

HEAL THE SICK

The Development of European Medical Care and Healing and its Introduction
to the Northwest Coast and the Columbia River Basin, 1760 – 1865

“..and heale the sicke that are theare..”

Luke 10:9;

William Tyndale Translation, 1526 New Testament

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PREFACE

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A copy of the essay “Heal The Sick” about the introduction of European Medical Care in the Pacific Northwest is enclosed for your reading, sharing and collections. Study of the history of Northwest medicine has been fascinating and far different from what was expected. I hope you find the essay as interesting to read as it was to write.

Over the centuries and through translations spellings and meanings of terms have changed. Words such as anaesthetic/anesthetic are spelled differently in different time periods and different countries. The modern term “surgery” is spelled five different ways in earlier documents. Latin terms are common. Generally secondary sources are used, but for those fluent in Greek, Hebrew, Latin, Aramaic and Arabic, as well as modern European languages, original and primary sources can be found through the bibliography.

There are errors in the published history of Northwest medicine. Most obvious are the multiple spellings of last names. There are also listings with first and last names reversed. Errors have been repeated and embellished. Though both John McLoughlin and William Fraser Tolmie are reported to have studied at the University of Edinburgh, no documents have been provided showing that either were enrolled there. Some authors report that doctors received medical degrees from the Royal College of Physicians and Surgeons. The College maintains and improves the quality of medical education and care through its training and assessment programs though it is neither an academic facility nor does it grant degrees.

The roster of physicians contains information from numerous sources. Though it is believed to be correct, some errors and omissions may have been copied. Individuals who are reported to have done an amputation or sutured a wound in an emergency, or had the nickname “Doc”, but without other information about practicing medicine, are not included. Individuals who studied medicine but operated a business rather than having a medical practice, are included.

An important addition to the literature of Northwest medicine would be a compilation of facsimile documents illustrating the training of some of the physicians. This might include copies of registration forms, applications, catalogs, class tickets and diplomas, reproduced and explained to illustrate the process. Matthew’s volumes on Dr. Forbes Barclay provides an example of what could be achieved, though a more limited, but broader document would also be helpful. Most importantly, it could provide documentation to all researchers and authors that could help correct the misinformation.

Almost any subtopic of history of medicine in the Pacific Northwest will provide a rich opportunity for study and writing. In the period between the Civil War and World War I dramatic changes were being made in medicine and medical care and altering life expectancy. Settlement of the Europeans in the Columbia Basin was still in process. There are numerous topics in regional medical history for reading and study. Four especially interesting and important areas to consider would be:

- 1) A survey of the introduction of antiseptics and anesthetics in the local hospitals and medical practices. What were the discussions, plans and results? Who selected ether over nitrous oxide, chloroform or cocaine? What was the local discussion about use of carbolic acid? What was the equipment for using these chemicals?

2) The first women doctors in the region were of great importance. Some study of them as a group and their influence in the region's medical care as well as their importance as individuals would be important. They were scholarly and attended universities, they supported and established libraries. Some practiced in larger towns, some were rural. Some were politically very active. Two of them did prison time. Some women doctors went to France to provide treatment in WWI. Some provided care during the Spanish Flu epidemic.

3) Ships' Surgeons, their training and their care of shipmates and explorers warrants greater study. They expanded and established European medical care and practices throughout the world.

4) Joseph Lister, with his study, research and teaching about antisepsis, revolutionized medical and surgical care. The foundations of all modern medical care is based on his work. He visited North America twice, the first time, in 1867, traveling to San Francisco. On his second visit, in September 1897, he traveled to the Pacific Northwest, visiting hospitals and doctors. He met with former students who had studied with him in London in several cities including Victoria and Seattle. A study of those meetings with Lister and their importance in developing medical practice in the region and on hospital design would be an important piece of regional history of medicine.

This essay would not have been completed without the kindness and generous assistance of knowledgeable professional librarians and archivists.

Recommended reading:

Godlee, Lord Lister. Historical surgery and treatments.

Anderson, *et al.* The Art of Medicine. Excellent book!!

Two websites:

Royal College of Physicians and Surgeons of Glasgow. //heritage.rcpsg.ac.uk/collections
An exceptionally good combination of internet and extraordinary collections.

Oregon Territorial History, compiled by Stephanie Flora. oregonpioneers.com – Emigrant Lists.

Introduction

When the first doctors came to Oregon Territory, they came from Germany and Scotland and England and France and brought medical books and pharmacopeias. They came from St. Louis and New York and carried forceps and probangs and bougies. They came from Boston and Montreal and brought amputating knives and bone saws and scalpels. They came from Philadelphia and Cincinnati and carried medical chests with laudanum and calomel and opium and quinine. They came as wagon train doctors and ship's surgeons and fur trade doctors and as soldiers and as missionaries. They set fractures and removed arrow heads and spear points. They were the men who brought European medical practice to the Columbia River Basin. Like other immigrants to Oregon Territory, some of them died on the trail or became discouraged and turned back to the east. Some committed suicide, others were shot or were struck by tomahawks. Others died of tuberculosis or drowned. But like the other travelers, most arrived safely in Oregon. They established medical practices, claimed homesteads, built towns, married Indian wives, raised families, served in the legislature, constructed forts and fought wars and helped develop Oregon Territory. They brought cures and relief to the sick and dying, they brought comfort to the injured, and they offered hope to the parents of sickly, feverish children. They brought their medicines and cures to the Indians and settlers. They were the first professional doctors in Oregon Territory.

This essay on medicine in the Pacific Northwest began with a search of the catalog of a major international library for the topic "history of medicine." Of 150,000 items that were available, over 10,000 of them were books. In a search for "history of medicine in North America" 1,000 items were available, over 100 of them books. When the search was focused on "history of medicine in Oregon Territory", no materials were found. Searches for medical history in Northwest regional libraries found publications by Drury, Holt, Larsell, Brougher, Waite, Harvey, Johnson and Matthews and others about the early physicians and early medical care on the Columbia River. The website, www.oregonpioneers.com. provided a roster of names of settlers and the year they emigrated to Oregon Territory, identifying them by their occupation such as "cooper," or "farmer," or title, such as doctor. The website www.cullenproject.ac.uk provided information on medications.

When using libraries with collections focused on medicine and history of medical care, and arriving before the doors opened, hundreds of students, scholars and researchers were seen waiting to rush for desks and computers in the reading rooms when the doors opened. The reading rooms and rare book

rooms were lined with stacks and shelves of books about the history of medicine and healing and quickly filled with readers working with the collections at the desks and tables.

The history of medicine is an important area of study but the topic of the history of medicine and healing in the Pacific Northwest is an area of regional history that has not yet received the thorough attention of historians and scholars. There are rich opportunities for study and research and to develop the written history of Northwest medicine beyond the avocations of talented amateur historians.

This essay will briefly summarize the history of healing and medicine in Europe, the development of pharmacy, physics and physicians, and review the development of hospitals and nursing. Medical education in Leiden, Holland and in Edinburgh, Scotland and their importance to North America and the Columbia Basin are considered. The arrival of European medicine and healing practices in the Pacific Northwest before the 1860's is examined, followed by a brief review of significant medical developments up to 1900. A list of libraries used, sources of information, and bibliography are included. A roster lists the 150 men identified as early physicians, listed by year of arrival, is added. Though there are extensive histories of Asian, African, Arabic and South American healing practices, they are included only as they influenced European practices that were carried to North America and the Northwest Coast. More detailed information about the *Materia Medica* are considered by De Vos, 2010, and by Lewis, 1791.

From 1792, when the Columbia River was discovered, to 1865, when the Civil War ended, there were over twenty structures identified as hospitals in the Oregon-Washington Territories. More than 150 men were identified as doctors, physicians or surgeons. Considering a larger area of European settlement including Alaska, the Aleutian Islands and the western outposts of Russia, there were another ten hospitals and, adding in all the ship's surgeons, there were another twenty men whose jobs were to treat, cure, and heal their shipmates and fellow explorers. The men's names are found in ships' rosters, and in diaries, the hospitals locations from maps, sketches and journals. The hospitals' locations' might only be recorded by a note in some traveler's journal or an accounting ledger or Army report. Physicians training, skills and experience is sometimes contained in their published books and collected papers.

Use of specific historical medications and individual dosages are infrequently recorded. Compounds and materials used for healing are listed along with foods, tools and trading goods. They are listed in

bulk, along with other materials, but not by any measure that would suggest concentrations or dosage. Spellings, quantities and abbreviations are unclear. A doctor's requisition for five gallons of rum might not all be necessary in the dispensary, but might find other uses as well, so dosage remains unclear.

The 1860's saw the beginnings of substantial changes in the population of the Columbia Basin and in medical care. The use of antiseptic techniques and the use of ether for anesthetic were both developing. Scientific methods were being used in medicine. A great deal of medical care and surgery occurred in the mid-1800's due to the Crimean War and the American Civil War expanding medical and surgical experience and knowledge. Research was conducted in anaesthetics and antiseptics. It was a time of major changes with understanding and application of knowledge of microbiology. Modern medical care was the beginning: much of the accepted treatment would be replaced in the next period of medical care and medical doctors' training.

Forward

A patient requiring treatment for an illness in the 21st century might be admitted to a hospital, be seen by a physician and by a surgeon, receive a pharmaceutical consultation, be cared for by nursing staff, and evaluated by laboratory professionals. Imaging specialists would provide internal assessment. Findings would be recorded, compiled, shared and considered in the hospital or clinic. Spiritual support might be offered, as well as psychological and emotional appraisal. In the early history of healing or medical care, these assessments and evaluations would not always have been coordinated, or even made, or even seen as necessary or possible. The different parts and disciplines of a modern assessment would have been separate, uncoordinated and possibly competitive and conflicting. Providing physics or cures, the domain of the physicians, was separate from the development and provision of medicines or pharmaceuticals as were the treatments or amputations provided by the barber-surgeons. Superstitions, spiritual attentions or magic was important in early treatments. The treatments were separate from hospitals.

This survey of the history of medical care will consider physics or physicians care, surgery, pharmacy, and hospitals separately as they developed independently of each other. Chronology of developments is maintained as far as possible though overlapping topics produces some duplication.

The Beginning of European Medical Care

A papyrus medical text dates from about 2000 BCE, approximately 4000 years ago. An even earlier cuneiform, or clay tablet, with medical text, found in the city of Ur, Iraq, is dated about 150 years earlier. Written reference is made to physicians in the First Dynasty in Egypt, around 3100 BCE. Hippocrates lived in 440 BCE, nearly 2500 years ago. Some recognition and definition of medical care has been present in the eastern Mediterranean for over 4000 years.

“Conditions fostered an exuberantly varied world of disease.” wrote Park when describing the lifestyle and health of the Medieval period – a universe of hunger and disease where most lived at a level of bare subsistence, lacking adequate housing, fuel, clothing, food or drink. The human diet was deficient with periodic famine and chronic malnutrition. Personal hygiene was marginal. Illness was arbitrary, inescapable, serious, frequent, and preoccupying. Little was done to manage food supply and hunger. Gregory adds that any food surplus was largely unprofitable and any deficiency was potentially catastrophic. Transporting surplus foods such as grains, to an area of need was difficult and costly.

In that society and life with rampant diseases, there was also magic. Dawson describes magic as important with life, and therefore important with illness. Magic was defensive, protective, preventive, productive and prognostic in people. He refers to magic as being the parent concept of medicine. Illness resulted from possession of a person or his body by a spirit or demon causing illness and suffering. The simplest treatments were asking or telling the demon or spirit to leave the patient’s body. A stronger treatment might add recitation of an incantation or a warning to the demon. To these could be added specialized substances with strong or aversive taste or smell, to eat, drink, or to burn and fumigate the afflicted person. Dawson quoted a chant used to treat some illness or condition. The healer chanted to the demon causing the condition, “I have made a charm for him against thee, with onion that destroys thee, and honey which is sweet to the living.” Writing of medieval medicine, Tease adds that, “monastic medicine, like lay medicine, had a large content of superstition and magic. Whilst the pagans relied on their incantations and charms, the monks firmly believed in the power of the saints and holy relics.”

