COLONIAL & MONASTIC MEDICINE OF THE AMERICAS DURING THE AGE OF DISCOVERY

by Prof. [Dr. of Med.] Charles McWilliams, 2019©
PanAmerican Univeristy of Natural Sciences & Medicine
Universidad de Medicina Indigena Monastica de Boriken
Schoolofnaturalmedicine.info

Abstract

Colonial medicine has become a recent field of study in the history of medicine and health. Colonial medicine developed during the Age of Exploration and Colonial Era and includes the Americas, Africa, India and the Philippines. This paper limits discussion to the Americas, however exposes a unique amalgamation of Amerindian, monastic (Spanish), and African medicines. Medical history is now being used as a lens to view colonial culture and society and as a way to better understand West Indian development and anthropology. This has only recently become evident by the access to little know writings and texts that have made their way to digital copies and dissemination via the internet.

This article advances that due to the drastic impact new foods, spices, and herbs of the New World had on the culinary, medical, and pharmacological development of the modern era, that monastic-colonial-indigenous medicine of the Americas is not only a subject in its own right, but developed into a widespread, evolution of medicine that helped evolve into the first, new world schools of medicine - in **Mexico** (Royal and Pontifical University of Mexico, 1715), **Cuba** (Real y Pontificia Universidad de San Gerónimo de la Habana, 1728), **Puerto Rico** (Escuela de Gramatica, established by Bishop Alonso Manso in 1513), **Venezuela** (Universidad Real y Pontificia de Caracas, 1722), **Dominican Republic** (Universidad Autónoma de Santo Domingo, 1538, Santo Domingo is the site of the first university, cathedral, castle, monastery, and fortress in the New World), Peru (National University of San Marcos, Lima 1551), and **Colombia** (in 1621 Jesuits started San Francisco Javier or Javeriana University, today Pontificia Universidad Javeriana Faculty of Medicine in Bogotá, Colombia is one of the leading medical schools in Colombia and Latin America).

New discussions and ideas from this modern field of *colonial medicine* studies can fruitfully be applied to better understanding of European development with its monastic and folk medicines, leading to the colonies, especially for the early empires of Spain and Portugal (mid-fourteenth to mid-sixteenth centuries), and renaissance medicine. This article identifies key modern findings, and discusses how pivotal elements of medieval and modern medical practices can be traced to colonial and postcolonial discoveries of herbal medicines. The article ends with validating that *colonial medicine*, a synthesis of indigenous, traditional and monastic (Hippocratic) medical practices, paved the way for specific and eclectic herbal medicines, which found their way into modern herbology, naturopathy, homeopathy, and nature cure practices, still in use today. Such New World drugs as quinine, capsaician, and cocaine, are legends that helped develop modern pharmacy.

Keywords: monastic medicine, colonial medicine, pirate/naval medicine, health, colonialism; Spanish, French, Dutch and Portuguese empires; global history; pharmacy.

———————————————————————

In attempting to create an "American System of Herbal Energetics" we find much of the work has already been done. Rather than start over, we need to find, understand, and reclaim the knowledge of our elders and grandparents. Our future cannot ignore our past.

—DAVID WINSTON (Ethnobotanist, founding member of the American Herbalist Guild. 1997)

COLONIAL MEDICINE IN CONTEXT

Western colonialism was a political-economic phenomenon whereby various European nations explored, conquered, settled, and exploited large areas of the world. The age of modern colonialism began about 1500, following the European discoveries of a sea route around Africa's southern coast (1488) and of America (1492). With these events sea power shifted from the Mediterranean to the Atlantic from the emerging nation-states of Portugal, Spain, the Dutch Republic, France, and England. By discovery, conquest, and settlement, these nations expanded and colonized throughout the world, spreading European institutions and culture.

Historians have shown that colonial medicine occupied a unique place within a more expansive ideological order of the empires. Colonial efforts to deal with the health of developing regions were linked mainly to their economic interests in Europe. Health was not an end in itself, but rather a necessity for colonial development. Colonial medicine, or "tropical medicine," as it was called during the late 19th century, was concerned primarily with maintaining the health of Europeans living in the tropics, because these individuals were viewed as essential to the colonial project's success. The health of the colonized subjects was normally only considered when their ill health threatened colonial profit and production of crops or mining.

Thus, colonial governments usually did little to nothing, to build rural health services for the general native populations. Rural services, when they did exist, were run mainly by missionaries of the Church and focused primarily on fevers, and maternal and child health. This outcome left a broad field for action by local traditional healers, while colonial medical authorities generally discounted the medical knowledge of local populations, and at times persecuted indigenous health practitioners. Though there were important exceptions to this pattern, in general, disapproval and ignorance of traditional and indigenous health practices was the rule.

