throughout logs and journals kept by missionaries, traders and explorers, it is clear that many Indians successfully grew potatoes. An early entry, written by missionary William H. Gray in 1836, reported that near abandoned Spokane House, Spokane Garry, an Indian educated at missionary schools, had such "a considerable quantity of potatoes" that he could provide Spaulding's mission with 15 bushels of seed potatoes. In 1841 Charles Wilkes observed that Indians of Puget Sound raised "extremely fine potatoes in great abundance and that potatoes formed a large portion of their diet." And James Swan wrote that potatoes planted by Indians were "the best I have ever met with in any part of the world." By 1855 an entry in the *Pacific Railroad Reports* points out that all the mountain Indians east of the Cascades had potatoes. In the 1850s, when large numbers of emigrants entered the Oregon Country, they often encountered Native Americans selling potatoes.

The tuber's success among the native tribes can be credited to the fact that it had qualities consistent with their root-gathering culture. Tools such as the digging stick used for loosening the soil around the camas root or removing rocks from clam beds made a perfect implement for digging a potato hole at planting time and for removing the tuber at harvest time. Except for putting back into the ground a small portion of what one ate, no knowledge of cultivation was required. What is more, since potatoes have a way of coming back on their own, even those who did not plant...
the prolific spuds often had them.

The tuber's similarity to roots made its preparation for meals easy. Many tribes used the ancient ways of steaming and roasting in pits heated with hot rocks. Swan reported that the Makahs put hot rocks in a large wooden trough and laid the potatoes on top. Then they threw water on the heap and covered the trough with mats and/or old blankets to retain the steam. When the potatoes were ready to eat, the custom was to "peel off the skins with the fingers, dip the potato in oil and bite off a piece, repeating the dipping at each mouthful." According to Swan, the Makahs considered potatoes "rather a luxury than as ordinary food." The Makahs still raise potatoes that some people believe are the progeny of the first potatoes grown at Neah Bay. Called Ozette Fingerlings, the potatoes have a yellow flesh and an unusual number of eyes.

Journal entries state that the Indians grew potatoes in natural clearings or "prairies," often abandoned camas plots. As the potato's popularity grew, the fields increased in size. By the mid 1850s agents from the Office of Indian Affairs complained that "they hang to the old patches in preference to working on new land." The agents felt this practice exhausted the land and made it difficult for the Indians to increase their yield of potatoes.

Probably the land's fertility did decrease and the soil become "worn out." Successful farming calls for crop rotation and fertilizing. Nevertheless, when agriculture failures occurred among Native Americans, the problem often stemmed from others imposing unfamiliar practices.

When white settlers arrived in the Pacific Northwest, they always gave potatoes a prominent place in the garden. Homeowners either brought seed potatoes from home or purchased them from area merchants. Fertile soil insured a luxuriant crop and many a farmer reported harvesting potatoes that weighed eight to ten pounds. "They tasted far better than any cake or ice cream. . . . We didn't even think about putting butter on them, that might spoil them," recalled a Whatcom pioneer.

Pioneers who lived near Dungeness, Washington, boasted that they were "nourished and invigorated by the refreshing breezes of the Strait and potatoes of Clallam County." Some homesteads marketed such large quantities that traders called them "potato kings." By 1857 the Pioneer Democrat newspaper reported that Puget Sound district exported 17,000 bushels of potatoes to the port of San Francisco.

According to Charles Ballard, son of the founder of Auburn, before the hop craze in 1870 only the potato crop brought in cash. Farmers transported the tubers by canoe to Seattle where they sold for 30 to 50 cents a bushel—a considerable bonanza. By 1879 the price had risen to 75 cents per bushel. "Better than raising hops," reported the May 16, 1879, Washington Standard. In Skagit County potatoes constituted legal tender when money became scarce.

The settlers learned of new potato varieties from the advertisements printed in territorial newspapers. Prominently displayed, the ads proclaimed that new seed potatoes "surpass all other kinds for quality." The settlers urged buyers to place their orders early as it "was first come first served." In 1869 Early Rose, Peach Blow and Dorland headed the list of popular varieties.

Farmers in King County obtained Peach Blow from the state of Maine in 1859. One farmer reported that an ounce of potato sprouts yielded 10 pounds the first year and 30 bushels the second year. Other varieties seen growing throughout Washington Territory were Lady-Finger, Mercer and Blue-Nose. Lady-Finger is listed in the Nisqually journals as early as 1850; Native Americans grew Lady-Finger potatoes in Yakima in 1854. Since most early writers did not name the specific variety, it is interesting to learn of these colorful names.

Washington Territory even had a soon-to-be celebrity involved with its potato crop. Before becoming a Union commander in the Civil War and president of the United States, Ulysses S. Grant planted a 30-acre potato patch at Fort Vancouver in order to provide himself with "something on the side" as he "could not possibly live on less than $150 a month." The potatoes grew but unfortunately did not alleviate Grant's financial problems. Nevertheless, in 1927 the Hill Military Academy put up a marker to memorialize U. S. Grant's potato farm.

Besides contributing to our state's nutritional and monetary needs, the

Denby delivery truck, 1920.
The Northern Pacific Railway is now part of the Burlington Northern Santa Fe system.
Young and old enjoyed the “great big baked potato” as they journeyed west on the Northern Pacific.

potato found itself a prominent player in the Pig War of 1859. A dispute over the boundary that separated American and British territories on San Juan Island initiated the animosities when a British owned pig plundered a Yankee potato patch, causing the owner to shoot the pig—a shot that almost began a war. Fortunately, cooler heads settled the boundary dispute, and only one potato patch and one pig suffered harm.

In 1909 the Northern Pacific Railway began serving Washington’s tasty tubers in its dining cars, thereby bestowing fame and fortune on our distinguished vegetable. That historic event and the potato’s rise to stardom began when Hazen J. Titus, superintendent of dining cars on the Northern Pacific, overheard two Columbia Basin farmers complaining about the size of their potatoes. “The potatoes,” they said, “were gigantic,” some as much as five pounds, but homemakers declared them inedible and refused to buy them.

Titus saw their potential. After an initial tasting, he thought their “flavor was superior to the best baking potatoes of the day, including the vaunted Idaho russet.” Expediting a few culinary experiments with different size tubers, Titus perfected a way to serve these bakers. On February 9, 1909, dining car chefs proudly served a big baked potato to a traveler who had dared to order it for ten cents.

Though that unknown diner did not record a glowing testimony to his memorable meal, the railroad deemed the dish successful. The giant tuber, served with a pat of butter, became a promoter’s dream. Titus organized “Great Big Baked Potato Booster Clubs,” and gave away souvenir items such as pens, blotters, aprons and letter openers that carried a picture of the baked potato. Even the Kent commissary, which prepared food for the railroad dining cars, promoted “The Route of the Great Big Baked Potato.” On top of its building a sign in the shape of a 40-foot-long potato lit up the sky. Electrically wired so that the pat of butter glowed intermittently and the eyes winked, the big baked potato could be seen from the windows of all trains entering Seattle. With its name in lights, the potato had become a star.

Meanwhile, potato cultivation in our state weathered all hazards and increased its commercial success. Years before Grand Coulee Dam supplied large amounts of irrigation water, potatoes grew successfully at every elevation and in almost every type of soil. Experts advised farmers that if they planted potatoes according to approved techniques they could guarantee a quality crop.

To improve the industry and encourage the use of seed potatoes, the Spokane Chamber of Commerce in 1921 began the Pacific Northwest Potato Show. Judges awarded prizes to the best exhibit. A few years later the association of Pacific Northwest Potato Growers began publishing a directory listing seed potato growers who passed field certification. Qualifying potatoes received an official red tag. The potato, once planted as a hedge against starvation, now heads Washington’s list of agricultural successes. Washington is potato country.

Jacqueline Williams writes and lectures about daily life on the Oregon Trail and during the settlement years of the Pacific Northwest. She is author of Wagon Wheel Kitchens: Food on the Oregon Trail (University Press of Kansas) and The Way We Ate: Pacific Northwest Kitchens, 1845-1900. (Washington State University Press).
A century and a half ago the northwestern Great Plains was both a vast buffalo hunting ground and an active theater of intertribal warfare, where members of several smaller tribes from west of the Rockies fought the Crow Indians and the tribes of the Blackfeet alliance. During most of the 18th century the Salish, Pend d'Oreille, Kutenai and Shoshone had occupied this land, perhaps the richest buffalo hunting ground in North America. But as the aggressive Blackfeet tribes acquired horses and guns, they moved into the area from the east and forced the smaller tribes westward beyond the summit of the Rocky Mountains, known to the Blackfeet as “the backbone of the world.”

Even so, by the early years of the 19th century the Salish, or Flathead, and their western neighbors were banding together and crossing the Rockies to reassert their right to hunt on the Plains, and they continued to do so until buffalo were exterminated there during the early 1880s. Many bitter battles, both large and small, were fought between the Blackfeet and the Rocky Mountain tribes on the Plains and in the mountains.

During the years 1832-33 two talented artists, George Catlin and Karl Bodmer, traveled up the Missouri River from St. Louis and painted portraits of prominent chiefs and a few scenes of Blackfeet life. But no white artists had pictured the Salish and their allies or their encounters with the dreaded Blackfeet before the arrival in 1841 of Jesuit missionaries Peter John De Smet and Nicolas Point, who founded St. Mary's among the Flathead, the first Catholic mission in the region. Point had demonstrated an interest in art during his boyhood in France, and De Smet encouraged him to use his skill to produce an extensive pictorial record of their missionary efforts and of the life and customs of the Indians among whom they labored.