The theoretical basis for Medieval medicine and treatment was based on the humoral or dietetic medicines of ancient Greek writings. These had been communicated or translated via Islam wrote Anglicus. From the 11th Century on, according to Anderson, Islamic medical documents were being translated to Latin for use in Europe. Humoral teaching found the “body composed of four humors:

blood, choler, phlegm and melancholy. Each of these had two qualities.” Blood was hot and moist; choler, hot and dry; phlegm, cold and moist; and melancholy, cold and dry. Health was the perfect balance of these humors and their qualities, disease and illness was a state of imbalance. Treatment was the process of restoring equilibrium.

The humors, as an explanation of illness, was being replaced or superseded by “chemical” explanations during the Renaissance, reports Debus. In the second half of the 16th century medical writing began to challenge traditional medical teaching and more complex medicines were in use.

The cures or physics, the practices used to treat illnesses, were so varied that no comprehensive catalog exists of either the procedures or ingredients used in treatments. The nature of the substances is very broad; the uses, whether they were burned, eaten, drank, applied to the skin, worn or buried, were so varied that it is difficult to list them in any particular order. Lewis arranges several hundred, listed alphabetically. Touwaide reviews some of the healers’ ingredients used between the 5th century BCE and 2nd century CE. Cumin, pumpkin, laurel, rose, honey and wine are included. More rare and expensive were myrrh and incense. Pliny the Elder used blood from an elephant. Also, onions, figs, dill, cumin, coriander, caraway, fenugreek, and castor oil. A 4th century BCE Greek list included pine nuts and honey, and a poultice of wine and ashes. Roman treatments used wet wool applied with various compounds including vinegar, rose oil, sulfur or pitch. Ancient Egyptian compounds included ox liver, pelican and crocodile excreta, and bat blood and wine. Papyri lists have peas, wheat, figs, garlic, leek and copper. Sulfur, goose fat and wax were used. Most commonly used plants were gourd, and also anise, coriander and cumin. Dawson translated Egyptian medical papyri and found onions, figs, dill, cumin, coriander, castor oil and hundreds of others. In Egypt, hartshorn, (deer horn), and pomegranate were used.

There are several compendia of the medical plants referred to as *Medica Materia* written and available to early physicians. Documents from the training of Dr. Tolmie and Dr. Whitman show they both used these volumes. The books by Lewis from 1791 provide two volumes of information on the plants and uses. From Biblical and Rabbinical sources Jacobs lists over 700 plants and their medicinal uses. Variations on chicken soup with additions of lemon, leek and coriander are listed and effectiveness is assured in the 1100’s by documents reviewed by Jacobs. In her article in [The Journal of Ethnopharmacology](#), De Vos examines the continuity of some of the ingredients from ancient to Medieval to early modern times, a period from 5th century BCE to the 19th CE.

Pharmacy

Arabic texts about alchemy were translated to Latin in the 11th century, and these were translated into English and European languages in the 12th century. The Arab laboratories had many materials and pieces of equipment; flasks, mortar and pestle, lamps and hammers. There was vinegar, but no plants or organic materials according to Tease. Medical compounds had beginnings in some of the practices of alchemy.

The word “apotheke” or “apotheca” referred to an architectural structure: a storehouse, especially a storehouse for commodities sold by a pharmacist, with sections for storage, preparations and sales. During Medieval times drugs were included in the commodities known as “spicery”, and later became known as “apothecary’s wares”. The more bulky foods, dyestuffs and non-medicinal products became known as “grocery.” From the late 1100’s the person trading in “spicery” or “apothecary wares” was known as a “spicer.” By the 13th century he was known as an apothecary, pepperer or spicer. By the late 12th century the term apothecary had a pharmaceutical meaning in England. Apothecaries were often also involved in the spice trade and could obtain exotic substances. The East India Company expanded the variety of drugs available. The term “pepperer” had disappeared by the 17th century. In Paris a school of pharmacy opened in 1777. In 1790 the Society of Apothecaries was formed. By 1815 apothecaries were provided classes in anatomy, botany, chemistry and six months hospital experience.

Some ingredients appeared and were used for a short period before they disappeared, others were used for many years. Some ingredients were listed with unknown names. Goose fat, wine, honey, wax, and castor oil were readily available and were often used. Items that were used in medicines, “physicks,” physics, or cures over the centuries include cumin, coriander, rhubarb, cloves, cinnamon, nutmeg and mace, hartshorn, onions, leeks and garlic, and figs. Rhubarb was commonly listed as an ingredient. It appears in the 1777 Shipmaster’s Medical Assistant as tincture of rhubarb along with honey, calomel, burnt hartshorn and other items. Rhubarb appears in the 1617 and 1639 editions of Woodall’s Surgions Mate. After opium became available it was often included in the medicine chest. Calomel and laudanum, containing opium, were also common.

David Thompson, traveling to the Upper Columbia River in 1807, carried rhubarb, cinnamon, cloves, mace and nutmeg. Lewis and Clark had rhubarb, cloves, nutmeg and cinnamon. Narcissa Whitman treated children with poultices of onion. In Wood’s book on Therapeutics: Its Principles and Practice,

published in 1894, owned by William Fraser Tolmie of Hudson's Bay Company, a section on "Local Remedies" listed red pepper, black pepper, cinnamon, cloves, nutmeg, ginger, allspice, cardamom, orange peel and rhubarb for treatments. In George Wood's The Dispensary of the United States of America, copyright 1849, inscribed "F. Barclay 1860" and included in Tolmie's estate collection and sale in 1937, four sections are included on rhubarb: rhubarb in general, Chinese Rhubarb, Russian Rhubarb, and European Rhubarb. John McLoughlin's correspondence of November 1830, from Fort Vancouver, requests a supply of four pounds of rhubarb. The order was later reduced to two pounds. Dr. Tolmie used rhubarb to treat himself for heartburn on board the ship when enroute to the Columbia in 1833. It was apparently the 20th century before some of the "medicines" or "physics" were moved from the medical chest to the bakery and patisserie spice cabinet. Cumin became an essential flavoring in "traditional" Southwestern chili con carne.

Some spices didn't leave the medicine cabinet. Milne, examining some of the medications used during the Spanish flu pandemic of 1918 –19, following the First World War, found advice for preventing influenza included "...inhalation of certain essential oils and doses of drugs, such as quinine or cinnamon have been adopted for purposes of protection..." The British Pharmaceutical Codex was amended in 1942 to document a number of preparations withdrawn or amended over concerns over their toxicity. Quinine, she reports, can cause blindness, convulsions, coma and respiratory arrest. Calomel, otherwise known as Mercurous Chloride, she added, was used as a purgative and as an ointment until its toxicity was discovered.

Surgery

Medieval surgery wrote Talbot, was performed by the barber-surgeons. The spellings "surgion", "chyrurgerie", and others were used. The practices including cupping, bleeding leeching and giving enemas as well as surgery. Dr. Lowe's "Instructions to Chirurgerie," explained, "for the patient must first be told of the danger because often death ensues, as you have heard, either from apprehension, weakness or loss of blood..." In the Roman empire there were bone saws, trepaning tools for cutting round holes in skulls, and drills for bone and also a text on surgery. Toolmakers in the second century entered surgical tools such as scalpels and forceps into competition. Some of the tools were made with copper or bronze with silver handles, others with artistic inlay. Guthrie reprints an illustration from 1687 of instruments for removing arrowheads and darts. Drawings of five forceps are included. There is also an illustration from 1517 of a winch for setting fractures. In England. In 1745, barbers and

surgeons had become two separate occupations, and in 1800, the Royal Society of Surgeons received a charter. In the second half of the 1700's, in France, training for physicians and surgeons were combined.

In the United States, the first record of surgery was on December 25, 1809 when Ephriam McDowell operated to remove an ovarian tumor – without anesthetic. McDowell had studied at Edinburgh in 1792 – 1794 and was practicing in Danville, Virginia. The patient, Jane Crawford, who sang hymns during the surgery, recovered and lived for over thirty years.

In 1846 surgeries became less agonizing when ether was successfully used as an anesthetic at hospitals in both London and Boston. Lister published about antisepsis in 1867, and in September of that year, spoke on antisepsis at a medical conference at Philadelphia. He later visited New York and Boston. A surgery at Presbyterian Hospital, New York, in November 1876 was the first using antiseptic practices in the U. S. The use of ether, the practice of antisepsis or “Listerism” for reducing pain, combined with treating large numbers of injuries requiring surgery or amputation in the Crimean and U. S. Civil wars began a new era of surgery.

Hospitals

Care of the sick during the Medieval period was incumbent on the Christians wrote Guthrie, with many hospitals being built in the late middle ages. During the Crusades, in 1311, the Knights of St. John built a hospital at Rhodes that is still standing. London hospitals were first built in 1123 and 1215. An illustration of a Paris Hospital in the 13th Century shows two patients per bed. By the 14th Century hospitals were operated by municipalities rather than churches. Hospitals were peripheral to medical care in the 1700's wrote Granshaw, and financed with voluntary contributions. They were operated for a restricted group of patients for a very limited number of medical or social needs and complaints. Medieval hospitals were founded by laymen as a means of buying grace and also as a means of achieving social status. Donors could admit patients, and a patient needed to have a benefactor to be admitted. Rules of the hospitals were focused on keeping the patient at the hospital and sober. The practice of donors admitting patients was continued in Canada where it was found that in Kingston in 1853, over half the patients were admitted by someone other than a physician as an act of charity by a donor.

Bynum reports of the resulting hospital population, “...the sick were herded together with petty criminals, beggars, the infirm, orphans, prostitutes, the unemployed and the mad.” Miller describes the

resulting facility as “ersatz homes for the homeless poor.” A 13th Century Paris hospital dormitory for patients was referred to as the “infirmary of the poor.”

In other regions hospital type facilities were more medically focused. In the Byzantine Empire of the 4th to 11th centuries care was different. In Greek, the facilities were known as “xenones” and they extended to Gaul and Italy. The xenones, also supported by Christian churches and private donations, promoted clinical teaching, and were closely linked to the communities. Moslems opened some bimaristans, (houses of the sick). Nestorians opened hospital type facilities in 6th Century Persia.

Colonial North American Medical Care

Early North American settlers did not have trained medical staff. Captain John Smith, injured in the colonies in 1609, returned to England for medical care. “Doctor” Fuller arrived in 1620 but returned to Europe after a brief stay. Later, but before 1628, the first resident doctor, Dr. John Pott, arrived. At the time of the Revolution, wrote Siegerquist, the North American Colonies had 3,500 physicians, but only 400 had degrees or training. Others had trained through apprenticeships. Bowers reported that between 1747 and 1800, 117 American physicians had received degrees from Edinburgh, and many more had studied at Edinburgh, but had not received degrees. Graduation and receiving a degree was apparently of less importance than being accredited by a licensing board.

Bauer wrote that in 1751 Benjamin Franklin and Dr. Thomas Bond opened the first hospital in North America, the Pennsylvania Hospital. In 1749, the Philadelphia Academy opened, later becoming the University of Pennsylvania. The Medical School, the first in the country, began in 1765. Kings College, which became Columbia University, opened a medical school in 1767; and Harvard Medical School began in 1782 –83. Norwood provides estimates of the numbers of medical students in the U.S. at different years. In 1810, he estimated there were 650 attending with 100 graduating. In 1840, 2500 attending with 800 graduating; and 1880, 12,000 attending with 3200 graduating. In 1900, 25,000 attended and 5200 graduated.

In Mexico, or New Spain, the first physicians recorded were Diego Pedraza and Francisco de Soto, a barber-surgeon, both began in 1525. Hernan Cortes began building the Hospital of Jesus about 1522.

The first Canadian medical school, the Montreal Medical Institute, associated with the Montreal General Hospital, opened in the Fall of 1824 with 25 students. In 1828 it became the medical faculty of McGill College. In 1821, strong feelings about the development of the medical school had become a public dispute and developed into a challenge to a duel. The participants were seriously wounded, one with a chest wound, the other with a shattered arm. Both recovered.

Medical Education and Training in the 1700’s

Books, papers and articles trace the influence of Herman Boerhaave, of Leiden University in Holland, on the structure and content of medical education for several generations of physicians. His influence was important to medical training at University of Edinburgh and reached through Britain to North

America. Herman Boerhaave, born on December 31, 1668, was raised in a deeply religious, Calvinist, and scholarly family. An uncle was a pastor in the Dutch Reformed Church. As a child he was taught Latin, Greek, and history and the New Testament. At age 11 he could translate. At age 15 he began studies of theology and philosophy at University of Leiden. For much of his life, he began his day with an hour of meditation and reading his Bible. He graduated in philosophy in 1690 and, after he graduated in medicine in 1693, he worked as a medical practitioner and continued his studies in medicine and chemistry. Between 1690 to 1701 the university library was enlarged. Boerhaave assembled the catalog of the expanded library. In 1701 he took a position as “Reader in Medicine.” By that time he had developed an interest in empirical science.