Monastic Medicine

The principal colonizers of the New World came from Spain, Portugal, France, England, and Holland. In the later Middle Ages, in cities with large Christian populations, monks began to profess medicine and care for the sick. The monasteries were the safe haven for learning. Monastic infirmaries were expanded to accommodate more of the local population and even the surrounding areas. A Church ban on monks practicing outside their monasteries gave the impetus to the training of physicians. It was contended that this 'for-profit' motive interfered with the spiritual duties of monks. So gradually cathedral cities began to provide large public hospitals with the support of the city fathers and this moved medical care more into the secular domain.

Monastic Medicine we define as: charitable medical services rendered to the poor using natural agents such as food, herbs, and water; and supernatural agents including spiritual counseling, prayer, divination, worship, fasting, and exorcism. As a medico-religious art it encompasses health care through body-mind-spirit as understood as today's homeostasis, encompassing a system of beliefs that are based on treatment of God given functions through achieving balance of mind-body-spirit, the removal of internal congestion and the promotion of the body's own inherent healing powers. (Author's modern definition, as adopted by the Sacred Medical Order)

The Crusades provided further impetus to monastery health services with the notoriety that developed around the Order of St. John that cared for the trauma of the first Crusade in 1099. Papal Bulls and funding lead to the establishment of infirmaries associated with the colonial Crusader states in the Latin Kingdom. Soon the Christian military Order of St. John and St. Lazarus were called 'hospitallers.' These service Orders spread into Christendom in France, England, Cyprus, Rhodes, Malta, Italy, Portugal, and Spain. Record shows that the Order of St. John even spread to the isles of St. Christopher, St. Martin, St. Bartholomew, and St. Croix.

The contemporary history of developing modern medicine actually begins with the decline and loss of monastic medicine as in institution. Renaissance Europe redefined material worth at this time, as the hereditary feudal system began to give way to an economy dominated by the rising middle class. In his discussion of overwhelming cultural changes that followed the English Reformation, Norman Jones points out that the dissolution of the monasteries was driven as much by economics as by religious abandonment. Property ownership was the great motivator of the Reformation.

The Dissolution of the Monasteries, sometimes referred to as the Suppression of the Monasteries, was the set of administrative and legal processes between 1536 and 1541 by which Henry VIII disbanded monasteries, priories, convents and friaries in England, Wales and Ireland, appropriated their income, disposed of their assets, and provided for their former members and functions. The 'Reformation' deprived many suffering and disabled people of their only means of support and medical care. Patients of hospitals like St Thomas' and St Bartholomew's, founded and run by monastic orders, were likewise abandoned.

This was the time when Columbus had returned from the New World and other explorers were traveling all over the world. Disease in colonial America that afflicted the early immigrant settlers was a dangerous threat to life. In Colonial America, local doctors, midwives, healers and even officials administered meager medical care to the residents in their village or town. There was no distinction between physicians and surgeons; when an emergency occurred, the person who was responsible for administering medical care was expected to handle all aspects of the problem. In most places, there were families in which the folk practice of medicine and knowledge of curative drugs was passed down through the generations. Physicians were in high demand and fewest.

Most sick people turned first to ship surgeons, and then to local healers and used folk remedies since doctors and patent medicines were few. Others relied upon the minister-physicians who had settled with training modeled from monastic (Hippocratic-Galenic) medicine, barber-surgeons, apothecaries, midwives; a few used colonial physicians trained either in Britain, or an apprenticeship in the colonies. One of the most common treatments

was bloodletting. The method was crude due to a lack of knowledge about infection and disease among medical practitioners. There was little government control, regulation of medical care, or attention to public health. By the 18th century, Colonial physicians, following the models in England and Scotland, introduced modern medicine to the northern cities of America in the 18th century, and made some advances in vaccination, pathology, anatomy and pharmacology.

The medical situations in the Spanish colonies was quite different as this article discusses…

The Start of the New World Delusion

Diego Álvarez Chanca (c.1515) was a prominent royal physician from Seville who accompanied Columbus on his second voyage in 1493, returning to Spain the following year. In a letter to the municipal council of Seville, Chanca used his meager medical skills of observation to inaptly describe the food and environment of the new world in which he found himself, including accounts of illness, poisonous fruit and supposed cannibalism. Strangely, Chanca's account has not been much studied from a medical point of view, or discussed in the light of colonial discourse, except in relation to cannibalism, which was later disproved.

Chanca's narrative ensured that the councilors of Seville saw the indigenous peoples of the Caribbean as cannibals, which they were not. Chanca also falsely painted the New World as an unhealthy place to live, based on medieval perceptions and his lack of observational skills. It is surely the case that these early accounts of native medicine and behaviors would justify the iron rule of the Spanish empire to enslave and thereby disempower the so-called savage natives.