During the 1840s the Salish customarily made two trips to the Plains each year to hunt buffalo. The winter hunt lasted for several months, during which the Salish lived in skin-covered tepees in the same manner as the Plains Indians. The summer hunt to obtain meat and hides lasted only a few weeks. The first trip of the Salish to the Plains after the establishment of St. Mary's mission began just a few days after a number of Indians were baptized on Christmas 1841. Point accompanied the Salish so that he could continue to teach them about Christianity and serve as their priest on a daily basis. He also executed some very informative drawings that portrayed aspects of Salish life on these travels.

Point's lively pen-and-ink drawing of a Salish family on the move eastward toward the buffalo hunting grounds is reproduced in Figure 1. These Indians of the mountainous region, who at times had to travel along narrow trails through wooded country and down steep slopes, did not use the A-shaped drag known as a travois to transport their loads. One horse was used to transport their tepee, with the skin cover carefully folded and tied in place over the horse's back. The long poles, which provided the foundation for the cover when the tepee was erected, were divided into two bundles of equal size and weight, one tied to each side of the horse. Men carried little more than their weapons and pipes on the march. Women were
responsible for the movement of the children and of all household possessions. Clothing and a variety of other small objects were carried in rectangular, folded rawhide cases, known as parfleches. These were made in pairs and transported one on each side of a horse's back to balance the load. Children learned to ride alone at an early age, but the youngest were tied into saddles on gentle horses. The extra horses, colts and dogs belonging to the family made up the rest of the family party on the move.

The day's march began early and ended before dark when a suitable camping location was reached, at which time the women busied themselves making camp for the night. As shown in Figure 2, they unpacked the animals, set up the tepee, gathered much of the firewood, started a fire to cook the evening meal, and looked after the children. In this drawing by Point, a woman is pictured shoveling snow to clear a space around the tepee while a man wields an ax to cut some larger branches for the campfire.

Another of Point's drawings (not pictured) shows at a very small scale and in rather diagrammatic form three communal methods of hunting buffalo employed by Indians on the northwestern Plains in his time. On one side is shown the chase on horseback, most popular among the intermontane tribes who had plenty of well-trained horses. On the left the buffalo are pictured being lured over the edge of a bluff into an enclosure built of posts, poles, and brush at a lower level. In many instances the bluff was much higher and there was less need for an enclosure to contain the animals that were killed or badly maimed in their fall. Bison "drives" or "jumps," as this method was known, have a long history of use by Indians on the northwestern Plains. One of the most spectacular of such sites is the Head-Smashed-In Buffalo Drive Site west of the town of Fort Macleod, Alberta, where Indians drove buffalo over a steep cliff as many as 5,700 years ago. The last Piegan (one of the Blackfoot tribes) drive of buffalo over a cliff is believed to have occurred at a site near Choteau, Montana, during the 1850s.

A third method of taking buffalo, by luring and driving them into a stoutly-built corral or pound at the foot of a hill, is suggested in Point's drawing by the circled buffalo near the picture's center. De Smet had a more detailed and accurate drawing of this method prepared by a European artist at a later date. This later drawing probably was based upon a precise verbal description of Assiniboin impounding
of buffalo observed by Edwin T. Denig, the factor of Fort Union and friend of De Smet's. Denig furnished De Smet the description in 1852 in the form of a written account accompanied by a diagram, both of which De Smet published in his book Western Missions and Missionaries.

The salient feature of this method of hunting was the circular pen or "pound," about an acre in size, constructed at the bottom of a hill. The walls of the pen formed a stout fence made of stakes firmly fixed in the ground, dry brush and stones. In the center of this pound was erected a tall pole to which several sacred charms were attached to help bring in the buffalo. A narrow opening was built in the circular pound on the hillside, and the fence extended outward and up the hill at an angle so that the open area narrowed as it led toward the pen. The shaman or master of the pound selected a man to ride out toward a herd of buffalo on horseback, cover himself with a large buffalo robe and imitate the cry of a buffalo calf to get the herd to follow him toward the pen. As the herd approached the enclosure, Indians on horseback followed to keep the animals moving. Other members of the camp, stationed behind the fence leading to the pen, urged the animals on. Bowmen from outside the pen shot the buffalo as they milled around inside.

This method of impounding buffalo was widely employed by Indians on the northwestern Plains over many years. Archaeologists have found evidence in Wyoming of its use several thousand years ago, long before the arrival of the horse. The method continued to be employed by the horse-poor Assiniboin and Plains Cree until near the time the last buffalo were exterminated in their territory during the 1870s.

A related series of Point's drawings depicts the inevitable battles that occurred when the Salish crossed the Rockies to hunt bison in territory claimed by the Blackfeet. The courage displayed by some of the most prominent chiefs and warriors of the small Salish tribe in their fights with the more numerous Blackfeet won the admiration of both De Smet and Point. De Smet described the achievements of a number of Salish in hand-to-hand combat with their enemies in his prolific writing about these Indians. One of his favorites among the Salish was Chief Sechelmeld (Five Crows), to whom De Smet gave the name of Ambrose in baptism. This chief later became well-known to the soldier-artist Gustavus Sohon who drew his portrait from life on May 14, 1854 (Figure 3). In the portrait Ambrose is wearing a visored Scottish cap that he must have obtained in trade from the Hudson's Bay Company.

De Smet described how Ambrose won a very remarkable war honor while participating in a battle with the Blackfeet that occurred shortly before the missionaries first met him:

Sechelmeld saw a Blackfoot separated from his company, and armed with a musket. The Blackfoot, taking the warrior for one of his own tribe, asked the Flathead to let him mount behind him. The latter, wishing to make himself master of the musket, agreed to the proposal. They advance on the plain, till Sechelmeld, seeing that the place favored his design, seizes his fellow rider's weapon, exclaiming: "Blackfoot! I am Flathead, let go your musket." He wrests it from his hands, dispatches him, remounts the horse, and gallops off in pursuit of the enemy.
De Smet also obtained from Ambrose a series of small pen-and-ink drawings that illustrate his winning of war honors—his personal war record. One such illustration (Figure 4) pictures the very action De Smet described—his wresting of a gun from the hands of a Blackfeet enemy who had ridden double with him. Obviously, Ambrose was more interested in preserving a simplistic graphic record of this winning of a war honor than he was in providing a realistic portrayal of the action. He employed a style of rendering both humans and horses in "pictorial shorthand." It was enough to render the two men as stick figures with featureless knob-like heads, bent rectangular bodies, and single-line arms and legs bent at elbows and knees, riding with both legs on the same side of the horse. Ambrose makes a point of showing the gun he acquired, but there was no need to show any clothing on either figure. The horse is portrayed in a static pose, an elongated body in side view, with legs in line rather than paired, each ending in a hook-like hoof.

This same figurative style was employed by a Mandan Indian near the beginning of the 19th century to depict a battle between his people and an enemy tribe fought in circa 1796. This battle scene is the earliest well-documented example of Plains Indian picture-writing. Painted on the inner surface of a buffalo robe, which was collected by Meriwether Lewis and William Clark before they left the Mandan villages on their overland exploration to the shores of the Pacific Ocean in April 1805, the scene is preserved in the Peabody Museum of Archaeology and Ethnology at Harvard University in Cambridge, Massachusetts. A comparison of Ambrose's
work with that of the Mandan artist four decades earlier appears to place Ambrose's style well within the tradition of northern Plains picture-writing of a period before it was influenced through contact with art created by white artists.

Interestingly, Point executed a drawing of the same action Ambrose had pictured—the Salish chief wresting a gun from a Blackfeet who had been tricked into mounting with Ambrose on his horse during the heat of battle. Point created a detailed, realistic illustration in the tradition of European graphic art (Figure 5). His drawing corresponds rather closely with a pencil study of a cavalryman in action executed by the French master painter of horsemen, Theodore Géricault (1791-1824), which is preserved in the Chicago Art Institute.

Point rendered the three-dimensional forms of horse and riders in action and in realistic detail on a two-dimensional paper surface very much as did Géricault. In both examples the horses are portrayed in a difficult three-quarter front view rather than in profile. Point has gone further and placed his figures in a geographical setting, making his contribution an illustration and not just a figure study. These elements are all attributes lacking in Ambrose's interpretation of the action.

The different interpretations by Ambrose and Point offer a unique opportunity to compare the styles of a Salish Indian working within the tradition of Northern Plains picture-writing and a Frenchman schooled in the European artistic tradition. Nearly a dozen drawings by each artist of Salish-Blackfeet warfare during the early 1840s have survived and are part of the De Smet collection of the Jesuit Missouri Province Archives in St. Louis, Missouri.

Ambrose's drawings in the De Smet collection employ the same style described above to depict his winning of other war honors, including the capture of a shield and the taking of a war bundle from an enemy. Point's other drawings of Salish war honors depict other warriors. Yet, one of Point's works bears a similarity to one of Ambrose's in that it provides evidence of another feature of Salish-Blackfeet warfare in the region—the use of a conical timbered lodge by members of war parties.