Grell wrote that, “in the first decades of the 18th century medical students from all over Europe, especially the British Isles, flocked to Leiden to hear “the great Herman Boerhaave.” His lectures were the “starting point of a fundamental modernization of the medical curriculum and teaching methods.” He applied some of the results of the scientific revolution to the medical faculties. His students, “improved medical faculties all over Europe,” reported Grell. Boerhaave’s influence extended far beyond his classrooms. In 1726, the nine physicians who started the medical faculty of University of Edinburgh were alumni of Boerhaave. Sigerist wrote that though few American students studied under Boerhaave, many of them studied under men at Edinburgh who had been his students in chemistry, physic, anatomy, surgery, medicine and botany. The text books, in Latin, used at Edinburgh, were by Boerhaave. Sigerist added, “toward the middle of the 18th century, American students came to Edinburgh to study medicine in ever increasing numbers. In Edinburgh they were taught the principles of Boerhaave’s medicine. They went home to America with Boerhaave’s books, applied his principles to their practice, and passed them on to their apprentices. No wonder that Boerhaave’s medical system dominated in American medicine for decades.” Between 1747 and 1800, Bowers reports, 117 American medical doctors received degrees from Edinburgh. Many more studied at Edinburgh but did not graduate. (One of these was Dr. Simon Fraser, uncle of Dr. John McLoughlin of Hudson’s Bay Company, Fort Vancouver, who studied medicine at University of Edinburgh in 1787 – 1789.) The first medical texts printed in the U. S. were by Edinburgh professors, the first American Formulary followed the Edinburgh Pharmacopeia. Wood, in his preface to the 1849 Dispensatory of the United States of America wrote, “The pharmacopeias of London, Edinburgh, and Dublin, have, therefore have been incorporated in all their essential parts, into the present work.” Dr. Benjamin Rush, friend of Jefferson and medical adviser to Lewis and Clark expedition, trained at Edinburgh. In 1809, Dr. Rush wrote that in 1860 the system of Dr. Boerhaave “then governed the practice of every physician in

Philadelphia.” The Canadian medical school opened at Montreal in 1824 was organized by five physicians. Four, Drs. Stephanson, Holmes, Caldwell, and Robertson studied medicine at Edinburgh, the fifth, Dr. Loedel, never lectured and retired the first year. The school, wrote Shepherd, “was founded as to its organization and methods of teaching on the Edinburgh school which in its turn received its inspiration from Leyden”(sic). Although some writers have reported that Rush, as a student, studied under Boerhaave, that would not have been possible. Boerhaave died in 1738, Rush was born in 1746.

Knoeff reviewed some of Boerhaave’s practices and reported that in some years he admitted very few or no patients to the hospital and questions how he could have taught clinical practice. From 1721 to 1736 he admitted an average of only three patients per year; between 1732 and 1736 he admitted none. Sigerquist states Boerhaaves’s method and principles were superseded in the last quarter of the 18th century by the teaching of Cullen and Brown. “The most pervasive Edinburgh influence in America in the 18th and early 19th Centuries...was William Buchan’s Domestic Medicine.” 80,000 copies of 19 editions were published in England. The first American printing in 1771, went to 35 printings.

Medical Books on the Columbia

Though there are no complete bibliographies or collections of medical books used by doctors on the Columbia, there are some lists, journals and archive collections that suggest some of the literature and medical information that might have been used. The Practice of Physic by William Cullen, an Edinburgh medical graduate, mentioned by Sigerquist, was available to the Northwest doctors. In his journal, Tolmie refers to it on October 12, 1830: “Read forty pages of Cullen’s Practice of Physic in the evening.” The catalog of Fairfield Medical College, attended by Dr. Whitman, recommended Cullen’s Practice of Physic for students in 1825. Along with other early medical books, a very fragile original copy of Cullen’s book is in the collection at the Library of Washington State University. It had been part of the Walker library at Tshimakain Mission, and possibly is Whitman’s copy. Cullen had been a ships surgeon, then worked as an assistant in a London apothecary before going to medical school in Edinburgh and graduating in 1840. The website for The Cullen Project lists many of the medicines cited or recommended in his *materia medica*; (cullenproject.ac.uk/data/items/ingredients). Other medical books owned by Dr. Barclay and by Dr. Tolmie are in the Archive of National Park Service at Fort Vancouver.

A non-professional medical care book that was very influential and possibly in use by settlers on the Columbia was John Wesley's Primitive Physic: or an Easy and Natural Method of Curing Most Diseases. Wesley, known primarily as founder of the Methodist Church, operated a dispensary for the poor in London from 1746. The first edition of Primitive Physic was printed the following year. The book of remedies went through over 32 editions in England by 1828, continuing in print after Wesley's death in 1791. Foreign language translations were made. Between 1764 and 1839 seven American editions were printed. When Oregon Territory settlers started west, editions printed in 1839 and before were available and may have been carried. Recommended treatments and practices were remembered and passed down. Facsimile editions are still printed.

For each illness, Wesley's book offered a selection of several possible remedies, often with one or two ingredients, sometimes including common foods. The conditions being treated were not defined in detail. Baldness, he wrote, was treated by rubbing with onions morning and evening, then with honey. A bruise could be treated with an application of treacle, honey, or parsley and butter. A burn could be treated with any of nine different treatments including application of onions, dwarf elder, rum, or oil and ginger. A sore throat would benefit from various combinations of "roast fig", rose water, apples and apple water or, "snuffing a little honey up the nose". Treatment for deafness was a clove of garlic coated with honey and put in the ear at night. A tooth ache remedy was also a clove of garlic in the ear, or on the tooth. He also suggested application of "bruised garlick" for the bite of a viper or rattle snake. Though the condition was neither described nor defined, a child with "windy rupture," could be cured with a poultice of hot "cow-dung" and cumin seeds. The cure commonly took two days. Scurvy, he wrote, could be cured by living on turnips for a month, and ringworm by an application of rotten apples or pounded garlick. Hawes, an apothecary, criticized Wesley's book, referring to it as "an injudicious collection of pretended remedies." The large number of men and boys on the Oregon Trail with the name "John Wesley" may indicate the significance of the man and his medical writings.

The First Doctors

European medical men first appeared on the east and north east coast of the Pacific Ocean as crew members of explorers' ships. Sometimes a name of a doctor is listed, but sometimes there is only a reference to the position of ship's surgeon. There is little detail about treatments provided. Larsell reports that Thomas Hood, who sailed with Francis Drake as ship's surgeon on the *Golden Hind* in 1579, later became a physician in England. Some speculate that Drake reached the Northwest coast and perhaps reached Vancouver Island. Larsell's list includes the Russian ship's surgeon George

Wilhelm Steller and surgeon's mate Betge, both sailed with Vitus Bering in 1741 on his ship *St. Peter*. On the second ship on the expedition, the *St. Paul*, there was another surgeon's assistant, Lau.

In 1774, Juan Perez, a Spanish explorer sailed north from San Blas to Alaska on the ship, *Santiago*. His crew included an unnamed ship's surgeon. The next year, Captain Bruno Hecata, sailing on the same ship, *Santiago*, and accompanied by a second ship, the *Sonora*, sailed north. A landing was made on the coast of Washington to claim the territory for Spain. The landing party included the ship's surgeon, Davalos or DaVilla, writes Larsell, making him the first European medical practitioner in the territory. He may also have been the unnamed ship's surgeon on the 1774 expedition.

Captain James Cook arrived on the Pacific Northwest Coast in March 1778 with the ships, *Resolution* and *Discovery*. Between the two ships, there were three surgeons or surgeon's mates, William Anderson, Mr. John Law (or Low) and Mr. David Samwell. When Anderson died off the coast of Alaska, the other two were reassigned and promoted to provide medical care for the two ships.

A lengthy Russian expedition to Alaska began in 1786 under Captain Joseph Billings. Three ship's surgeons were with the expedition at the start, Dr. Merck, John Main, and a Mr. Leman. All made landings in Alaska. In 1791, states Larsell, two ships from the expedition wintered at Unalaska. They had two ship's surgeons, surgeon-major Robeck and surgeon Allegretti.

Dr. Archibald Menzies was at Prince William Sound in Alaska with Captain Colnett on the ship *Prince of Wales* as ship's surgeon from 1786 to 1789. He was appointed ship's surgeon for Vancouver's ship, *Discovery*, in 1790, after the first surgeon, Mr. Cranstoun, became ill.

The Spanish settlement at Nootka on Vancouver Island included a resident surgeon and a visit by a ship's surgeon. Archer wrote that in 1794, Luis Pava was a surgeon who had been at Nootka for three years. Holt adds that Dr. Jose Mariamo Mozino was at Nootka with Bogeda and Quadra in 1792. Previously a ship's surgeon, or surgeons's mate, John Mackay, had been left at Nootka Sound by Capt. Strange in July 1786. He left on another ship in 1787. Menzies reported that there was a hospital at Nootka Sound in 1792.

Early North Pacific Coast Hospitals

Before Gray and Broughton's ships had entered the Columbia River in 1792, there were records of hospitals in the North Pacific region and on the Pacific Northwest Coast. Captain Cook's exploring expedition left Unalaska in the Aleutian Islands in October 1778 bound for Hawaii. On the return voyage in April 1779, after wintering in Hawaii, they anchored in Avacha Bay on the Russian Kamchatka Peninsula. Their anchorage was near the village of St. Peter and St. Paul, (Petropavlovsky Village). Journals refer to "the Russian Hospital which is near the town of St. Peter and St. Paul". In July and August 1788, two Spanish Ships, the *San Carlos* and the *Princesa*, were at Unalaska. Archer wrote that they were offered hospital care for several sick seamen at the Russian community. During the winter of 1807–1808, a ship's surgeon, Karl Mordgorst, remained at Kodiak where he set up a small hospital. Among other treatments he provided, he amputated the fingers and both feet of a shipwrecked, frostbitten, seaman. Russian medical care expanded west to the mainland of Alaska. Fortune also wrote that between 1818 and 1820 a ten-bed facility was set up at Kodiak and, at the same time, a hospital was built at Sitka. A ten-bed facility was built at Unalaska in 1832, but it was referred to as an eight bed facility in 1834. In 1829 there was a surgeon reported at Sitka, and also in 1829 an eight-bed facility was built at Atka, just west of Adak in the Aleutian Islands. There is suggestion that what was called a hospital may have merely been a cleaner and better place than the usual dwelling.

The Sitka hospital in the 1830's was a twenty four bed facility, with a separate four bed section for women and a space for hanging dry herbs used in compounding medicines. The hospital was enlarged to forty beds in the early 1840's. After George Simpson made his second visit to Sitka in April 1842, he reported that the hospital "would be no disgrace to England." He wrote that the hospital expense "must be very heavy." The types of cases were primarily scurvy, "typhus, continued fevers, pulmonary complaints, syphilis, affections of the eye, and haemoptysis." Before leaving on May 9th, he visited a convalescent center at the hot springs about twenty miles north of Sitka. In other regions of Alaska and the Aleutian Islands other hot springs were also used by natives and sailing ships' crews for medicinal purposes.

Andrews reports that the Russian American Company maintained a hospital at Kodiak as well as at Sitka. By 1862, the company employed three doctors, eleven apothecaries and surgeon's assistants, five apprentice apothecaries and surgeons and two midwives and two assistants. When Alaska was transferred to American possession in 1867, there were four established Russian hospitals, though other

reports indicate there were only two hospitals. The Sitka Russian hospital was described as a 15 bed facility, the Kodiak report included a hospital and also a surgeon's house. In 1885 three Catholic nuns, all nurses, opened a hospital in Juneau. In 1888 a Presbyterian mission opened a hospital in Sitka.