The facts later emerge that the diseases which faced colonial practitioners, the decided lack of Empire support, combined with the plethora of new plants being discovered in the New World and Amerindian exchanges, established early on a developing style of *colonial medicine* that differed entirely from Empire practices and would become an edifice of today's western herbal medicine. Monastic medical, humoral practices found favor with the humoral medicine of the Aztecs, Mayans, and Taino tribes. The effective use of herbs, no matter what theories being used to understand the body, was the rule for colonial physicians and surgeons. A perusal of the colonial medical and botanical literature shows that there were common methods of practical use medicine whether borrowed from the natives, learned from African tribal healers, or experienced by the household simples. Indeed, humoral medical concepts, tribal or Greek, are still used in today's herbology and natural medicine to describe general tissue conditions in the organism.

We can use own experience of foods, and can easily demonstrate to ourselves the universal, humoral concept of hot-cold dualism, as is found in all ancient medicines. Which are the cooling and which are the heating foods and herbs become quite evident eating chili peppers or drinking lemonade. It was these two frequently ascribed qualities of herbs and spices, hot versus cold properties, used by the natives that the colonial physicians readily adopted before the chemistry of plants yielded to analysis in the late 19th century.

In medical practice, ancient or modern, we always start diagnosis with the generals, and then concentrate on the specifics to assess an individual case of disease. Hot and cold properties of herbs were respected, however, upon application to diseases, the specific experience of the physician ruled the herbal prescription. Medicines had qualities that corresponded to the humours of the body, and to correct a bodily imbalance, a medicine that had the opposite characteristics was generally employed to strike a balance. For example, a hot, dry drug would be used to counteract a phlegmatic (cold, moist) condition like a catarrhal stool. From this perspective, laxative herbs can be classified into two groups based on their nature: laxative herbs with a hot nature cause the dilution and flowing of humors, used for a hard, dry stool; but herbs with a cold nature function as laxatives due to their mucilage properties for ordinary constipation. Each of the laxatives was used in accordance with the primary reason for constipation or obstruction. What has become known as "Latin American humoral pathology", the so-called 'hot—cold syndrome' has been extensively described by Foster and others, and still used in Mexican folk medicine today.

As colonial medicine developed, here we are well served by a system of botanical practice known as "specific medicine," introduced by the celebrated American herbalist, Dr. John M. Scudder (1829–94) in the mid-nineteenth century. Although *specific medicine* draws on well-established monastic medical (Hippocratic) roots, it is a production of American colonial medicine that became unique to American apothecary. It was not eagerly adopted by British herbalists, who had no direct contact with native Amerindians.

At the time Scudder began practice it was commonly asserted that "nothing is certain in medicine." *Scudder's doctrine*, like the colonial and ship doctors before him, asserted that there must be specific solutions discovered by experience. Instead of looking for some principle or law upon which to found medical practice, Scudder preferred direct, trained, personal experience. Careful observation of the organism and the effects of medicines should be the basis of medicine, not theories. "This is not a question of schools," wrote Scudder (1874). "It is a question of sheer empiricism (call it quackery if you will)."

Bad Blood

I will take one example in this article to point out how colonial medicine improved upon the monastic medical principles that were transforming in the New World colonial medicine.

Dyscrasia (dys – abnormal; – crasia, meaning mixture) is a concept from monastic Spanish medicine, meaning bad mixture. The concept of dyscrasia was developed by the Greek physicians Hippocrates and Galen (129–216 AD), who elaborated a model of health and disease as a structure of elements, qualities, humors, organs, and temperaments. Health was understood in this perspective to be a condition of harmony or balance among these basic components, called *eucrasia*. Disease was interpreted as the disproportion of bodily fluids or four humours: phlegm, blood, and yellow and black bile. The imbalance was called *dyscrasia*.

The colonial settlements of the islands and southern American colonies presented particular problems for the first emigrants. It was at this time that a theory of "seasoning" developed among the new settlers. It was believed that people needed to be "seasoned," or

slowly and carefully exposed to new environments. People with “thin” blood were thought better suited to the hot tropics because their blood was watery, and therefore cooler and more inclined to produce cooling perspiration. Settlers with “thick” blood were better suited to the cold North. Thick blood is oily, so it protects against cold and damp. In order for the blood to adjust, it was thought necessary to use herbs and foods to thicken or thin the blood and to let people “season” for a year or two, moving slowly from region to region.

To quote Hippocrates: "The body of man has in itself blood, phlegm, yellow bile, and black bile; these make up the nature of the body, and through these he feels pain or enjoys health. Now, he enjoys the most perfect health when these elements are duly proportioned to one another in respect to compounding, power and bulk, and when they are perfectly mingled. Pain is felt when one of these elements is in defect or excess, or is isolated in the body without being compounded with all the others."