Another drawing by Ambrose (Figure 6) shows him counting coup upon an enemy (touching an enemy with the hand or an object held in the hand) by pursuing him to his war lodge and using the powers of his medicine bundle to penetrate the lodge, touch the enemy, and escape unharmed to join his Salish compatriots surrounding the Blackfeet war lodge. Although the war lodge was a conical structure built of a pole foundation and covered with slabs of bark, the Salish artist shows it simply as a circle with the enemy inside it.

We know from the journals of Lewis and Clark, who first made reference to these structures, that the construction and use of war lodges by small war parties was a typical aspect of the conduct of intertribal war in this region during the 19th century, lasting to the end of Blackfeet-Salish warfare in the 1880s.

There were a number of prominent woman warriors among the Indian tribes of this region during the 19th century. The most famous was a Gros Ventres by birth who became a chief and war leader among the Crow Indians and whose remarkable career was described by Denig, who knew her.
Point learned of a noted woman warrior among the Pend d'Oreille Indians, and described and pictured two of her noteworthy accomplishments. Her name was Quilix, meaning The Red One or Red Shirt. In one of his letters Point described how she led her warriors in a charge upon a party of some 30 Blackfeet who had taken cover in a ravine. Point claimed that "her bravery surprised the warriors who were humiliated and indignant because it was a woman who had led the charge, and so they threw themselves into the breach where nature's shelter had protected the enemy." In their fierce charge the Pend d'Oreille claimed to have killed all of the Blackfeet except for two to four of them who managed to get away. One of Point's drawings (not pictured) depicts Quilix leading this Pend d'Oreille charge.

During the late summer of 1846, while he accompanied the Salish, Pend d'Oreille, and a small party of the friendly Small Robes band of Blackfeet onto the Plains, Point had an opportunity to witness Quilix in action against hostile Crows. Two years earlier the Crows had decisively defeated the Small Robes, reducing the latter from the largest of Piegan bands to one of the smallest. Thus the Small Robes were both eager for revenge upon the Crows and grateful for the assistance of their Salish and Pend d'Oreille friends. In the ensuing battle the Crows were defeated. But it was the bravery of Quilix that most impressed Point who wrote that she,

accompanied by a few braves and armed with an ax, gave chase to a whole squadron of Crows. When they got back to camp, she said to her companions, "I thought that those big talkers were men, but I was wrong. Truly, they are not worth pursuing.

Point pictured Quilix in action, with her tomahawk upraised, chasing the Crows (see Figure 7).

The Small Robes band of the Piegan was so large prior to 1844 that a number of white observers considered them a separate tribe. They were large enough that they dared to be friendly with the Salish and their allies west of the mountains while all the other Blackfeet were enemies of those peoples. The Small Robes chief, Bear Child, had a Salish wife, and they were the parents of a grown son in the 1840s, so that the Small Robes-Salish alliance may have been in existence for some years before the missionaries came to know them. De Smet baptized the Small Robes chief at the new mission of St. Mary's on Christmas day 1841.

This brief background may help explain Point's unique portrayal of a trading
scene picturing the Salish and Blackfeet exchanging goods. Doubtless the Blackfeet who were involved were the Small Robes, the friends of the Salish. The Blackfeet appear to be offering primarily guns to the Salish, but also pipes, which from their forms we may judge to have been made of red stone (catlinite) mined from the famous quarry site in Minnesota by Sioux Indians and traded widely to other tribes. Among the other items being exchanged are decorated skin clothing and items offered in folded rawhide containers (see Figure 8). No other artist is known to have pictured peaceful trade between Salish and Blackfeet.

On September 14, 1846, De Smet negotiated a fragile and short-lived peace between the Salish and other Blackfeet bands in his tepee at an Indian encampment in the valley of the Judith River. From there he proceeded down the Missouri to St. Louis. But Point remained in Blackfeet country to become the first Christian missionary to these warlike Indians on the upper Missouri. He made his headquarters at the American Fur Company's trading post at Fort Lewis and traveled outward from there to the Blackfeet camps. His picture-making helped to establish friendship with the Indians, and he continued to picture life at the fort and in the Indian camps during the fall and winter of 1846-47, returning down-river to St. Louis the following spring. He illustrated many aspects of Blackfeet life, and collected a remarkable group of watercolors made for him by a Blackfeet artist. These paintings interpret Indian trade with the whites as well as the sacred symbols of their traditional religion executed in the year these Indians were introduced to Christianity.

Point's journal covering the years of his missionary endeavors in the Northwest, profusely illustrated with many small watercolors by Point and a few by a Blackfeet Indian, was edited by Joseph P. Donnelly, S.J., and published as Wilderness Kingdom: Indian Life in the Rocky Mountains: 1840-1847 by Holt, Rinehart and Winston in 1967. The journal and the original watercolors are preserved in the French Canadian Jesuit Archives in Ste. Jérôme, Quebec. The examples of Point's pictorial interpretations of Indian life provided here are works executed in graphite or ink from two other collections that have not been published before: the De Smet collection at the Jesuit Missouri Province Archives in St. Louis and the De Smet collection at Washington State University in Pullman, Washington. The works in these two collections indicate that Point was a better draftsman than he was a colorist, as evidenced by his delicately and precisely rendered pencil drawings, which seem to reveal finer detail than his more colorful watercolors.

Taken together, Nicolas Point's output of black-and-white and color illustrations, as well as the Indian works collected by De Smet and Point, comprise a significant interpretation of missionary endeavors in and near the Rocky Mountains and a unique pictorial record of Indian life in the region during the period 1841-47.

John C. Ewers is ethnologist emeritus of the Smithsonian Institution, having been a member of the Department of Anthropology for 50 years, and founding director of the Museum of the Plains Indian on the Blackfeet reservation in Browning, Montana.
Frank Robinson, photographically frozen in time, leans back in his chair, speaking into a Dictaphone. Vested, hair oiled, shirt-sleeves rolled up, he sits behind a desk littered with stacks of paper, dictation cylinders, glue bottle, ink blotters. I doubt Robinson spoke to God that day. This was more likely a message for his secretary, a recording she would transcribe, the printing department would print, the mailing department would assemble, and the post office would forward to some of Robinson's thousands of followers in over 60 countries. The Frank Robinson captured in that photographic print, gazing at us from half a century ago, started the world's largest mail-order religion in the town of Moscow, Idaho.
Moscow was a town of 5,000 when Robinson arrived in the 1920s, a place where Protestants and Catholics mixed amiably and religion was something people did quietly on Sunday. Then along came Frank Robinson, seeking donations to start a religion, lecturing in the Moscow Hotel on the “God Power,” advertising in a national magazine under the headline, “I talked with God—yes I did—actually and literally.” There he was, mocking the Protestants and Catholics of Moscow: “You cannot find the Power of God through anything any church teaches, for the simple reason that what they teach is not of God.” And there he was erecting on the outskirts of town a huge sign for all to see:

MOSCOW, IDAHO
KNOWN THE WORLD OVER AS THE HOME OF PSYCHIANA
THE NEW PSYCHOLOGICAL RELIGION

Frank Robinson shaped his message to fit the times. During the Great Depression Psychiana preached prosperity. During World War II the literature talked about the human race “going through the greatest storm it has ever known.” Robinson rejected the Christian dogma, encouraging his students to “look within,” rather than searching “two or three thousand years in the past” for inspiration.

It all happened fast. The first ad, placed in 1929, generated 3,000 responses. Geoffrey Birley, a wealthy British cotton exporter, replied, enclosing a photograph of himself. A little later Frank Robinson dreamed of Birley making mystical motions over a corpse, saying, “This is Psychiana, the power that will bring new life to a spiritually dead world.”

Robinson wrote Birley of the dream. Birley wired back $40,000. Suddenly Robinson’s religion had a name and a bank account. Psychiana expanded from a small office to two large buildings.

Moscowans didn’t know much about media evangelists back then, and Robinson’s tactics offended some. Frank Robinson was a new breed. At the height of the Great Depression he founded a growth industry. By the end of the 1930s more than 100 people worked in the Psychiana offices. The religion advertised in 180 magazines and 140 newspapers, sent its message over 60 radio stations, and mailed more than 60,000 pieces of correspondence daily.

Psychiana had no church structure. It was a correspondence course. For $20 students received 20 lessons, one every two weeks. Finish the basic set and move on to advanced teachings. Multiply $20 by thousands of students, factor in speaker’s fees and proceeds from sales of more than 20 books, and you have a lucrative business.

Although he claimed his teachings were direct revelation, Robinson was actually one of many descendants of Mary Baker Eddy, the founder of Christian Science. Eddy rejected many Christian dogmas: original sin, the Trinity, heaven and hell. Christian Scientists believed that Jesus demonstrated more godliness than many but was not the Son of God.

By the 1880s some Christian Scientists, objecting to Eddy’s authoritarian rule, formed religious splinter groups, operating under the umbrella term “New Thought.” Eventually the New Thought movement incorporated a secular branch, people who touted the power of positive thinking, like Emile Coué (“Every day, in every way, I’m getting better and better”), Dale Carnegie, and Norman Vincent Peale.

Robinson, too, disbelieved in the miraculous birth of Jesus, the Resurrection, the Trinity, and original sin. Robinson admired Jesus’ abilities, but he believed Jesus merely possessed the “God Power”—to no greater degree than Robinson himself. Robinson disbelieved in heaven and hell—a person could obtain all desires on earth—and he embraced the power of positive thinking.