Explorers' Medical Care

In 1792 Gray discovered the mouth of the Columbia River and ships started to explore the river. The ship *Chatham*, commanded by Lieutenant William R. Broughton, made the first detailed exploration. Before the arrival of the doctors and European style medical care, there were records of severe, life threatening injury and illness being successfully treated by explorers and traders. Lewis and Clark treated for a gunshot wound, David Thompson treated one of his men for a severe abdominal problem, and Alexander Henry cared for a man with two arrow wounds from an Indian battle. Some types of medicine and medical supplies were carried and care was provided.

In July 1806, when Thompson's westbound expedition had first descended the west slope of the Rockies and reached the Columbia River, in present British Columbia, one of the men became ill. Thompson wrote, "Beaulieu has been these ten days so very ill...that we despaired of his life..." In another quote of Thompson, he states, "He was a clever active man and I regretted the loss of his service; as usual I attended him..." An examination found a small barb piercing outward through his abdomen. Thompson enlarged the site with a lancet and extracted the barb with pincers. It was identified as a porcupine quill, probably swallowed when they had cooked and eaten a dog several days earlier. The pain ceased, Beaulieu recovered and continued on the journey.

The next month, on August 12, 1806, the Lewis and Clark expedition was eastbound in Montana when one of the men shot Captain Lewis mistaking him for an elk, wounding him in the thigh and buttock. Though there is little detail of medical care for Lewis, there are reports of his condition: August 28th "Capt. Lewis had a bad nights rest and is not very well this morning." and, "Capt. Lewis is mending slowly", two weeks after being shot, "Capt. Lewis is Still mending and he walks a little." On September 3rd it was written, "Capt. Lewis is so well as to walk about with ease", and, about a week later, he had entirely recovered and could even run, though "parts are yet tender." The only reference to medical care is that the exit wound was covered by a "tent", possibly reference to a bandage.

Alexander Henry wrote in his journal from Astoria in January 1814 of the injuries received by Mr. Stewart in a battle with Indians upstream on the Columbia. Stewart (also spelled 'Stuart') was

wounded by arrows in the side and shoulder on January 7th. When he arrived at the fort, “He looked almost dead.” Stewart’s wounds, wrote Henry, “trouble him very much,” but later he wrote that the wounds that had given him much pain had formed an abscess and burst, and “he feels much relief.” On the 30th, “a great quantity of matter came from Mr. Stewart’s side — relieves him much and swelling has fallen.”

Two medicine chests are listed in the Astoria inventory of 1814 though their contents are not listed. One, valued at 25 dollars, may have been shipped to Spokane House, the other, at Astoria, was valued at 10 dollars. The only treatments mentioned for Mr. Stewart’s wounds that he reported were poultices of biscuit and water. Although Thompson, Lewis and Clark, and Henry, as well as Tolmie had supplies of medical equipment and medications available, there is little use of them recorded. Possibly recovery was due more to good health and individual resistance to disease and infection, and also because the injuries and wounds did not damage major bones, cut large arteries, nerves or veins. The patients were located where they did not have to walk, ride horseback or struggle through icy mountains. They had the good fortune to be where they could rest, have adequate food and warmth, and where they could be transported reclining in a canoe on a calm river. There are records of Charles Boucher being left behind with the Pacific Fur Company at Astoria by David Thompson in 1813 or 1811 as “he was too weak to return.” Another journal entry of 1813 sadly reports, “this morning, after an illness of 20 days, during which we carried him on a stretcher, died Jean Baptiste Boucher, an honest man.” Provision had been made for disabled and terminally ill men.

Columbia River Hospitals and Doctors

Elliott’s article on the surrender of Astoria in 1818 includes a map and roster of the population. The map shows a structure identified as, “Dwelling house and hospital – 15 feet square.” Morris quotes an earlier writer about the Astoria hospital, “In August and September of 1812 a house 45 by 30 feet was finished. It was used as a hospital for the sick and as a lodging house for the mechanics.” The list of personnel includes “surgeon.” Both Holt and Larsell briefly summarize the details of five physicians who were each briefly at Astoria or Fort George. Mr. Downie, a surgeon and Dr. White, both ended their lives when they reached the Columbia River. Dr. White threw himself into the river and drowned, Mr. Downie shot himself. A Doctor Crowley was sent home soon after his arrival to stand trial for murder. Doctor John Scouler, (also spelled “Schuler”) had studied at University of Glasgow, was ship’s surgeon on the *William and Anne*, visited Ft. George twice in 1825, first in April and May and again in September. He was not assigned to either Fort George at Astoria or the newly established Fort

Vancouver. Little of his journal pertains to medical work, though he does describe setting a seaman's broken leg while still at sea. He traveled to Fort Vancouver and met Dr. John McLoughlin who had arrived the year before. Fort George was described as completely abandoned in September 1825.

Alexander Henry's journal of activities at Astoria in 1813 and 1814 and information in O'Neil identify Richard Swan as the ship's surgeon on the ship *Isaac Todd*, sailing from London to China, stopping at Astoria/Fort George on the Columbia River. When the ship had anchored at Monterrey, California in mid January 1814, eight men deserted. The *Isaac Todd* continued on to the Columbia River, arriving April 22 and remained until September 26. Richard Swan is listed as the ship's doctor. In Coue's version of Henry's journal, Dr. Swan was introduced to him on board the ship on April 24, 1814. On the 25th, he wrote, "...the long boat came again with the doctor, who brought medicine for the sick," and he returned with medicine again on the 29th. In his journal, Alexander Henry notes that on May 5th, "the long boat from the *Isaac Todd* came over with the doctor as usual to attend the sick." On the 17th, when the long boat returned to the ship, it was carrying the doctor, "who has visited his patients." In a two week period Henry wrote that Dr. Swan came ashore to see patients seven times, twice bringing medicine. On the 20th, when the journal ended, he wrote again, "the Doctor came over in the Jolly Boat." Henry was sailing out to the *Isaac Todd* two days later when the boat capsized and he drowned.

There was need for the physician at Astoria. Henry reported that there were 10 men in the hospital on April 11th, 1814, and a week later there were eleven in the hospital, "some very ill." Before the *Isaac Todd* arrived, medicine for treating venereal disease was limited with only a small supply of mercury remaining. Later he wrote that "finding our sick here had taken a sufficiency of mercury, they were this morning put on a course of 'corrosive sublimate'."

Beginning with the arrival of Dr. John McLoughlin at Fort George/Astoria on November 8, 1824, physicians were assigned to missions and forts in the area, rather than being temporarily in the area while assigned to a ship. The Fort George/Astoria hospital had been established by 1814 and was abandoned by 1825. Another reference to a hospital came in 1833, years later, when Dr. Tolmie wrote of Dr. Gairdner establishing a hospital at Hudson's Bay Company's Fort Vancouver. In his journal entry for Thursday, November 14, 1833, Tolmie reported, "Intermittent fever has been very severe this season, Gairdner has had an hospital erected and has treated 2-- 300 cases." A sketch map from 1846 by Covington, reproduced by Rich, shows a hospital building outside the bastions of the fort near the river. A sketch map from July 25, 1841, labeled the Emmons map, identifies a building inside the

bastions as “Indian Trade store Hospital Dispensory &t”. A third sketch map, by Mansfield, made in 1856, shows a hospital building in the center of the fort, outside the bastions while the structure that had been the trade store and hospital is identified as “Store.” Between 1841 and 1856 three different structures were identified as a hospital.

In the Fall of 1830, before the arrival of Tolmie and Gairdner, John McLoughlin reported the impact of “intermittent fever”; “40 people laid up with intermittent fever,” later, “52 people sick with intermittent fever,” and on the 15th of November, he reported 70 patients, exclusive of women and children, in the hospital. His correspondence in the Fall of 1830 reports, “the fever broke out with increased Violence...”, “...intermittent fever is prevailing here to a great degree...” “...so many of the Sailors in Hospital...”. In addition to the people in hospital, he refers to 48 to 75 people on the sick list. A clerk, George A. Allan, assigned to assist Dr. McLoughlin attend to the patients with intermittent fever in 1832, wrote in an 1833 letter, reprinted by Larsell, “my tramps through the men’s houses with my pockets lined with vials of quinine...” Apparently, care was given at homes and at a hospital.

Simpson, in 1841, wrote that the hospital was located outside the walls of the fort, as were the stables and dwellings for the servants. He explained that there was ample employment for the surgeon, with the cases of “fevers, fractures and neglected syphilis” though there were seldom more than eight or ten patients at the hospital.

Following the ships’ surgeons such as Scouler, missionary doctors, led by Marcus Whitman and Elijah White arrived. Following them came the settlers and the physicians who also came to the Columbia Basin and Oregon Territory to settle. A roster of some of the settler physicians, along with the available history, biographical summaries, their locations and practice is provided by author, Dr. Larsell.

Dr. Elijah White arrived at the Methodist Mission on the Willamette in 1837, left for the East in 1841 and returned a year later as the government Indian Agent. As the mission doctor, he had established “a large hospital” near the doctor’s dwelling. By 1841, Wilkes refers to the hospital structure as “what is known as such though it appears to have been converted into dwellings now for the missionaries.” Other doctors associated with Lee’s Methodist Mission included Ira L. Babcock, John P. Richmond and Henry Saffron (or Saffaron), who all arrived in June 1840. Richmond went to Ft. Nisqually on Puget Sound, Saffron was at The Dalles in 1847. Dr. Ira L. Babcock with his wife and child, were first

assigned to The Dalles mission, but were soon reassigned to the Willamette mission as the replacement for Dr. White who left the mission.

Though there is little reported about a hospital at the Marcus Whitman mission at Waiilatpu, Larsell refers to the mission having a “hospital room,” and also reports they, “set aside hospital quarters.”

Two other hospitals were established in the region in 1855 and 1858. The British Navy, needing a shore based medical facility had three huts built for a hospital at Esquimalt near Victoria in 1855. The location later became the naval shipyard. A more permanent structure replaced the three huts in 1862, and it was replaced in 1894. On the Columbia River at Vancouver, the Sisters of Charity of Providence had established their Mission of St. James in December 1856. In April 1858, they designated a portion of a building as a hospital. The hospital measured 16 by 20 feet, with the rest of the building being a laundry and bakery.

When the U.S. Army arrived at the U. S. Army Fort Vancouver in 1849, it was reported on October 17, that Capt. Rufus Ingalls had erected several buildings including a 20 x 40 foot structure to be used as a bakehouse and hospital. The troops that went on to Oregon City on October 9, were housed in six rental houses. These provided space for quarters, offices, store rooms and a hospital. As the U. S. Government established forts in the late 1850's, they also built hospitals as part of the forts. A plan drawn for construction of Fort Simcoe in January 1857, shows the location for a hospital. A hospital appears in sketches of June, 1857, and Summer of 1858 and is reported by Mansfield in October 1858. It was probably built in the first half of 1857. When the fort became an Indian Agency school in 1861 the building was used for a girls' dormitory.

Inspector General Colonel Joseph H. K. Mansfield toured the forts in December 1858 and issued his report in January 1859. He visited Forts Bellingham, Townsend, Nisqually, and Simcoe. Each had a hospital. Staffing, where it is recorded, included an assistant surgeon, a matron and a cook, sometimes additional staff identified as a steward, attendant, or nurse. Surgeons quarters were supplied. The physician at Ft. Bellingham was Assistant Surgeon Horace R. Wirtz, sometimes referred to as “Doctor Wirtz”; at Ft. Townsend, Assistant Surgeon John Fox Hammond; Doctor Stuckley was at Ft. Nisqually. Dr. Randolph and Keeney were both at Fort Simcoe along with Assistant Surgeon Joseph B. Brown. Brown was later replaced by Assistant Surgeon Anthony Heger. When Archer was traveling North

from Fort Simcoe with the infantry in August 1858, they were accompanied by Assistant Surgeon Keeney, while Assistant Surgeon Heger remained at Fort Simcoe.

Lt. Col. E. J. Steptoe reported from Fort Walla Walla on November 20, 1856 that the hospital and guard house were finished. A report in 1858 described the Walla Walla hospital as “a temporary thatched hovel twelve by fourteen feet with only four bunks, (one above the other) only three feet wide.” At U. S. Army Fort Colville the hospital was built in 1859 or 1860. Lt. Kautz refers to Assistant Surgeon Robert Orr Craig arriving at Fort Steilacoom from Fort Bellingham in July 1859 and joining him on a journey to Mt. Rainier. There is also reference to a Dr. Kuhn accompanying Col. Mansfield at Fort Townsend.

San Juan Island had three buildings known as hospitals during the occupancy by the Americans and British armies. At American Camp there were two adjacent buildings identified on a map as the old hospital and the new hospital. British Camp also had a hospital. Dr. Alexander Allan was assigned to the British Marine Light Infantry on San Juan Island in 1870 reported Longstaff.

Wilkes visited with Dr. Babcock, “the physician” at Oregon City in 1841, and also with Dr. William J. Bailey, “the practicing physician.” He reported that a Dr. Richmond had settled at Nisqually, but “was doing nothing.”

Boundary Commission

After the United States/Canada Boundary was determined to be the 49th Parallel in 1846, it required teams of British and American surveyors to identify the actual boundary on the ground. Both teams worked from 1857 to 1861. In addition to working along the 49th Parallel, members of both teams traveled extensively through the adjoining territories, up and down the Columbia and Yakima Rivers to reach work areas of the eastern portions of the survey. Both teams had medical staff who were some of the first trained European medical providers in the region. The physician for the American contingent was Dr. C. B. R. Kennerly, surgeon and naturalist, and also Mr. Joseph S. Harris, assistant surgeon and naturalist. Charles Clark was a surgeon’s steward, and John Brian was a hospital steward. For the British survey party, Dr. David Lyall, was “in medical charge.”

Budget and medical inventory for the American Boundary Team included bullet forceps, (\$3.00) amputating instruments, (\$24.00), and a case for “safe packing,” one walnut medicine chest, (\$18.00),

and heavy canvas coverings for the medical instrument case and the medicine chest, (\$2.00 each). Extensive lists of medical ingredients are provided, including \$114.66 for “medicine for hospital purposes.”

Both the British and Americans began the survey at Semiahmoo, near present White Rock, B. C. at the mouth of the Campbell River located just north of the 49th Parallel in Canada. The report of the American Camp, conducted in December 1858, signed by Col. Mansfield, Inspector General, lists acting Assistant Surgeon, I. H. Berrien on staff. A hospital is listed and described as, “A small apartment in one end of a shed, used for quarter-master supplies, constituting; a wardroom, dispensary and kitchen with a cooking stove. Medicines are ample with a steward and all well managed by Acting Surgeon Berrien.”

The U. S. Census for Semiahmoo, Whatcom County, Washington made in June, 1860, lists 40 people, including a surgeon. The surgeon was not Berrien. In the 1860 census, I. H. Berrien was listed as a surgeon with the Harney Depot Garrison, (later named Fort Colville). Medical staff at Harney Depot also included George Hammond, surgeon and John Brien, hospital assistant, a civilian employee of the Boundary Survey.

Another U. S. Army expedition, unrelated to the Boundary, traveled through the Yakima and Kittitas Valleys during May, June and July 1856. The journal kept by Major Granville Owen Haller provides general locations of their camps and makes brief mentions of several doctors. Haller’s company was accompanied by Dr. Randolph until he left on August 18, 1856, having been “designated” for Walla Walla. On June 5th he wrote of visiting Dr. Brown’s tent, (Brown had been assigned to Fort Simcoe) and on the 6th he wrote of sending a letter to Dr. Suckley at Ft. Steilacoom.

Medical Training

The training and education of physicians in the early 1800’s had great differences depending whether the doctor had chosen an apprenticeship, university education or a private medical school. Three of the early physicians living and practicing medicine on the lower Columbia River illustrate these differences. Dr. John McLoughlin had trained by completing an apprenticeship, Dr. Marcus Whitman had obtained his training at a private medical school, and Dr. William F. Tolmie had completed a degree at a university and medical college in Scotland.

Marcus Whitman would have preferred to be a clergyman but was encouraged to be a physician by his family because financing would not support a preacher. Drury outlines his biography in detail, reporting that he was apprenticed to Dr. Bryant in Rushville for two years. While he was a medical apprentice he also worked in a sawmill, shoe shop, tannery and taught school. He enrolled to study medicine at Fairfield College in Fairfield, New York in 1825, completed the sixteen week course, and graduated in January, 1826. After he received a medical license in May 1826, he briefly practiced in Sugarville, New York, then in Gainsboro, Ontario, Canada, a village west of Niagara Falls. After two years in Gainsboro he gave up practicing medicine and returned to Rushville, New York to study for the ministry in 1830. A year later, in October 1831, he again changed course, returned to Fairfield College for another sixteen weeks of medical study, finishing in January, 1832. He followed this with three years of medical practice in Wheeler, New York, 1832 – 1835. His training, experience and practice focused on the medical needs of villages, small towns and providing home care rather than seeing patients at infirmaries, clinics or hospitals.

The Fairfield College recommended a series of books for classes on surgery, obstetrics, chemistry, *materia medica*, and anatomy and physiology as well as Cullen's Practice of Physic. A class on botany was offered, but it was held in the Summer when Whitman was not present. Drury wrote that Whitman had requested that a selection of sixteen medical books be sent to him at Waiilatpu in April 1844.

In the Spring of 1835, he started west as a missionary but returned east in August for additional planning and preparation. After he and Narcissa Prentice were married on February 18, 1836, they departed the next day on a seven-month trek to Oregon Territory. They arrived at Fort Vancouver and were greeted by Dr. John McLoughlin on September 12, 1836, according to dates given by Drury.

McLoughlin had learned medicine through an apprenticeship and had not attended a college. Two uncles, Dr. Simon Fraser, and Alexander Fraser had influenced McLoughlin's life plans. Dr. Simon Fraser, who had studied medicine in 1787 – 1789 at University of Edinburgh, encouraged him to study medicine. Alexander encouraged him to join the Northwest Company. McLoughlin apprenticed with Dr. James Fisher in Quebec from 1798 for over four years, then applied to practice medicine in April, 1803. Then he joined the Northwest Company and provided medical care at several Canadian posts.

From his Northwest Company post at Kaminstiquia, in 1806, he wrote to his uncle, Dr. Simon Fraser, "...I would be much obliged if you saw or heard of any new publication worth studying that you would

procure it for me... also if you would let me know of any new discovery in medicine you hear of.” He was transferred to the Columbia and Fort George in 1824.

The journals kept by William Fraser Tolmie during the first year of his medical training and education and when he first reached Fort Vancouver in 1833 outline the subjects and books he studied, his observations and his medical interventions. Born in 1812, he was raised by an aunt after his mother died and he was sent to private schools in Edinburgh. Though the family was described as impecunious, he was assisted financially and provided counsel and direction by his uncle, Dr. James Tolmie. His medical training began in October 8, 1830, when he was eighteen, at the School of Medicine at Glasgow University. He wrote that classes did not start until November 9th, another month later, but on the second day of his journal he wrote of assisting as a wound dresser at hospital. He regularly was the wound dresser at hospital or infirmary. His schedule reports frequent attendance at amputations, numerous lectures and a great deal of reading. Each Tuesday he attended the Medical Society meeting and heard a lecture there. Regularly he had attended meetings at the library.

On April 4th, he wrote that he had his first ever midwifery case. Earlier, in November, he had checked out a book on midwifery by Davis from the library. In May, following the delivery, he enrolled in the midwifery course. Even as a beginning medical student, he conducted a number of procedures. He applied six leeches to a man for treatment of severe headache, and at the infirmary, he bled four patients, and extracted three teeth. Although he recorded several lists of medical instruments and some detail about medications, details about their use is scanty. Subjects of his readings, examinations, and lectures at the weekly medical society and at the school included: remittent fever, a drawing class, uterine hemorrhage, and inflammation, also chemistry, surgery and the spine, and the class in midwifery. At the medical society meeting he heard a lecture on the chemical properties of willow and other trees that are similar to quinine.

Correspondence from the University of Glasgow shows Tolmie attended classes in anatomy, chemistry, surgery and *materia medica* in 1830/31 and 1831/32. He became a Licentiate of the Faculty of Physicians and Surgeons of Glasgow in 1832. There are erroneous reports of him having an MD degree and having attended University of Edinburgh.

He became an employee of Hudson’s Bay Company on September 12, 1832 and three days later he was sent from Glasgow for North America, arriving at Fort George, Astoria, May 1, 1833. On board the

ship he continued his math studies with books about algebra and geometry. He also taught himself German and read a book on diseases of the heart including aneurisms of the aorta, as well as other medical subjects. His shipboard reading also included poetry and religious study. Shipboard companions included Dr. Gairdner and David Douglas, Botanist.

The specific details of the medical treatments provided by the early doctors are limited and the diagnoses are vague, though they appear to have been meaningful to the physicians. Treatment or physics offered by the physicians are unclear about ingredients, dosages, or administration or duration of use. There are some partial inventories of ingredients of the medicine chests, and there are some lists of medical tools, instruments and appliances. The lists often are requesting replacements or additions to the medical inventory so suggest what tools or medicines had been consumed in the community but not by any individual patients.

Two medications that appear in various pharmaceutical lists and were often relied on for relief were Laudanum and Calomel. The latter was compounded from Mercurous Chloride or petrochloride and Laudanu referred to various preparations that included opium, and usually containing some morphine and codeine.

Both Dr. John McLoughlin and Dr. William Tolmie listed some of the medications and instruments used or in storage at Fort. Vancouver. In a letter of November 11, 1830, McLoughlin requested $\frac{1}{2}$ pound gum camphor, $\frac{1}{2}$ pound sulphat quinine, 12 pounds best Peruvian Bark, 1 pound acetate lead, 1 pound crude opium, 20 pounds Epsom salts, and 4 pounds rhubarb powder. In his letter of November 24th, 1830, he repeated the request, but omitted the acetate lead and crude opium. He decreased the amount of rhubarb to 2 pounds and increased the amount of Epsom salts to 40 pounds. When he reached Fort Vancouver in May 1833, Dr. Tolmie soon started to put the “Apothecaries Hall in some degree of order.” Though he did not identify the medicines, he described the shelving holding the medicines. He did list the “very excellent supply of surgical instruments—an Amputating two trephining, two eye instruments, a lithotomy & a cupping case, besides two midwifery forceps & a multitude of catheters, flexible and silver sounds bougies, probangs, tooth forceps &c. not yet put in order.” Bougies were an instrument for exploring passages of the body; probangs, a sort of whale bone tongue blade; trephine or trepans, a circular saw used for cutting holes in the skull; and lithotomy was a process for cutting for a stone in the bladder. Several references are made to medicine chests, but little

recorded about actual use of medications or treatment provided except for the treatment and care of Mr. Pierre Charles.

Mr. Pierre Charles, one of the workmen, cut his foot with an axe in June 1833, suffering “a terrible wound.” Tolmie, seeing the man’s life was in danger, recorded that he got out his surgical instruments. Though he did no surgery, he treated the wound with a tourniquet, dressed it with adhesive plasters, administered “a powerful dose of Sulph:soda,” plus opium and calomel. He provided frequent reports on the infection in the foot and Pierre’s recovery and progress over the following weeks. On July 12, Pierre left on one of the ships.

Another list of medical apparatus and medication written by Dr. Tolmie from 1854 at Fort Nisqually is included by Dickey. Under apparatus he included a Wedgewood mortar and pestle, spatulas, syringes, lancets, glass bottles and earthenware jars. For medicines, fifteen items are listed; amounts are given as fractions of “tb”, an undefined abbreviation. Included are citric acid, Aromatic Sulphuric Acid, Tartaric, Tartrate Antimony, Extract Belladonna, Subnitrate Bromuth, Sulphate Copper, as well as chamomile flowers.

Two lists of medications were included in the papers of the Washington Territorial Volunteers’ Indian War Correspondence, both dated July 13, 1856, both from Mill Creek on the Walla Walla River. One appears to be a requisition for medicine supplies written to Matthew R. Burns, Surgeon for the 2nd Regiment of Washington Territorial Volunteers, sent from William Craig for use with the Nez Perce Indians, the second appears to be an invoice of medicines furnished by Matthew P. Burns, Regimental Surgeon, for use with the Volunteers and Indians. (Penmanship, spelling, and abbreviations used and copy quality prevent complete transcription.) The request list includes five gallons rum, 1 pound aloes, ¼ pound Pulv.(?) opium, 1 pound tincture opium, 1 quart turpentine, 10 pound Epsom Salts, ½ gallon Castor Oil, 2 pounds Cream Tartar, ½ pound Gum Camphor. Also, sulphur, sweet oil, 1 quart alcohol and adhesive plaster, and other items. The list of “medicines furnished,” includes 2 ounce of Calomel, 1 ounce Camphor, 1/4 gallon of castor oil, and 2 ounce of tartar emetic as well as 5 pounds of dried apples. Rum, alcohol, Epsom salts, adhesive plaster and turpentine, though requested, were not included on the list of items supplied by Surgeon Burns.