Robinson was an avid reader of books, magazines and newspapers. He clipped stories that interested him—articles about evolution, writers who doubted Christ’s existence, atomic science. But he read with a certain blindness, focusing on stories that supported his philosophy. Studying with that constricted vision, he discovered much to support the Psychiana view. While not an original thinker, Robinson absorbed what he read and gave new twists to contemporary theology, rewriting so that those like himself, with little edu-
And that was Frank Robinson's greatest intellectual contribution. Dig far enough and you will find virtually all that Robinson taught, in slightly different form, in the writings of other New Thought authors. But Robinson added an important wrinkle. He melded the two threads of New Thought ideology—secular "positive thinking" and religious "rationalism"—into one belief. And he wrote for common people. Most New Thought authors aimed for intellectuals. Robinson angled for the masses. Consequently, Psychiana was one of the biggest New Thought religions.

Happiness, healthy living, material wealth—all were accessible to those who accepted the Psychiana way. Through hard work, study, and positive thinking people could find the "God Power." And if they failed, they would at least get their money back, for Robinson's lessons came with a guarantee.

As the Great Depression deepened, Robinson intensified his advertising. Readers, battered by hard times, responded in huge numbers. No one knows exactly how many subscribed, but there must have been hundreds of thousands. Some were merely curious, but many were true believers. Testimonials flooded the Moscow offices. People gained happiness, health, financial prosperity—and credited Psychiana.

Psychiana was a religion for the 1930s. It preached prosperity during depression, taught self-help and offered hope. But the 1940s were different. The 1940s brought war. Frank Robinson, shrewd businessman that he was, adjusted again, launching a "spiritual Blitzkrieg" against fascists. Guns might not destroy the Nazis, but millions of people could by intoning three times a day: "The unseen forces of God are bringing about the speedy defeat of the Axis."

Though not the first religious leader to advertise, Robinson was a rarity, one of the earliest to understand mass media's potential to market religion. Oral Roberts and other TV preachers are unknowing descendants of Robinson and a few other media pioneers.

He saw no contradictions between advertising and religion, and he did not apologize. "Advertising is educating the public to who you are, where you are, and what services you have to offer," he wrote. "The only man or organization who should not advertise is the one who has nothing to offer."

The advertising paid off. Students kept joining; the Psychiana offices kept pouring out literature, letters, lessons—as much in the 1940s as the 1930s. There seemed no limit to Frank Robinson's adaptability, until he suffered a series of heart attacks in mid-decade.

Frank Robinson liked Moscow. It was the only community in which he enjoyed success. He raised his family there. Realizing he was controversial enough, Robinson refused to sell lessons or books locally. Most Moscow residents understood little about the religion in their midst. What they did know was that...
Frank Robinson made an economic difference. He was the town’s largest private employer. He constructed three business buildings and operated two drug stores. Most people considered him the area’s biggest charitable donor. He bought land outside of town and gave it as a county park. He started Moscow’s first youth center.

He also published a daily newspaper. Moscow already had one daily and it was unusual for a small town to support two. But Robinson needed a press for all his printing, so he purchased the Elk River (Idaho) News, moved it to Moscow, and renamed it the News-Review. The Republican News-Review competed bitterly with the existing Democratic Star-Mirror.

For years both newspapers lost money, neither willing to merge. Finally, when the Star-Mirror’s publisher died, ending a personal feud between the two papers’ primary owners, Robinson consolidated the two, forming the Daily Idahoian.

Moscow isn’t so different today from when Frank Robinson arrived in the 1920s. There are new houses and buildings; new streets and more people. But it’s still a quiet college town. Robinson would recognize the place. His home on Howard Street still rests in a quiet, tree-lined neighborhood; still houses the pipe organ he loved to play—the one he used for musical interludes to introduce radio programs.

But if you come to Moscow searching for remnants of Psychiana, you will be hard-pressed to find them. There is no longer a sign outside of town proclaiming Moscow as the headquarters of a world-famous religion. One of the Psychiana buildings is a parking lot; the other a nearly vacant COLUMBIA 34 FALL 1996
IT HAS BROUGHT TO THE HUMAN RACE THE FIRST SCIENTIFIC PROOF OF THE RADIOACTIVE, ATOMIC POWER OF THE SPIRIT OF GOD IN US—FOR WE TOO ARE COMPOSED OF ATOMS.

For 20 years we have been teaching that all the power of the universe exists, not only for us, but IN US. It is the Spirit of God. The most flashingly brilliant, dynamic, electrifying power this world will ever know.

POWER! POWER! POWER!

Direct From God Into YOUR Life

Power to achieve every good thing you need in this life. Power to make you well, both in body and spirit. Power to produce a super-abundance of material and spiritual wealth awaits you because the LAW GOVERNING THESE THINGS ACTUALLY EXISTS IN YOU—NOW. We teach you how to intelligently find and use this actual and literal power of the invisible God.

"PSYCHIANA"

MOSCOW, IDAHO

Frank Robinson was an innovative national leader in the religious use of mass advertising, and he always adapted his ads to his times. This ad appeared in 1946.
office building. The Daily Idahonian (now the Daily News) thrives. But its workers seem to know little about their roots. When the paper published a Moscow history in the 1960s its reporters did not find space for one word about Psychiana in over 100 pages of text. Most of their descendants in the 1990s show equally little interest in the paper's history. Robinson Park still exists, although few visitors have any knowledge of its benefactor.

Some have probably chosen to forget Psychiana because they are embarrassed; to them it seems a blight on the town's history. Others are genuinely offended. When the Latah County Historical Society curated a Psychiana exhibit in the county courthouse during the winter of 1991, a staff member in the prosecutor's office wrote that, in her opinion, it "violate[d] the Establishment clause of the United States Constitution by promoting a religion." She wanted it immediately removed, adding, "I find the religious doctrine offensive." The exhibit stayed, the historical society's trustees citing their right to interpret controversial topics.

The trustees were right. We should not ignore people like Frank Robinson; we should not commemorate only that part of our past that pleases us. Psychiana thrived at a particular time, appealing to a particular group of people. Robinson did no one harm and helped many. Psychiana's history can provide insight into the hardships of the Great Depression and World War II during the 1930s and 1940s, and how some made it through those difficult decades.

Psychiana's story can also tell us how a little-educated, ingenious man with a vision happened upon the town of Moscow, liked the place, stayed, and in the process forged one of Idaho's most unusual historical episodes.

Over the past 20 years Washington has had a major impact on popular music culture with the development of the Seattle-Tacoma rock music scene, culminating in the emergence of "grunge" music, which has become known worldwide. But music has always been important to the citizens of the state.

Documenting the history of music in Washington is an ongoing concern of the Society's Special Collections department. Ranging from the 1870s through 1990s, our collection documents performers who came to Washington as well as those who call the state home. It includes thousands of printed pieces: handbills, broadsides, posters, sheet music, tickets and programs, plus a few sound recordings. The musical genres represented range from rock and country to classical and opera.

This 1989 poster, featuring Mudhoney, Tad and Nirvana performing at the first Seattle "Lame Fest," is one of over 300 recent and current rock music posters acquired for the Society's Special Collections. We continue to collect handbills, flyers and posters advertising musical events from all periods of Washington's history.
By Michele S. Gerber

Hanford's PAC-MEN
Five Plutonium Separations Plants Await Decommissioning

At the present time five giant chemical processing buildings, used at the Hanford Site to separate plutonium and uranium from irradiated uranium fuel elements during the World War II and Cold War eras, await the final phase of their life cycles: decontamination and decommissioning (D&D). These cavernous structures were originally called “Queen Marys” or “canyons” by Hanford workers because of their enormous size, and more recently they were dubbed “Pac-Men” by former DOE Assistant Secretary Thomas Grumbly because their costs “could eat the Department of Energy.”

Two of the buildings are presently unoccupied, two are undergoing cleanout and deactivation, and one is preparing for at least a ten-year role as a waste processing and decontamination facility in the site's cleanup mission. Standing as stark and gray reminders of past defense imperatives, these structures now must undergo scrutiny as decisions about their ultimate disposition are negotiated.

The oldest of the canyon buildings, T-Plant, B-Plant and U-Plant, date from the 1943-44 construction frenzy of the Manhattan Project, the wartime effort to produce the world's first atomic weapons. Originally designed as 810-foot-long identical triplets, each contained 40 concrete cells with thick walls...
OPPOSITE PAGE:
The T-Plant complex in 1993:
291-T is the exhaust stack; 271-T is the office area; 224-T was part of the old World War II processing but now stores wastes contaminated with transuranic elements; 222-T (now idle) was a World War II process control laboratory; 221-T is T-Plant itself; 2706-T is the low-level decontamination annex.

RIGHT: Radiochemical processing equipment inside a shielded cell, U-Plant, 1960s.

and huge cover blocks. In these cells, uranium fuel elements that had passed through the inferno of Hanford’s reactors first were to be dissolved and then pumped through various steps that added and mixed chemicals to unlock the desired plutonium from its waste by-products. Early in the construction phase, however, a special 65-foot addition was placed on the head end (northeast end, in this case) of T-Plant. This annex, fitted with miniaturized versions of the actual processing equipment, served as a radiochemistry laboratory to research and develop improvements in the separations process.

Original Separations Method

The World War II Hanford Site used the bismuth-phosphate separations method, a batch precipitation process that achieved separation by repeatedly centrifuging and redissolving various plutonium-bearing solutions. Based on the principle that bismuth phosphate (sodium bismuthate combined with phosphoric acid) is similar in crystal structure to plutonium phosphate, the process manipulated the valent state of plutonium so that it alternately was carried along with, or left behind, bismuth phosphate solutions. As the various solution transfers took place, a more and more purified and concentrated batch of plutonium-bearing solution emerged. This solution was purified further in additional, smaller Hanford structures until a plutonium nitrate paste, similar in consistency to unset gelatin, emerged as the site’s final product. (Terminal processing steps that fashioned the paste into metallic weapons shapes took place at the Los Alamos Site in New Mexico.)

T-Plant began operations using the bismuth phosphate process on December 26, 1944, and became the headquarters of Hanford’s chemical processing operations. The process itself, initially extremely slow and wasteful (processing one ton of irradiated uranium per day), managed to reduce its chemical consumption dramatically and bring the time cycle for processing one batch down to four hours by 1956. In April 1945 B-Plant became operational.

Due to the efficiencies implemented at T- and B-Plants, U-Plant, although completed shortly thereafter, was not needed. Rather than subject it to radioactive contamination, Hanford operators decided to hold U-Plant in reserve. It served as a “cold” training facility (one that used unirradiated materials) for the next five years.

T- and B-Plants, together with Hanford’s original three reactors, produced the plutonium used in the world’s first, third, fourth and fifth atomic explosions: the Trinity bomb test of July 16, 1945; the weapon dropped over Nagasaki, Japan on August 9, 1945; and the Able and Baker test shots detonated in Operation Crossroads at Bikini Atoll in the South Pacific in July 1946. (These same facilities also produced the plutonium used in the 1948 Operation Sandstone and 1951 Operation Greenhouse nuclear tests conducted at the Pacific Proving Grounds, as well as the

1951 Operation Ranger and Operation Buster trials at the Nevada Test Site.)

Cold War Fosters New Process

The emerging tensions of the Cold War prompted a series of seminal decisions to increase America’s atomic weapons supply in the spring of 1947. The new Atomic Energy Commission (AEC, successor agency to the Manhattan Project) turned to the Hanford Site for quick re-
sults. It ordered the immediate construction of two new, standard-issue, graphite moderated reactors and the development of a prototypical solvent extraction chemical processing plant.

Solvent extraction, a continuous process that would separate and save not just the plutonium but the unconverted (unfissioned) uranium in the irradiated fuel elements, had been the process of choice since the earliest days of the Manhattan Project. However, the exigencies and short deadlines of wartime had prevented its development. Now the AEC was adamant. Supplies of fresh uranium were limited, and the builders of the new atomic frontier believed that they could afford to waste none of it.

The new process developed at Hanford was called REDOX (reduction oxidation). It utilized a methyl isobutyl ketone ("hexone") chemistry, and produced both a liquid plutonium product stream and uranyl nitrate hexahydrate (UNH), a uranium product stream complexed in acid. UNH then could be sent to another facility for calcination into uranium trioxide powder and used as part of the feed material in other nuclear processes.

Construction was begun on the REDOX production facility itself in 1949, and the plant opened to "hot" operations (those using irradiated materials) in January 1952. Although it was only 467 feet long, the REDOX canyon was much taller than T-, B- and U-Plants, due to significant differences in its processing configuration. It also was vastly more efficient. The Hanford Site produced 44 percent more plutonium in 1952 than it had in 1951, and the overall output was more than five times as much as that of 1947.

Uranium Recovery Mission

URANIUM WAS IN very short supply in the early 1950s when the Manhattan Project's cache from the "Belgian Congo" (now Zaire) had been consumed and large deposits in the Colorado Plateau and western Canada had not yet been discovered. The desire not to waste uranium prompted another key development at Hanford. U-Plant, nearly idle since its 1945 completion, was modified to conduct the "metal (uranium) recovery" mission. A solvent extraction process utilizing tri-butyl phosphate (TBP) diluted with natural paraffin hydrocarbon (NPH, a saturated kerosene) as the extractant was developed and fitted into U-Plant. Underground tanks holding uranium-laden, high level wastes from the bismuth phosphate process were sluice-mined to deliver their contents to specially constructed vaults. There, the wastes were liquefied with acids and sent through the U-Plant cells to recover the precious metal. The U-Plant mission was carried out from 1952 through late 1957, when most of the bismuth phosphate wastes had been processed.

Meanwhile, the Cold War surged ahead, fueled by the unfolding of famous spy cases, the Korean Conflict, and the nearly simultaneous American and Soviet development of thermonuclear (hydrogen) weapons in 1952 and 1953. President Dwight Eisenhower campaigned in 1952 on the pledge that he would cut the burgeoning defense budget with a "new look" in armaments. Coupled with the policy of
"massive retaliation," the Eisenhower presidency meant one thing for the Hanford Site: more dramatic expansion. "Program X," discussed in the AEC's inner circles throughout 1952, came to fruition at Hanford under Eisenhower's direction. Two new reactors, massive by the standards of the day, along with vastly augmented plutonium separations capacity in the form of a huge new processing plant, were constructed during 1953-55. The PUREX (plutonium-uranium extraction) facility, Hanford's largest at just over 1,000 feet long, was designed to separate 200 tons of irradiated uranium per month. It began hot processing in January 1956.

PUREX Satisfies Demand

During the PUREX construction period, the U.S. demand for plutonium was so great that the Hanford Site embarked on the "4X Program." It was so named because it planned to operate all four of the site's chemical processing buildings (aside from U-Plant) for plutonium separations. Renovations for the restart of B-Plant took place throughout 1955, and were completed just as the PUREX facility came on line. However, the first year of PUREX operations demonstrated such an overwhelming production capacity, along with economic efficiency as compared with the other separations plants, that the 4X Program was abandoned. In 1956 alone, the PUREX facility processed 56 percent of the total plutonium output of the Hanford Site, and the total 1956 production was 59 percent above that of 1955. T-Plant was shut down as a processing facility in mid 1956, and plans to restart B-Plant were terminated.

The design of the PUREX plant incorporated several new features that accounted for its vast efficiency. Like the U-Plant, it utilized a TBP/NPH chemistry, albeit in different proportions from those used in the metal recovery mission. Not only were these chemicals more efficient in plutonium extraction than the hexane used at REDOX, but they had a higher flash point, which meant that no components of the PUREX plant had to be built to explosion-proof standards. Also, another key chemical used at REDOX, aluminum nitrate, could not be recycled and reused, while the nitric acid used at PUREX could be partially decontaminated and reworked. Additionally, the PUREX facility moved its solutions through electrically pulsed columns rather than through the packed columns that had necessitated making the REDOX plant so tall. Unique in-line monitoring instruments also were especially designed for continuous operation in the PUREX facility, and equipment innovations acted to prolong equipment life.

Over the years of operation many other equipment changes at PUREX acted to improve efficiency and boost production still further. In 1958 the plant began the recovery of neptunium 237 from its normal product stream. Immediately, the facility became the AEC's prime supplier of this isotope, much desired for its space power applications. In October 1960 PUREX reached the point of having processed 22,000 tons of irradiated uranium, thus surpassing the combined totals of T- and B-Plants and the REDOX facility during all of their years of operation. By that time PUREX was processing 80-85 percent of the irradiated uranium at Hanford, with the REDOX plant handling only the small portion of "E-metal" (enriched uranium) used in special reactor loadings. By 1965 the PUREX facility was operating routinely at four times its initial design capacity of 200 tons per month. Two years later the REDOX plant completely ceased operations, and PUREX became the sole provider of separations processing at the Hanford Site.

Sole Provider Ordered to Close

The PUREX facility operated until 1972, when it was placed on standby for eleven years. Many modifications were made during that period, especially in terms of waste minimization and waste management, in response to changing federal and site policies. In 1983 it resumed operations as part of the nuclear arms buildup mandated by President Ronald Reagan. Beginning in the mid 1980s the plant closed and restarted a number of times in response to safety and environmental

PUREX plant in 1990.
incidents. The Department of Energy (DOE, a federal heir to the AEC) placed the PUREX facility on “standby” status in October 1990 and issued a final closure order in December 1992.

Today the PUREX plant is entering the fourth and last year of a model deactivation plan. Deactivation is the facility transition phase between operations and D&D. During deactivation hazardous chemicals and bulk nuclear materials are removed from the plant, and contamination resting on interior surfaces or within pieces of equipment are fixed with special sealants or isolated so that it cannot migrate into the environment. These steps are necessary to decrease the frequency of expensive monitoring and maintenance activities. Lastly, utilities will be disconnected, and no workers will inhabit the building except to perform periodic surveillances. However, neither equipment nor the building itself will be removed.

Supported by more than 100 complex schedules of activities, “loaded” with manpower and other resource needs, the PUREX deactivation project will cost approximately $160 million over a four-year period. Thereafter, it is projected to save the $35-40 million per year that was spent in the early 1990s to monitor potentially mobile contaminants within the huge facility. Public involvement has been sought concerning the methods and strategies used in the deactivation project and will be sought as to the final disposition of the building and its ancillary and associated structures.