Dr. Matthew P. Burn’s name appears less than two years later in a retail advertisement printed in the Olympia, Washington newspaper, Pioneer and Democrat of January 21, 1859. In his advertisement Dr.

Burns “returns grateful thanks for the liberal patronage of the citizens of the last five years...” The advertisement lists nearly sixty items identified as “Drugs and Patent Medicines” that might be needed by the citizens of Olympia. Two changes appear: the compounds are identified as “drugs”, not cures or physicks or medicines, and many are identified by the name of the person marketing them. Halloway’s Pills, Hulls Patent Trusses, Guysolls Yellow Dock and Sarsaparilla, Graefenberg Pills, Davis’ Pain Killer, Wistar’s Balsam of Wild Cherry, Wrights’s Pills or Sands Sarsaparilla or Harlem Oil might have been supplied to the citizens of Olympia. Burns could also supply Dr. Burns Eye Water, Sweet Oil, Powdered Elm Bark, Nitrate Potash, Batchelors Hair Dye, or Strychnine, pure, as well as ink, powder puffs and many other items and compounds.

Dr. Marcus Whitman also used Calomel. In a report of Whitman’s treatments, Fred Lockley states, “The doctor used to give the Indians calomel when they had the measles. They would take a big dose of calomel and then take a sweat bath, then jump in the Walla Walla river, then die.... Mrs. Whitman’s sovereign remedy was onions. If we children had the croup or tonsillitis or quinsy or almost anything else, Mrs. Whitman would bake some onions and put on a hot onion poultice on our throats. She knew it couldn’t do any harm and it might do some good.”

Tolmie listed some of the treatments he provided while still in Glasgow attending medical school. In February 1831 he noted that he had received his case of Surgical Instruments. The next month he applied six leeches to Mr. Jephson’s right temple to treat for a severe headache. One day in April, he pulled three teeth and bled four patients. On board the ship *en route* to the Columbia, he bled Mr. Clark as a treatment for a swollen testicle. The patient also chose to “cure himself with turpentine”, though the details of the treatment aren’t recorded.

The contents of Lewis and Clarks’ medical supply and some of Thompson’s supply suggest what treatments might have been available. Medical chests for explorers were possibly similar to those supplied to ships and sailors. Woodall began supplying medical chests in the early 1600’s and wrote the treatment manual, The Surgion’s Mate, to accompany the supplied medicines. Druett compares the lengthy list of supplies carried by ships in 1617 with the simpler list of medicines carried by whalers in 1837. The list for 1617 included many plant parts: anise, oregano, crab apple juice, barley, root of hollyhock, palm oil and saffron. Also included was turpentine, beeswax, flower petals, rhubarb, honey, palm oil and pork lard, as well as *stercus canis* or dog feces, opium and brandy. The whalers’ list of 1837, which may have had more similarities to the medicines carried by the Columbia River explorers,

was shorter. A partial list includes essence of peppermint, mercurial ointment, vinegar, tincture of rhubarb and rhubarb, opium pills, ether, cloves, olive oil, quinine and laudanum.

Compiled for the Royal Navy in 1777, The Shipmaster's Medical Assistant provides recommended cures for common sailors' ailments such as fractures, scurvy, dropsy, fits and fevers, as well as bites of vipers and rattle snakes. A recommended list of drugs to be carried includes oil of mint, Lavender drops, Calomel, Dragon's Blood Powder, Saffron and tincture of rhubarb. Also listed are items that are generally not included as medicines, but that were required. These included cinnamon, raisins, ginger, garlick, rice, nutmeg and lemon juice.

David Thompson's supply list for 1807–1808, summarized by Nisbet, includes cinnamon, cloves, nutmeg, brandy, hartshorn spirits, lemon essence, laxitive, magnesia, peppermint, purges and rhubarb. Also Plaister, blistering and lancets. The medical supplies purchased in St. Louis by the Lewis and Clark expedition is reviewed by Chuinard. The list contains some possibly confusing abbreviations, and some items not used as medications, such as copperas, used for making ink. Included are Camphor, two compounds of tartar, Calomel, Magnesia, Laudanum, peppermint, pulverized rhubarb, cinnamon, cloves and nutmeg as well a 15 pounds of Peruvian Bark.

In considering the medicinal products carried and employed, Jacob remarks that with historical medical treatments that 70% to 80% of both the drugs and diseases cannot be identified. He adds that there is even less information about what might have been effective. Others have suggested that to think that even 20% of the diseases or treatments could be identified is overly optimistic.

Surgery

Surgery was an uncommon form of treatment. Dr. Lowe's instructions to chirurgerie, (or surgery) explained, "... for the patient must first be told of the danger because often death ensues, as you have heard, either from apprehension, weakness or loss of blood." Though Tolmie had studied at Glasgow where he also observed and bandaged numerous amputations, he did not record doing any amputations on the Columbia. Amputation would have been appropriate for a shattered limb. Perhaps the nature of accidents limited the need, either injuries were not so severe as to require amputation, or they were so disastrous that they were fatal. Dr. Babcock had explained to Wilkes that the country was generally healthy. Wilkes, in 1841, wrote of Dr. Bailey's report that there had been only one surgical operation in the country. This was possibly the operation, reported by Lysell, on patient Cyrus Shepard, done by

Dr. White, assisted by Dr. Bailey and Mr. Wilson. Though the amputation was successful, the patient died several weeks later from infection. Shepard had accompanied Lee west in 1834. His death is reported as occurring both in 1837 and 1840. There is also reference to Frederic Derusha, (also spelled DeRooche), doing surgery on a boy's leg in 1846, and the boy dying later.

Later in Wilkes' journey on Puget Sound there was an accident with a howitzer on board the ship that caused severe lacerations to the arm of a seaman. Though the ship's doctor considered amputation, Wilkes intervened believing the amputation was not urgent, and if needed, could be done later. Though Bailey reported there had been only one surgery, there was reference to others in journals.

Another surgery that is omitted from some of the histories written about regional medicine, was performed by Dr. Gairdner. An Indian man who would sometimes dress as a woman to deceive the sailors on the ships. He reportedly had been lashed as punishment but continued the practice. At some point he was seized and bound by a ship's men and Dr. Gairdner castrated, or "emasculated" him. Harvey quotes some of the correspondence that followed.

During his training in Glasgow, Dr. Tolmie routinely reported of "inspecting" the body of a deceased patient, apparently performing an autopsy. When he suggested inspection of a deceased patient at Fort Vancouver, he was told that it was not to be done due to "Canadian prejudices, such a thing had never been done."

Reports made by the U. S. Army Medical Corps in 1848 to 1851 regarding the replacements and additions of medical officers following the Mexican- American War illustrate the diversity, and limitations of the training of medical doctors applying to become Army Medical Officers. One Board of Examiners, meeting in New York invited 75 doctors to apply. Of the 52 who presented themselves, only 9 were accepted. A later board met in Philadelphia, examined 21 doctors and accepted only 7. Seven of the first group were physically disqualified. Of the figures provided for five different examining boards, 144 doctors presented themselves and were examined. Of these, only 39 were accepted, a ratio of about one in four accepted as Army Assistant Surgeons.

The Board report to the Surgeon General outlined four areas of deficiency in knowledge, experience and the training of the candidates. These included lack of knowledge of Latin Language, lack of knowledge of Physics, or Natural Philosophy, lack of knowledge of Practical Anatomy by Dissection,

and lack of Clinical Instruction. These four areas of lack of experience and training resulted in inability to communicate, in Latin, with pharmacists. The lack of knowledge of physics (the term used for treatments), caused some candidates to be rejected. Others, they found, had never done any dissection, and yet others had never resided at a hospital, nor walked a ward, nor done any private practice though they had graduated from medical college and had passed examinations. Others were totally uninstructed and inexperienced in minor surgery. Accepting these candidates, the board wrote, could make them the sole provider of medical care in an isolated post without aid.

Medical Exchange

European colonial expansion provided commercial opportunity to trade in new foods such as corn and potatoes, fish, furs, timber, dyestuffs, and minerals such as gold and silver. But there was also a reciprocal introduction of medicinal plants, herbs, and healing practices as well as an exchange of previously unknown diseases. Some of the most disabling diseases, smallpox, malaria or intermittent fever, venereal diseases and scurvy were regularly encountered by ships and expeditions to the New World and on the Columbia River. Also, from the colonies came treatments for many severe illnesses though some of them were not fully used or exploited for many years. A Spanish physician, Nicolas Monardes wrote Joyful News Out of the New Found Worlde in 1577, about the medicinal plants and preparations of the Americas. The book was translated to Latin, German, English, Italian and French. Another author had written of hundreds of Aztec medicinal plants in 1552. Guaiac wood extract from the Caribbean was used for the treatment of syphilis. Cinchona tree bark, used to produce quinine for treatment of malaria, was referred to as Jesuits' Bark or Peruvian Bark. One of Tolmie's lectures in Glasgow was about substitutions for the bark, and he and McLoughlin both found Northwest trees that could be used to provide quinine. Canadian explorer Cartier, had learned of brewing a medicinal beverage, sometimes referred to as spruce beer, that prevented scurvy, from spruce trees in 1536. Menzies reports brewing spruce beer while on Puget Sound in 1792. James Lind tested citrus fruits such as lemon and lime for treatment of scurvy in 1747. In 1717 in Constantinople, Mary Wortley Montague learned of inoculation practiced by natives and began its European use by having her son vaccinated. It was further studied by Cotton Mather and Dr. Boyleston in America by 1871.

Disagreements over the various medical qualification was addressed in 1867 after a dispute over the qualifications of faculty members for the medical school at Willamette, Oregon. Some faculty members, reported Packard, had "defective" credentials. However, without them there were not enough doctors to have a medical faculty. The objection was waived, and a professorship was given to

every physician in town who had a diploma or who had declared that he was a graduate of some medical college. Dr. W. C. Warrinner, who arrived in Portland in 1853, reminisced later that when he arrived there were only three physicians in Portland when he arrived: Doctors Wilson, Millard and Davenport. There were only four in the region with diplomas: Drs. Hartley of Vancouver, Bailey of Oregon City, Boyle of Polk County, and Warrinner of Salem. Dr James Bailey, a graduate of the three-year program at Ohio Medical College arrived in Corvallis in 1855.

Each year the migrations and ships brought more settlers and more doctors. Larsell lists those arriving with the Hudson's Bay Company and during the Missionary period; Holt and Broughner list some who came later and with the Army. Johnson summarizes the changes in surgery and medicine later in the century. With the migration of 1843 came Doctors John E. Long and Frederic Prig. Nathaniel Sitton arrived also, and though referred to as a doctor, he had a drug store, but not a medical practice. Dr. Theophilus Degen, (also spelled Dagan), also arrived in 1844, escorting the Sager orphans to the Whitman mission. A biography of Degen is provided by Larsell in his 1947 book. Dr. Henry Saffarans arrived in 1844 and a "doc" Fruit and Dr. Townsend. Dr. Henry Saffarans also arrived in 1844 and settled at Oregon City. Dr. Forbes Barclay arrived at Fort Vancouver in 1840 and relocated to Oregon City in 1850.

Earlier another doctor had traveled to Oregon Territory, but had not reached the Columbia Basin. In 1832 Dr. Jacob Wyeth had accompanied his brother, the explorer, Nathaniel Wyeth to Oregon. After an Indian battle and becoming ill at Pierre's Hole, Idaho, Dr. Wyeth and several companions returned east and his brother continued on to the Columbia River. At that time, Idaho, parts of Montana and Wyoming were included in Oregon Territory. Though Dr. Wyeth never reached the Columbia or practiced medicine in the region, he technically had reached Oregon.

1845 saw the arrival in Oregon Territory of Dr. Ralph Wilcox who eventually settled in Portland. Doctors Samuel Parker, Truman Bonney, and A. N. Foley also arrived in 1845. Two physicians settled in Oregon in 1846, Doctor James H. McBride and Dr. W. M. Carpenter. In 1847, two more doctors reached Oregon, Dr. Jean Pierre Poujade and Dr. Perez Prettyman, and two others continued on to Washington Territory, Dr. David Gardner and Dr. Francis F. Snyder. Dr. Joseph Monroe Blackerby reached Oregon in 1848, and Dr. Eugene Rufus Fiske in 1849.