B-Plant Engaged in Deactivation

LIKE PUREX, B-PLANT today is engaged in the business of deactivation, having received its DOE order for terminal clean-out in 1995. After its 1952 shut down, B-Plant stood idle, except for miscellaneous storage activities, until 1961 when renovation began for the Fission Product Recovery Mission. Officially designated a waste management activity, this project operated from 1968 to 1984 to recover cesium 137 and strontium 90 out of Hanford’s high level waste. The isotopes attracted various off-site customers interested in medical, space power and other applications. In 1974 a companion facility called the Waste Encapsulation and Storage Facility (WESF) was completed on the west end of B-Plant to enclose, cool, store and monitor the capsules that held these high-heat-generating isotopes. WESF and B-Plant were tied by common utilities and power sources, but because an ongoing storage mission exists for WESF, the facilities will be split or “de-coupled” during the deactivation process.

In 1985 B-Plant undertook a demonstration project in the pretreatment of neutralized current acid waste, one form of high level mixed waste from Hanford’s underground storage tanks that will need to be solidified or otherwise stabilized as part of the site’s overall cleanup. In 1991, however, DOE decided that the old facility could not meet modern standards required of pretreatment plants. Since that time major clean-outs of specific B-Plant areas have taken place, and the push to achieve “minimum operations” (staffing by only a few people) is expected to be completed about the year 1999. The task facing B-Plant is difficult in that the fission product separations mission program.

REDOX facility, early 1950s.

SUPPORTED BY MORE THAN 100 COMPLEX SCHEDULES OF ACTIVITIES, THE PUREX DEACTIVATION PROJECT WILL COST APPROXIMATELY $160 MILLION OVER A FOUR-YEAR PERIOD.

COLUMBIA 42 FALL 1996
tamination business made T-Plant an "orphan facility" over the years. In other words, it was used by many organizations within the Hanford contractor companies, but no one took singular responsibility for maintaining the facility itself. As a result, 1990 found the old plant and its annex in a degraded state, and a "limited operations" order issued in January 1991 forged a Task Team to evaluate the plants' viability for future operations. When the team concluded that central, on-site decontamination facilities were economic and logistical necessities for Hanford's cleanup, T-Plant and the 2706-T annex began the long road back with a series of transforming modifications.

In early 1994, 2706-T passed its full-scale operational readiness review and now performs regular low-level decontamination and waste repackaging operations. More extensive upgrades are needed at T-Plant itself, and the permitting process will take longer. As soon as it can meet modern requirements the old facility will take its place, albeit still not an exalted one, as a workhorse in the Hanford Site cleanup. No future date for its ultimate D&D has been scheduled.

U-Plant and REDOX Stand Idle

Neither U-Plant nor the REDOX facility took on new missions after their initial ones were completed. Because it did not process irradiated reactor fuel, U-Plant did not acquire the high levels of contamination that accrued to the other Hanford canyon facilities. Therefore, not much clean-out or deactivation was done after the 1957 shutdown. U-Plant served as a storage facility for contaminated equipment from around the Hanford Site for many years, with some intermittent but fairly insignificant decontamination work performed on machinery. Today the facility receives periodic surveillance and is scheduled for final D&D to begin in 2023.

The REDOX facility underwent deactivation procedures that were state-of-the-art for the 1967 time frame in which they occurred. Work began with a complete flushing of the process equipment and lines with a 57 percent nitric acid solution. The product solution then was mixed with dissolved fuel solutions in the PUREX plant and processed for residual plutonium recovery. Intermetallic compounds and vessel sludges then were dissolved with other acids and flushed from the REDOX facility. This procedure was followed by caustic flushes and then steam blasting. Much of the process piping, maintenance and waste lines, and some of the utilities were blanked off, and bulk fresh chemicals and pyrophoric materials were removed. The waste pond was blanketed with fresh raw water, but the waste cribs, diversion boxes and tanks were kept in operation for use by other Hanford facilities.

For two years the REDOX plant existed on standby status while negotiations for its potential use as a commercial reactor fuel reprocessing plant took place. When the commercial mission was ruled out, the facility received its final "layaway" order in August 1969. The few more "deactivation extension" activities that were carried out became the last initiatives, aside from routine surveillance checks, to occur at the plant since that time. REDOX's final D&D is scheduled to begin in 2016.

Today at the Hanford Site all waste cleanup work is being reevaluated in light of a goal set in May 1996 by incoming DOE Assistant Secretary for Environmental Management (EM) Al Alm. In a letter to DOE's EM employees, Alm stated that he intended to "reduce most of the risks and most of the mortgages over a ten-year period." Toward achieving this goal, he listed reduction of the "large costs that are being devoted to sustaining the current facilities as a primary step. In other words, like Grum­bly, Alm sees aging facility facilities such as the five Hanford relics as costly burdens on the entire DOE system, and he is looking for ways to streamline their deactivation, their follow-on surveillance and maintenance, and their ultimate D&D.

Will he entertain the idea, already advanced by some at the Hanford Site, of turning the canyon buildings into "tombs" for layer upon cemented layer of low and mixed level wastes, covered by a specially permitted "cap" of earth and engineered barriers? If the entombment idea prevails, the canyons would not be torn down but would become "permanent" (as far as can be foreseen) waste disposal units. If this were to happen, would historians and archaeologists of future ages be able to read our history in these landmarks as surely as those of today read the lifeways of Indian cultures in burial and ceremonial mounds or interpret the traditions and values of ancient Egyptians in the Sphinx and pyramids near the Nile River? If so, what would building entombment, as opposed to removal, say about the constant effort put forth at Hanford to subdue and control nature?

Michele S. Gerber is principal historian for the Westinghouse Hanford Company and author of On the Home Front: The Cold War Legacy of the Hanford Nuclear site (1992). She has worked for historical agencies, served as a history consultant, taught American history, and served as National Academy of Sciences committee member.
John Ruskin considered it as natural to man as breathing, and the Japanese were enjoyed as well. Europeans made up the next largest sporadic, and they had to do a lot of hard traveling going from one German job to another. Largely, they were “bindlestiffs,” carrying everything they owned on their backs. They got from one job to another by riding in, under or above freight train cars.

Work, of course, is a uniquely human phenomenon. The Old Testament regarded it as a curse for the sin of Adam and Eve. The Greeks viewed it as a brutalization of the mind. Leo Tolstoy and Karl Marx took a middle position, claiming, “It is not so much work we detest, as it is monotonous conditions under which men (and some women) eked the conditions under which we labor.” He was correct.

Hard Traveling gives a brutal picture of those dangerous and monotonous conditions under which men (and some women) eked out a living in the Northwest. The period on which the pictures and text focus is roughly from 1880 to 1920, although the Great Depression of the 1930s and Roosevelt’s New Deal also are given attention. Early Northwest jobs were labor intensive: lumbering, farming, sheep shearing, mining, smelting, the fisheries, railroad building and maintenance, and the fruit orchards. Wages averaged from 17 cents to 22 cents an hour and labor strife was rampant as union activity tried to secure better pay and working conditions. Dominating the work force were Asians, mostly Chinese, although some Japanese were employed as well. Europeans made up the next largest group, then American whites. Prejudice was ever-present.

Most of the laborers were regarded as hobos, drifters, bums; but more appropriately they should be called “casual laborers.” Miners, more than any other group, were family men while the rest were largely single.

The 188 photographs in this book are a good reminder that it took blood, sweat and tears to build the Northwest, and readers will be grateful to Schwantes for this documentation. Especially helpful are the commentaries and quotes that accompany the pictures without intruding on their poignancy.

Dr. Gerald Kreyche is emeritus professor of philosophy, DePaul University, Chicago. He is American Thought editor of USA Today.

Jack London’s The Call of the Wild is, without doubt, the best known of all his 50-plus books and short stories. When he first started to write it, his idea was to do a story of about 4,000 words, but, as he said in a letter to his publisher, it “just sort of got away from me.” Fortunately we are that it did, for it has become one of the outstanding books in American literature. Amazingly, it has been continuously in print since it was first published in 1903, and even today there are more than 30 editions available. The book has an interesting genesis. London originally sold the serial rights to The Saturday Evening Post for $200; he also sold the serial rights to an English magazine. Needing more money, he then accepted Macmillan’s offer of $2,000 for perpetual book rights. This latter move may have been a strategic error on London’s part since the book went on to make millions for the publisher. London later said that he never regretted making the deal because, as the book’s author, he garnered valuable recognition for his other works.

Over many editions of The Call of the Wild, the text has been altered from time to time. Some editions have been sheared and sanitized, others have been bowdlerized, and many currently in print are distortions of the original text: The first 75 pages of this Reader’s Companion duplicate the original first edition, which London himself edited and approved. From that point on this companion is a regular cornucopia of facts and information.

To prepare himself for the task, the compiler followed in London’s footsteps from Santa Clara, California, to Dawson City, Yukon, including a trek over the formidable Chilkoot Pass and a cruise on the Yukon River. He accumulated dozens of photographs, maps and other documents from libraries and archives. Dyer has adopted a helpful technique for the text. The book is divided into seven chapters that correspond to the chapters in the novel. Lines of text in the novel are sequentially numbered to the notes in the Reader’s Companion. Dyer provides a wealth of annotations explaining the book’s many “sourdough” expressions, geographical references, and characters in the novel—human and canine alike—whom London had known.

This book demonstrates good research on the part of the author. It will be welcomed by all lovers of Jack London and the frozen North. For the uninitiated, it will open the door to a remarkable time now gone forever.

George Tweney is co-author of the first published bibliography of London’s writings. His extensive collection of London books is now in the Special Collections at the library of Ohio State University.
Robert Ficken's biography argues that Rufus Woods with the development of the Columbia River, Ficken produces an delve into his private affairs, for it was in civic matters that the outstanding book that chronicles one of the most significant events in 1904 until his death in 1950. By intertwining Woods's life in the Wenatchee Valley, Woods wrote as early as July 1918 that a Grand Coulee dam was the key to reclaiming the arid lands of the Columbia River. Ficken produces an outstanding book that chronicles one of the most significant events in the history of modern Washington.

Ficken wisely chose to follow Woods's public life rather than delve into his private affairs, for it was in civic matters that the editor so greatly influenced the growth of the upper Columbia region. Always lobbying for the economic development of the Wenatchee Valley, Woods wrote as early as July 1918 that a Grand Coulee dam was the key to reclaiming the arid lands of the Columbia Basin. Irrigation, along with hydroelectricity, would, he said, bring a boom to Wenatchee's agriculture and industry. Yet, as Ficken notes, Woods's struggles, first with private utilities and then with the federal government, ended in the routing of electric power out of north central Washington.

By detailing the evolution of water resource philosophy beyond state concerns and into regional and even national affairs, Ficken carefully avoids taking a limited, local viewpoint. He emphasizes the reluctant yet necessary relationship between the federal and local governments when it comes to financing and operating a complex of Columbia River dams. Woods and his fellow proponents of upper Columbia development accepted federal control but continued to work for local autonomy and self-sufficiency.

In Rufus Woods Ficken succeeds in combining a thorough history of the Columbia River's developmental phase with the captivating biography of a likable man who made much of it possible. By the end of Woods's life the Columbia, "once fearsome and free-flowing, lay contained behind barriers of concrete, its energy made into aluminum and airplanes and its water about to moisten an arid land." Ficken's lucid and often humorous writing style, plus Woods's natural, charismatic personality, infuse this book with life and make it an exceptional contribution to Pacific Northwest scholarship.

Katherine Copple-Woehl took her university education in Washington. Currently she is in the Department of History at the University of Arkansas.

The Arams of Idaho
Pioneers of Camas Prairie Plains

Reviewed by Neil R. Meany, S.J.

A nyone who has stood atop the immense Grand Coulee Dam and stared down at the mass of concrete and turbulent water below has an immediate appreciation for the miracle that it took to curb the once untamable Columbia River. Robert Ficken's biography argues that Rufus Woods advanced that miracle. Long-time editor/publisher of the Wenatchee Daily World, Woods tirelessly promoted the development of water resources in north central Washington from the time of his arrival in Wenatchee in 1904 until his death in 1950. By intertwining Woods's life with the development of the Columbia River, Ficken produces an outstanding book that chronicles one of the most significant events in the history of modern Washington.

Ficken wisely chose to follow Woods's public life rather than delve into his private affairs, for it was in civic matters that the editor so greatly influenced the growth of the upper Columbia region. Always lobbying for the economic development of the Wenatchee Valley, Woods wrote as early as July 1918 that a Grand Coulee dam was the key to reclaiming the arid lands of the Columbia Basin. Irrigation, along with hydroelectricity, would, he said, bring a boom to Wenatchee's agriculture and industry. Yet, as Ficken notes, Woods's struggles, first with private utilities and then with the federal government, ended in the routing of electric power out of north central Washington.

By detailing the evolution of water resource philosophy beyond state concerns and into regional and even national affairs, Ficken carefully avoids taking a limited, local viewpoint. He emphasizes the reluctant yet necessary relationship between the federal and local governments when it comes to financing and operating a complex of Columbia River dams. Woods and his fellow proponents of upper Columbia development accepted federal control but continued to work for local autonomy and self-sufficiency.

In Rufus Woods Ficken succeeds in combining a thorough history of the Columbia River's developmental phase with the captivating biography of a likable man who made much of it possible. By the end of Woods's life the Columbia, "once fearsome and free-flowing, lay contained behind barriers of concrete, its energy made into aluminum and airplanes and its water about to moisten an arid land." Ficken's lucid and often humorous writing style, plus Woods's natural, charismatic personality, infuse this book with life and make it an exceptional contribution to Pacific Northwest scholarship.

Katherine Copple-Woehl took her university education in Washington. Currently she is in the Department of History at the University of Arkansas.

The Arams of Idaho
Pioneers of Camas Prairie Plains

Reviewed by Neil R. Meany, S.J.

O ne is caught up immediately in this engrossing history of a pioneer family that daringly pushed into a remote area of Idaho in 1864 and hacked out a living there. Kristi Youngdahl immerses the reader in the hardships, frustrations, joys and tragedies of a rough but dogged existence, against a background of life and culture as it developed over the course of 130 years.

With impressive writing skill the author employs an astonishing amount of material gleaned through interviews with family members and acquaintances. The events in this history are woven into a warm, moving tapestry of family life, treated by Youngdahl with insight and compassion. The people's struggles and sorrows are revivified by the reader, as are their successes. The author has captured personalities well in her writing, though in a very few places the reader's interest may lag momentarily when a treatment of neighbors, for instance, slows the narrative a bit.

The Aram family's history moves closely parallel to, and is often involved in, high moments of history in the old and more recent West. The introduction brings the family from England in 1785. A gradual westward movement leads to a brief California episode during the gold rush and then the family's arrival in Idaho. All of this is touched with details that feed one's appetite to read on—from the family's first flight to safety during the Nez Perce War to events closer to our time, including prohibition and the Great Depression.

For older readers these pages will vividly call to mind former home designs and decorations, furnishings and supplies, Spartan schoolhouses, primitive roads, horsedrawn farm equipment and ancient motor cars, pioneer mail delivery and eavesdropping on party telephone lines. Here is described the simple lifestyle of those days, how little it took to entertain before the era of radio, television and computer games. Of special interest is the author's treatment of life on farm and ranch before the advent of modern technology. Plowing, seeding, haying, and food processing and preparation all are discussed, as are horse training, birthing of calves, cattle branding, and caring for hogs and sheep.

This book will reward a readership both young and old, eastern or western, interested in "how things used to be."

Neil R. Meany, S.J., is currently the pastor of St. Joseph's Parish, Yakima. In other careers he has been a missionary, magazine editor, cartoonist, cartographer and archivist.

ADDRESS ALL REVIEW COPIES & RELATED COMMUNICATIONS TO: ROBERT C. CARRIKER, DEPARTMENT OF HISTORY, GONZAGA UNIVERSITY, SPOKANE, WA 99258.
CALL FOR PAPERS
PACIFIC NORTHWEST HISTORY CONFERENCE
in conjunction with the Northwest Oral History Association's Annual Meeting
April 24-26, 1997
Tacoma, Washington

AFTER 50 YEARS:
Taking Stock of Pacific Northwest History
The Pacific Northwest History Conference was first held in Tacoma in 1947. After 50 years, the conference returns to its place of origin to take stock of past accomplishments in the field of Pacific Northwest History and the prospects for the future.

You are invited to propose a paper or panel for this conference. We welcome all proposals, but especially those that offer new perspectives and methods, fresh educational approaches, or unexplored topics. The Pacific Northwest History Conference has always been wide-ranging, so panels on labor, gender, ethnic, environmental, literary, cultural, and political subjects as well as oral and public history are anticipated.

As is traditional with this conference, academic and public historians, teachers, students and other researchers are all invited to submit proposals.

Please submit a one-page description (double-spaced, with participant’s name, address and telephone numbers) for each paper no later than December 1, 1996, to:

Program Committee
Pacific Northwest History Conference
Washington State History Museum
1911 Pacific Avenue
Tacoma, Washington 98402-3109


Conference Coordinator: Garry Schalliol
Washington State History Museum
206/798-5879


CORRECTION

In the Summer 1996 issue we incorrectly listed the publisher of Mourning Dove: A Salishan Autobiography. The book was published by University of Nebraska Press, not University of Washington Press.

Additional Reading
Interested in learning more about the topics covered in this issue? The sources listed here will get you started.

Preparing for the Unthinkable War


Log Chutes of the Pacific Northwest Coast

This was Logging, by Ralph Andrews. Seattle: Superior Publishing Co., 1954.


“Chute Logging,” by Phillip Neff. The Timberman, April 1927.

Potatoes: A Washington Tradition
“The Early Diffusion of the Potato Among the Coast Salish,” by Wayne Suttles.


The Nicolas Point Drawings


“Psychiana” Inc.


Psychiana papers, photographs and memorabilia. There are collections at the University of Idaho Special Collections and the Latah County Historical Society, both in Moscow, Idaho.

Hanford’s “Pac-Men”


Bring Northwest History Home with WSU Press.