The 1850 census, reports Larsell, listed four doctors in Vancouver, Washington Territory: two surgeons, Dr. Alfred Benson and Dr. Rocque Ducheny, and two physicians, Dr. Richard Truesdale, and Dr. John Foster. Dr. David Maynard was in Olympia in 1850 before going on to Seattle in 1852. Dr. Henry A. Smith crossed the plains and settled at Seattle in 1852. Dr. J. C. Kellogg practiced medicine on Whidby Island in 1853. Dr. Nathaniel Ostrander traveled west in 1852, and settled on the Cowlitz River, in Washington Territory in 1853.

The introduction of medicine in the Yakima area began with Assistant Surgeon John F. Hammond who arrived with Major Granville Haller in 1855. Captain Joseph P. Brown and Dr. Randolph were assigned to Fort Simcoe in 1856. They were followed by Capt. Anthony Heger who remained until the Fort was closed as an Army facility in 1859. Doctor R. H. Lansdale practiced in Portland, Olympia, Vancouver, and on Whidby Island before being appointed as Indian agent for the Yakimas in 1854. Though reported dates and locations sometimes conflict, he reportedly moved to Ft. Simcoe in 1859 and was dismissed in 1861. Dr. George Benson Kuykendall was the first physician for the Indian school at Ft. Simcoe, from 1872 to 1883. In the 1860 census the Fort had been reported to be vacant. A Dr. Roberts was reportedly at Ft. Simcoe between the assignments of Lansdale and Kuykendall. Dr. Lewis Heddie Goodwin moved from Walla Walla to Yakima in September 1865, before returning to Walla Walla.

European medical practice was implementing substantial changes in many dimensions in the mid 1800's that would completely change medical care. The need for and the effect of the changes were amplified by the medical needs caused by both the Crimean War of 1853 – 1856, and the U. S. Civil War of 1861 – 1865. The increased public awareness provided by the early photographers and by famous writers and poets and political activists accelerated the changes.

The enormous changes in medicine that occurred during the second half of the 1800's included antisepsis, the practice of clean, sterile treatment techniques credited to Joseph Lister, which was sometimes referred to a "Listerism". Others had suggested it before, but Lister presented a rationale and a system. He published his material in Lancet in March 16, 1867 and presented his concepts and practices at a medical conference at Philadelphia later that year. Ether, nitrous oxide, chloroform and cocaine were used as general and local anesthetics. Ether was used successfully in 1846 and used extensively in Civil War surgery. Vaccinations for smallpox, a native treatment from Asia and the Near East, was first used as a European preventive treatment, by Mary Wortley Montague in 1717. By the

early 1800's it was more widely accepted and was being used in the Columbia Basin. The stethoscope was invented in 1816 by R. T. H. Laenneck, and it was improved and in more common use in the mid 1850's. Surgeon Ambroise Pare had promoted ligatures in the mid 1500's to control blood loss, replacing the use of cauterization with hot oil. This practice was replaced by use of hemostats or artery forceps to control bleeding during amputations, introduced in 1879. Wilhelm Rontgen, (also spelled Roentgen) discovered X-ray in 1895. In 1899, an X-ray could be made with the first machine to arrive in Yakima. Willem Einthoven had devised an electrocardiograph in 1895.

In his history of surgery on the west coast of America, Johnson lists other major events. Dr. Elias Cooper arrived in San Francisco in 1855 and did the first caesarean surgery in 1857. Dr. Hugh Toland successfully used chloroform as an anesthetic in a thyroid surgery in San Francisco in 1858. Dr. Levi Cooper Lane, in California, did the first hysterectomy in 1878. In 1884, Drs. William Halsted and Richard Hall tried using cocaine for local and general anesthetic. Both experimented on themselves, both became addicted. The list of surgeons in Portland in the 1870's included Henry E. Jones, Holt C. Wilson, John T. Wells, and Kenneth A. J. Mackenzie. Later they were joined by Dr. Andrew Smith.

Two Black physicians arrived in the Pacific Northwest in the early 1900's. Jerome R. Riley, a Canadian, who had received a degree in "allopathic medicine" from Howard University in 1873, had been licensed to practice medicine in Canada in 1861. He was in Seattle in the early 1900's before moving on to Connecticut. It is unclear if he provided medical care in Seattle. Dr. J. A. Merriman who had a degree from Rush Medical College, established his practice in Portland in 1903.

Though Lister had presented his material and procedures on antiseptic surgery in 1867, it was not widely accepted. Johnson wrote that with surgery there was a 40% mortality rate. Dr. Thomas Huntington, working in San Francisco in the 1880's and 1890's, doing surgery using Lister's methods, reduced it to only 5%. He received some attention when by 1897 he had done over 200 hernia operations without a death.

Two professionally trained dentists arrived in the Northwest, Dr. Asa Peterson arrived in 1845 and practiced in Lebanon, Oregon; Dr. George Washington Gray came in 1852 and practiced in Albany.

Women in Northwest Medicine

Another major addition to regional medical care was the beginning of women in formal medical training and practice. Though their practices began after the period covered by this essay, they were an important to medical care in the Territory. The ten women medical doctors reviewed experienced a medical world different than the medical practitioners that preceded them before the Civil War. None of them had achieved their knowledge through apprenticeship, all had completed degrees or medical training at established medical colleges and universities. In 1870 the University of Michigan admitted the first woman student to a medical school. All began their professions after the use of antisepsis and ether anesthetic were established. The stethoscope was available in making examinations and diagnoses, some may have used x-ray machines. Several of the women traveled to provide care for the wounded in WWI, San Francisco earthquake, and the Spanish Flu epidemic.

There had been women healers and care givers at all stages of the European settlement of the Pacific Northwest. One who was identified was Ann McCann, whose married name was Hood, arrived with the migration of 1845. She practiced in Oregon City and was identified as a Midwife and Frontier Medicine Woman.

Dr. Sophronia Nichols had graduated from Boston University Medical School in 1847. After 1876 she practiced medicine in Washington Territory and at Albany, Oregon. Two sisters, Ella and Angela Ford graduated from Willamette University Medical School at Salem in 1877. Mae Harrington Cardwell, (also spelled Caldwell), also graduated from Willamette Medical School, in 1885. Esther Pohl Clayson Lovejoy enrolled at University of Oregon Medical School in 1894 and was the second woman to graduate.

Dr. Bethenia Angelina Owens-Adair had arrived in Oregon in 1853; trained in medicine in 1874, received an MD from the University of Michigan in 1880, and opened her medical practice in Portland in 1881. She is reported to have practiced medicine in Portland and Warrenton between 1874 and 1889, and in North Yakima from 1899 to 1905. Dr. Mary Purvine graduated from Willamette Medical School in 1899 and practiced in Condon, Oregon. Mary Latham was a graduate of Cincinnati Medical school in 1886. She practiced in Cincinnati before moving to Spokane in 1887 and establishing her practice. (In 1890, her husband was hired as the reservation physician at Nespelem and was noted for his photography.) Dr. Mary Latham had a possible stroke, possible mental instability and was found

guilty of arson. After serving a prison sentence at Walla Walla, she returned to Spokane and continued to practice medicine. Marie Equi received her M.D. from University of Oregon in 1903, and after doing an internship in Pendleton, established her practice in Portland. She was very active politically and served time in San Quentin prison for her protest against WWI. She organized medical care for San Francisco citizens after the earthquake in 1906. In 1911, Dr. Mabel Seagrove graduated from Johns Hopkins University Medical school. She became a prominent physician and citizen of Seattle. She provided medical care in France during WWI.

Nursing

Religious orders in Europe, but not in England, had provided nursing care. Three of the early Northwest hospitals were organized by French speaking religious orders. The Sisters of Charity of Providence had arrived at Vancouver in 1856 and had opened their hospital in April 1858. In 1858, four Sisters of St. Anne, two trained as nurses, arrived at Victoria. They provided nursing care and opened St. Joseph's Hospital in 1876 even though education was their primary occupation. In Yakima, a patient could be cared for by the Sisters of Charity of Providence in St. Elizabeth's Hospital, first opened in August 17, 1891.

Nursing care, though one of the earliest healing services, was not clearly identified and organized as a necessary service and practice in the English speaking world until promoted by Florence Nightingale during and after the Crimean War of 1853 – 1856. Nightingale's work was generally accepted and her recommendations were implemented by both sides in the American Civil War and influenced the organization of care of injured and sick soldiers of both Union and Confederate Armies. Information about the war and the wounded was disseminated through the newspapers, which for the first time, carried photographs made by Matthew Brady and other photographers, about the battles. Federal government responsibility for medical and nursing care of the wounded and sick was established when Dorothea Dix, of temperance fame, was appointed Superintendent of Nursing for the U. S. Army organized hospitals.

In addition to the photographs, and *Notes on Nursing* and other writing by Florence Nightingale, information about the war, the wounded, and the need for nurses was provided by other famous writers. The poem, *Santa Filomena*, also referred to as "The Lady With the Lamp," was written by Henry Wadsworth Longfellow to recognize the efforts of Nightingale. Poet Walt Whitman traveled to Washington, D. C. to find his wounded brother. He worked as a nurse and after seeing

many wounded men, wrote *Drum Taps*, *The Wound Dresser* and *A Sight in Camp in the Daybreak Gray and Dim*. Louisa May Alcott went to Washington to become a nurse. Her experiences and observations were published as *Hospital Sketches* in 1863. Clara Barton served as a nurse in Union hospitals and at battles. After the war she traveled in Europe, and in Switzerland saw the Red Cross organization providing relief. She returned to the United States and promoted a similar organization, organizing the American Red Cross to provide care for victims of disasters and wars.

Another major reorganization of medical care for wounded soldiers was directed by Major Johnathon Letterman in 1862. As Medical Director of the Army of the Potomac, he constructed the tiered system of evaluation, treatment and evacuation of wounded soldiers that restructured existing military medical assessment and evacuation procedures.

Kalish and Kalish report that nearly 10,000 women served as nurses during the Civil war, a large number for a profession that was nearly non-existent in 1860. An estimated 9,000 women served in the North, about 1,000 in the South. Dorothea Dix had appointed over 3,000 of the women nurses in the Union Army. The nurses had to be women between 35 and 50 years of age, plain looking and wear black or brown dresses. Bows, curls, jewelry and hoop skirts were not allowed.

Summary

After the Civil War, generations of physicians and their patients benefited from significant change in medical care that began the modernization of medicine. The first great technological advancement was the stethoscope, so remarkable that Dr. Tolmie wrote about using it when in training at one of the great medical schools in 1829, though it was no more than a short, hollow piece of wood. The introduction of anesthetics, antiseptics, and X-ray during the second half of the 19th century made the medical knowledge of the first half of the century – and the practitioners – obsolete. Treatments and preventions of the four major illnesses or conditions among the Columbia River patients: scurvy, venereal disease, malaria or intermittent fever, and small pox, were reduced to low levels of concern by the understanding and application of prevention measures. The acceptance of and use of antiseptics made surgery a survivable treatment.

The early physicians arriving on the Columbia River: ships surgeons, fur trade medical providers, and medical settlers brought a legacy of medical care and equipment that was little changed from Medieval medicine. Having trained with blood-letting and leeches, equipped with trepanning tools and bone saws, bougies and probangs, and preparing medicines of poultices and potions of seeds and weeds and leaves, and having studied *Materia Medica* to learn the supposed healing benefits of the plants, animal feces and other substances, they were possibly well prepared to provide care in a Medieval village. Dr. Whitman and Alexander Henry removed arrow heads from patients using instruments similar to those of the 1500's; the onion poultice used at Waiilatpu was similar to that of the ancients; the trepanes of the medical supply cabinet at Fort Vancouver were from the Roman era or before. But it was those practitioners traveling at night on horseback or by buggy or canoe to deliver their packages of herbs and powders and vials of tinctures who brought comfort to the ill, relief to the sick or injured settlers and hope families with sick and feverish children.