Raise Hell and Sell Newspapers
Alden J. Blethen and The Seattle Times
Sharon A. Boswell and Lorraine McConaghy
This lively, richly illustrated biography of Blethen (1845-1915)—a self-made man who rose to become the most powerful and influential publisher in the Northwest—is being published to coincide with The Seattle Times' centennial celebration.
304 pages, illustrated
$14.95 paperback

Voice of the Old Wolf
Lucullus Virgil McWhorter and the Nez Perce Indians
Steven Ross Evans
"This is a gem of a book—in many ways one of the most informed on Chief Joseph and the Nez Perce Indians ever written—rich in its humanity, filled with the struggle and sadness of patriots and genuine heroes, and inspiring in its central tale of a wonderful man who did as much as anyone else—and perhaps more—to bring about realistic writing on American Indian history. . . . An accomplished and important work."
—Alvin M. Josephy, Jr., author, The Nez Perce and the Opening of the Northwest
240 pages, illustrated
$19.95 paper, $32 cloth

The Way We Ate
Pacific Northwest Cooking, 1843-1900
Jacqueline Williams
Foreword by Ruth Kirk
In this sequel to her award-winning book, Wagon Wheel Kitchens: Food on the Oregon Trail, Williams takes us into the kitchens, gardens, milkhouses, and dining rooms of the pioneers in the first decades after they arrived in the Pacific Northwest. "The most comprehensive work about the food ways of Western emigrants."
—Sandra L. Oliver, editor and publisher, Food History News
240 pages, illustrated
$16.95 paper, $29.95 cloth
Available November

Very Close to Trouble
The Johnny Grant Memoir
Edited by Lyndel Meikle, Grant-Kohrs Ranch Historic Site, Deer Lodge, Montana
Grant's vivid memoir brings to life the warriors, traders, ranchers, miners, soldiers, and vigilantes that populated the 1850s-60s Montana frontier.
250 pages, illustrated
$17.95 paper, $35 cloth
Available November/December

Hair of the Dog
Tales from Aboard a Russian Trawler
Barbara Oakley
A riveting portrayal of drinking, espionage, and comic abandon on the high seas, written by a woman who served as a translator aboard Russian fishing trawlers during the 1980s "joint venture," when the U.S. and Russia got together to fish the north Pacific.
200 pages
$19.95 paperback, $35 cloth

WSU Press books are available at bookstores, or call 1-800-354-7360.
Washington State University Press (CM)
Pullman, WA 99164-5910
**Special Friends and Members of the Washington State Historical Society**

**PATRON MEMBERS**
Judith Billings
John M. Bloxom, Jr.
Sandra & William Cammarano
Compliance Services International
F. Daniel Frost
Joshua Green III
George A. Lagerquist
David L. Leavengood
Murray Foundation
The News Tribune
William Philip
Mrs. James S. Russell
Sid & Bette Snyder
Mr. & Mrs. Charles Troubridge
Charles E. Twining
Mr. & Mrs. George Weyerhaeuser

**SUSTAINING MEMBERS**
Charles & Betty Allen
Marvyl M. Allen
Eric Anderson
Virginia Anderson
Mr. & Mrs. John Arbini
Dorothy H. Amstotz
Kelley Ashby
B & W, Inc.
John & Sally Ballantine
Redmond J. & Suzanne W. Barnett
James R. Bellamy
Bill Spidel's Underground Tours
Albert R. Bird
Carol L. Bird
Robert C. Biehern
Donald H. Botts
Mary Ann Boulanger
Bob O. Bowzer
Mr. & Mrs. L. H. Bremer
Dessie M. Brady
Jeff & Gloria Brain
Mr. & Mrs. Martin Brashem
Richard M. Bressler
William R. Brown
Robert J. Bryan
R. G. Busken
Terry Buckridge
Roy D. Bueker
Jim Burg
Lic. (Ret.) & Mrs. M. C. Cannon
Germade Carter
Challker, Punnam, Collins & Scott, Inc.
Arthur H. Clark Company
Joan McEachern Cooley
Karen Comer
Concrete Tech. Corp.
S. F. Cook, Jr.
Robert E. & Joan G. Cooper
Mark Crosin
Foster S. Cronyn
David L. Couch
William Cullen
Albert H. Cudworth
Jack G. Carrington
Jerry L. Dahlke
Mr. & Mrs. William A. Daugherty
Mr. & Mrs. Stanley R. Day
The Rev. & Mrs. Rudolph Devol
Clare & Richard S. DeVine
A. Corrine Dixon
B. J. Docherty
Dave D. Doss
Mr. & Mrs. F. Talmage Edman
Dave Edwards & Pat Shuman
Mr. & Mrs. G. Thomas Edwards
Walter L. Edwards
Meade Emory
Mr. & Mrs. Wayne J. Erickson
Executive Council for a Greater Tacoma
Dr. John Farrer
Ida M. Fishel
Mrs. John M. Flake, Sr.
Mrs. Charles Fogg
Charles & Karla Fowler
John A. & Nancy L. Fullinsider
Jean Gardner
Norman P. Gerken
Mr. & Mrs. Robert B. Gordon, Sr.
Gerald G. Gose
Grantmaker Consultants, Inc.
Larry & Mimi Green
Michael K. Green
Josephine Lepley Gunderson
Mrs. R. G. Haley
Wilbur G. Hallauer
M. Scott Hamilton
John C. Hanson
H. DeForest Hardinge
Judy C. Harrison
Mr. & Mrs. Frank Hart
Mr. & Mrs. Frederick W. Hayes
Mr. & Mrs. Philip S. Hayes
Dr. & Mrs. Russell Helgeson
Dr. & Mrs. David Heiley
Jesuleen C. Hendrickson
Monte E. Hester
Mr. & Mrs. Neil Heston
John Hestrin, Jr.
Karl D. Hill
Robert & Colleen Hitchcock
Mrs. Robert Hitchman
Dr. & Mrs. Richard A. Hoffmeister
Hazel M. Hood
John W. Hough
James E. Hubert
Mr. & Mrs. Charles Hyde
William Jackson
Arthur Jacobson
Dr. Michael J. Jarvis
Johnny's Dock Restaurant
Johnson-Cox Company
Jill Johnston
Michael Jones
John Paul Jones III
Dan & Cindy Kennedy
Daniel Kerlee
Albert S. Kerry, Jr.
Fumiko Kimura
Carol & Edward Kirschen
Karen Kramlich
Barbara Krohn
David E. Lamb
Dr. & Mrs. George Lamb
Charles & June Lane
Selinda Ann Lane
Nes & Nancy Lematta
Phillip K. Lesser
Charles & Pauline LeWayne
Alan Liddie
W. Lockhart
Jean O. Loomis
George Lukacs
Edward C. Lynch
Robert E. Mack
Alice Mailloux
Mailmedia
Kathy Manke
William & Errollyne Marsh
John R. Marshall
Mason County Historical Society
John M. McClelland, Jr.
George McFarland
Frederick J. McWilliams
Dan Meyer
Lynn & Jack Micheaux
Allen T. Miller & Family
Mr. & Mrs. Leon V. Miner
Marie Monahan
Laurel C. Morgan
Denise Morris
Mr. & Mrs. James F. Morris
Ralph Munro
Murray Pacific
Ted Nott
Needle Arts Guild of Puget Sound
Martha T. & Eugene W. Nester
Annie Nordqvist
Richard B. Odlin
Rep. Val Ogden
Jerry C. Olson
Stanley P. Owen
Dr. & Mrs. James D. Pappin
A. H. Parker
Mrs. Charles T. Pearson
Larry Peterson
W. A. & Mary Peters
James R. Peterson
Richard W. Peterson
Dave & Nilda Peten
Michael & Wendy Phillips
Pierce County Medical
Mr. & Mrs. John Pieroth
Thomas Plummer
Polson Park Museum & Historical Society
Austin Post
Marjorie & Max Power
Robert J. Preble
Mr. & Mrs. Andrew Price, Jr.
Stan & Carol Ramey
David & Roslynn Reed
Maryann E. Reynolds
James B. Rhoads
Kent Richards
The Rev. William C. Riker & Family
Frank J. & Barbara Roberts
Robert Robin
Rush, Hamula & Harkins
Lewis O. Saum
Garry Schuller & Debra Ottery
Kay Schmidt
Gregory & Zari Semerdjian
Robert & Ruth Shedd
Robert L. Sheetz
Jack M. Sherry
Elizabeth Sholander
John Simmons
Herb & Paula Simon
Harold P. & Carolyn A. Simonson
Mr. & Mrs. Peter Simpson
Jim Slaley
Arnold Slater
Mr. & Mrs. F. K. Smart
Daniel C. Smith
Pat Soden
Mrs. John A. F. Spellman
Jackie Stenger
August & Beverlee Storkman
L. N. Storset & Associates
Tacoma Arts & Crafts Assn.
Joe Taller
Thomson Thomas
Leon E. Titus, Jr.
Irwin L. Treiger
Allan Treuer
Molly Twogy
Peter von Reichbauer
Mary Ann Walters
Washington Natural Gas
Ann R. Weaver
Ralph W. Welch
Charles M. White
Mr. & Mrs. E. K. Whiteman
Lola A. Whiteman
Mrs. James W. Will
Mrs. George A. Williams
Jacqueline B. Williams
Elizabeth Willis
Dean & Katherine Willows
Mack F. Wilson
Merri Lyn Wilson
Robert B. Wilson
Mr. & Mrs. Robert C. Wing
Dr. Edward M. Winskill
Sue R. Lorraine Wolds
Mr. & Mrs. Paul Wonderly
Mrs. Byron Youz
Now completing nearly 90 years of publication, Pacific Northwest Quarterly features the history of Washington, Oregon, Alaska, British Columbia, Idaho, and western Montana. Richly illustrated with historical photographs, maps, architectural drawings, and reproductions of original documents, articles in PNQ are written by scholars for a wide reading audience. The journal boasts a new and compelling format, special theme issues, interdisciplinary approaches, energized book review and notes sections, and an annual index.
Route of the
Great Big Baked Potato!