Rudyard Kipling summarized some of the hazards and ineffectiveness of the early medical practice in verse. The first four lines of the third stanza of “Our Fathers of Old”:

Wonderful little when all is said
Wonderful little our fathers knew
Half their remedies cured you dead
Most of their teachings were quite untrue

Libraries used:

National Poetry Library, London

Suzzallo Library, University of Washington, Special Collections, Seattle

National Park Service Library, Waiilatpu

Yakima Valley Museum, Archives, Yakima

British Library, London

Terrell Library, MASC, Washington State University, Pullman

Warburg Institute Library, SAS, London

Brooks Library, Central Washington University, Ellensburg

Wellcome Institute Library, London

Yakima Public Library, Relander Collection, Yakima

Royal College of Nursing Library, London

National Park Service Library, Fort Vancouver

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European Doctors, Ships Surgeons, and Medical Providers
in the North Pacific, on the Northwest Coast,
and in Oregon Territory, 1579 –1861

Year	Name	Ship, Location, Mission or Expedition
1579	Hood, Thomas	On <i>Golden Hind</i> with Francis Drake, may have reached Lat. 48 degrees
1741	Steller, G. W.	With Vitus Bering
1741	Betge	Surgeons Mate, with Bering
1741	Lau	With Chirikoff on Bering expedition
1774	unnamed	possibly Davalos, with Perez
1775	Davalos, or Da Villa	With Hecata on Sonora, landed on Washington Coast
1778	Anderson, William	With Cook on <i>Resolution</i> , died at sea
1778	Law	Replaced Anderson on <i>Resolution</i>
1778	Samwell, M. W.	With Cook
1786	Menzies, Archibald	With Colnett, with Vancouver in 1790, replaced Cranston
1786	MacKay, John	Wintered at Nootka
1786	Merck	With Billings, Russian-Alaska Expedition
1786	Main, John	“ “ “ “
1786	Leman	“ “ “ “
1789	unnamed	With Meares, died of scurvy at Prince William Sound
1790	Cranstoun, Alexander	With Vancouver on <i>Discovery</i> , became sick, returned to Boston
1791	Hewett, George	Surgeons mate on <i>Discovery</i>
1791	Pava, Luis	Nootka Sound
1791	Robeck	Surgeon-major with Billings
1791	Allegretti	Surgeon, wintered at Unalaska
1792	Galavez, Louis	On Ship <i>Aranzaza</i>
1792	Mozino, Jose Maciano	Nootka Sound, with Quadra
1792	<u>Columbia River Discovered</u>	
1792	Walker, William Jr.	Ship’s Surgeon with Broughton on <i>Chatham</i> ; Walker Island named for him
1811	Swan, Richard	Ship’s Surgeon on <i>Isaac Todd</i> , at Astoria
1811	Crowley	Astoria, was returned to London for trial, year not certain
1811	White	Astoria, suicide by drowning, year not certain
1816	Downie	Astoria, suicide by gun
1824	McLoughlin, John	Astoria, Fort Vancouver, Oregon City
1825	Scouler, John	Ships Surgeon on <i>William and Ann</i> , visited Astoria, Fort Vancouver
1828	Hamlyn, Richard	Ft. Vancouver
1830	Kennedy, John F.	Ft. Vancouver
1832	Wyeth, Jacob	Turned back at Pierre’s Hole, Idaho; brother of Nathaniel
1833	Tolmie, William Fraser	Fort Vancouver, Nisqually
1833	Gairdner, Meredith	Fort Vancouver
1835	Bailey, William J.	Arrived from California, joined Methodist Mission
1835	Townsend, John Kirk	Managed the Ft. Vancouver hospital 1835-36, without medical training
1836	Blaschke	At Unalaska
1836	Whitman, Marcus	Founded Mission at Waiilatpu, killed in 1847

1837	White, Elijah	Willamette, with Jason Lee of Methodist Mission
1837	Willison, W. H.	Apprenticed to Bailey
1838	Malakof	In Alaska
1838	Formin	At Bristol Bay
1838	Bloschke	At Unalaska
1839	Geiger, William	Wintered at Whitman Mission with his family
1839	Wislizemer, Frederick A.	Traveled from St. Louis with trappers
1840	Barclay, Forbes	Fort Vancouver, Oregon City, Left Hudson' Bay Co. 1850
1840	Babcock, Ira L.	Methodist Mission, The Dalles
1840	Richmond, John P.	Methodist Mission, Nisqually
1841	Pickering, Charles	Surgeon and naturalist with Wilkes Expedition, traveled to Colvile
1841	Spinning, Charles H.	Pierce County, Appointed doctor for Nisqually by Gov. Stevens
1843	McKay, W. C.	Born at Astoria, 1824, Studied at Fairfield College, practiced at Pendleton
1843	Owens-Adair, Bethenia A.	She studied medicine at U of Mich. 1880, practiced in Portland and Yakima
1843	Long, John E.	Oregon City
1843	Prigg, Frederic	Oregon City, drowned, possibly shot, 1849
1843	Sitton	mentioned as living north of Yamhill River
1844	Degen, Theophilus	Umpqua, also spelled Dagon, Degan, or Dagan
1844	Saffarans, Henry	Oregon City, also spelled Saffron, maybe confused with Saffron, 1847
1844	Rowland, L.L.	Went East in 1850's, studied medicine, returned in 1859, Salem in 1870
1844	Fruit,	
1845	Wilcox, Ralph	Portland in 1847
1845	Parker, Samuel	Salem
1845	Foley, A. N.	Southern Oregon
1845	Bonney, Truman	Woodburn
1845	Boyle, James W.	Polk Co., Salem
1845	McBride, James H.	St. Helens, was captain of 1845 wagon train
1846	Carpenter, W. M.	Oregon City
1846	Bowlby, Wilson	Washington County
1847	Poujade, Jean Pierre	French Prairie
1847	Saffron, Henry	With Lee's Methodist Mission, The Dalles, Oregon City
1847	Gray, W. H.	With Whitman, returned to Fairfield College for some medical training.
1847	Prettyman, Perez	Portland
1847	Gardner, David	Washington Territory
1847	Davidson, J. E.	Graduated Willamette Medical College, practiced from 1853 at Independence
1847	Snyder, Francis F.	Washington Territory
1848	Blackerby, Joseph M.	Marion County
1848	Adams, William L.	Hood River and Astoria
1848	Baker, Dorsey Syng	Trained as doctor, was wagon train doctor, but operated business in Oregon
1849	Holden, C.H.	Assistant Surgeon, U. S. Army Ft. Vancouver
1849	Hayden	Surgeon
1849	Clark, Johnathon	
1849	Boyle, Charles	
1849	Fiske, Eugene Rufus	Roseburg
1850	Allen, William R.	
1850	Aubrey, Thomas N.	

1850	Beals, H.	
1850	Belt, Alfred M.	Salem
1850	Drew, Joseph W.	
1850	Humt, C. E.	
1850	Fiske, Eugene R.	Salem
1850	Martin, J. L.	Scio, Oregon
1850	Benson, Alfred R.	Vancouver
1850	Ducheny, Rocque	Vancouver
1850	Truesdale, Richard	Vancouver
1850	Foster, John	Vancouver
1850	Wilson, Robert Bruce	Portland
1850	Maynard, David S.	Olympia, to Seattle in 1852
1851	Lansdale R. H.	Appointed to Fort Simcoe Indian School in 1859, dismissed in 1861
1851	Carson, John C.	Studied medicine in Ohio, employed as builder in Portland
1851	Cole, James C.	
1851	Colvig, William L.	
1851	Davenport, Benjamin	
1851	Hicklin, John Lindsey	
1851	Hicks, Frank P.	Astoria in 1853
1851	Alexander, Robertson	
1851	McCully	
1851	Partlow, R. S.	
1852	Adams, Williams	
1852	Ballard, David	Lebanon, Oregon
1852	Bowlby, Wilson	Forest Grove
1852	Crawford, George F.	Albany, Oregon
1852	Davis, Harlan A.	Harrisburg
1852	Crawford, Robert H.	Brownsville, Oregon
1852	Davis, Platt A.	
1852	Eccleston, Henry H.	Lane County
1852	Foley, Abraham N.	Operated Bethlehem Hot Springs Spa
1852	Harris, Johnson	
1852	Johnson, H. V. V.	McMinnville
1852	Jones, D. M.	Albany, Graduated from Willamette Medical in 1868
1852	Magers, William B.	Polk County
1852	Moore	Possibly spouse of Emily York
1852	Patterson, A. W.	Died 1852
1852	Robbins, Nathaniel	“self-trained doctor”, Drowned
1852	Smith, Sidney A.	Halsey, Oregon
1852	Stillman, Clark	
1852	Weber	Died on Trail, Aug. 13, 1852
1852	Weatherford, Williams	
1852	Kellogg, John Coe	Whidby Island, Port Gamble
1852	Ostrander, Nathaniel	Monticello and Olympia
1852	Smith, Henry A.	Portland and Seattle
1853	Cusick, George W.	Named Robert, but preferred George
1853	Hill, J. Linsey	Was a printer, but studied and practiced medicine
1853	Holmes, Harrison R.	
1853	Cusick, W. A.	Gervais, Worked with Dr. M. A. Flinn
1853	Poppleton, Edgar	Trained in Cincinnati, in Portland in 1860
1853	Suckley, George	Surgeon/ naturalist, Stevens Railroad Survey, Ft. Steilacoom, 1856
1853	Tuzo, H. A.	Ft. Vancouver
1853	Cooper, J. G.	Surgeon/ naturalist Stevens Railroad Survey
1853	Warrinner, W. C.	Portland
1855	Bayley, James R.	Corvallis, Graduate of Ohio Medical College in 1844

1855	Willard, G. K.	Olympia, Mentioned after 1855
1855	Gilsan, Rodney	Assist. Surgeon U. S. Army at Fort Orford; Portland, 1861
1855	Hammond, John Fox	With Haller, 1858, asst. Surgeon at Ft. Townsend
1856	Brown, Joseph B.	With Haller, 1856, Fort Simcoe, The Dalles
1856	Burns, Matthew R.	Surgeon, Washington Volunteers, in Olympia 1859
1856	Randolph	Haller Expedition to Walla Walla, Yakima and Kittitas
1857	Clark, Charles	U. S. Boundary Commission, Surgeons Steward
1857	Brien, John	U. S. Boundary Commission, Hospital Steward
1857	Campbell, Samuel	Esquimalt, Assistant Surgeon
1857	Lyall, David	British Boundary Commission
1857	Harris, Joseph S.	U. S. Boundary Commission, Asst. Surgeon and Naturalist
1857	Kennerly, C. B. R.	U. S. Boundary Commission, Surgeon and Naturalist
1857	Heger, Anthony	Fort Simcoe
1857	Henry, A. G.	Physician, Grand Ronde Reservation
1857	Howard, Samuel	Assistant Surgeon and Steward, Grand Ronde Reservation
1858	Kuhn	Ft. Townsend with Mansfield
1858	Wirtz, Horace R.	Fort Townsend
1858	Keeney, C. C.	Assistant Surgeon, Fort Simcoe
1858	Berrian, I. H.	Boundary Survey, Assistant Surgeon, Semiahmoo and,
1860	Colville	
1859	Craig, Robert Orr	Asst. Surgeon, Ft. Steilacoom, 1860 Camp Pickett San Juan Island
1860	unnamed	Surgeon, Semiahmoo
1860	Hammond, George	Surgeon at Harney Depot, Colvile
1860	Brian, John	Boundary Commission, Harney Depot, Hospital assistant
1861	Roberts,	Fort Simcoe Indian School between 1861 and 1872, dates unclear
1861	Carpenter, Horace	Army Surgeon, Medical school instructor, Salem
1861	Weed, Gideon A.	Salem, 1861 – 67; Seattle after 1870
1865	Wall, David	Asst. Surgeon, or Steward, U. S. Army, practiced as civilian Doctor
1865	Whyte, J. H.	President, Willamette University, Pastor in Portland, left 1869
1865	<u>End of Civil War</u>	
1870	Allan, Alexander	English Camp, San Juan Island
1872	Kuykendall, George B.	Fort Simcoe Indian School, 1872 – 1883
1872	Moss, Edward L.	Esquimalt
1872	Allan, James A.	San Juan Island
1873	Blalock,	Walla Walla
1886	Eagleson, James	Port Townsend, 1886; Seattle, 1887 established Marine Hospital
1891	Gunn	North Yakima