Since blood is formed from the nutrients extracted from food and drink, it is, by its very nature, quite prone to disorders of excess, or plethora, from gluttony. Excess of bad blood was seen in Bleeding disorders, like nosebleeds, gingivitis, rectal or anal bleeding, hemorrhoids; Skin disorders - blushing, flushed complexion; prominent capillaries, spider nevi, angiomas, hematomas; Pruritis - itching nose; prickling, itching and tingling in the flanks and temples, or on the skin. Fullness, heaviness - heaviness of body, especially behind eyes; drowsy, sleepy; weak, heavy limbs, gout. Stagnant blood, or blood stasis, can have many causes but the most prescribed method to remove bad blood was *Bloodletting* - which was much abused after Galen’s times in medicine's history, yet was used only rarely by Hippocrates, and even then, only applied conservatively.

The term *Eczema* we know today as an inflammatory responsive condition of the skin which is characterized by erythema, skin edema, vesiculation, itching, oozing or bleeding, flaking, blistering, cracking, crusting and lichenification. The term eczema comes from Greek word means ‘to boil out’ (ec=out; zema=boil) because in eczema, the skin is viewed as *boiling out* or oozing out elements of bad blood. Said to have been the name given by ancient physicians to "any fiery pustule on the skin", thus is was a common conception in monastic medical practice.

This condition, Bad Blood, became widely recognized in English and island colonial folk medicine. It was as frequently encountered in the North as well as the South Atlantic. Even today, elderly West Indians often view skin eruptions and itch as *bad blood.* The basic idea is that the blood is “unclean” due to the presence of “toxins,” as many people would say today. These are picked up from food, the bowels, parasites, or from the environmental contact. Causes include incomplete metabolism of food or waste products in the body, parasitosis, and poor excretion of waste products through the channels of elimination. The major organ systems involved are the liver (seat of the preparatory metabolism), the bowels, the cells (seat of metabolism), the lymphatics (internal transportation), and the congestion of the four major channels of elimination—kidneys, skin, colon, and lungs.

In colonial times there was also an implication that bad blood could be picked up from sexual or inherited taints. In the nineteenth century, when treatment of syphilis and gonorrhea was not as reliable as today, it was believed that residues of these diseases, or the toxins they created, could remain behind after the main expression of the disease had disappeared. This created “miasms” or “taints” to the blood, a common concept in Homeopathy. These could be passed on to children through the blood of the parents.

Originally the symptoms of scurvy were also included under "bad blood." Thus, many of the traditional "blood purifiers" or "alteratives" in herbal practice are also denoted as "antiscorbutics" in colonial herbal medicine. However, today this condition is usually treated as a separate disease.

In Renaissance England, when the great herbalist Nicholas Culpeper wrote, this condition was called "humors in the blood." This phrase reflected the very ancient doctrines of Greek medicine, adopted by medical teachings in the monasteries. When the four "humors" were out of balance some of them were left over in the blood. This meant that the fire of life burning in the organism was not burning clean, but leaving waste products or "humors." Galen (129–200) believed that blood was the dominant humour, and therefore an excess of this humour, bad blood or dystemper, was best treated by bloodletting and purging. The dominance of Galen's theories in the ancient world was such that his teachings prevailed for many, many centuries, as did the practice of bloodletting. By medieval times, bloodletting was usually carried out by a barber-surgeon; the red and white of the barber's pole is a reminder of their earlier role, with the red standing for blood, white for bandages or tourniquet and the pole itself for the stick grasped by the patient to assist in dilating the arm veins.

Yet, the single symptom most commonly associated with the 'bad blood' condition in the old literature is skin eruption, ulcer, or lesions of some kind. British herbalist Mary Thorne Quelch writes, "Whenever any form of skin disease is present, be it an eruption of the slightest type, such as the appearance of blackheads or pimples, or a serious outbreak of boils or abscesses, it may be taken for granted that some impurity is poisoning the blood." The idea is that the toxins come to the surface for removal.

A good description of "bad blood" is given by Dr. John Scudder by 1874. His account is rich in detail, comprising one of the best descriptions of this diagnostic pattern found in any of the old colonial, medical textbooks:

"You may say that 'bad blood' is a popular myth, and does well enough to base a nostrum advertisement upon, but it will hardly do for specific medication… "There you are wrong, for 'bad blood' is a real, tangible entity, with definite expressions and a definite therapeutics." But "how will we recognize it?"

The evidence of *bad blood* is best found in wrongs of excretion and of nutrition. There wrong of this type due to gluttony and constipation are countered by an effort upon the eliminative function of the skin, kidneys, and bowels to remove the foul materials. Thus one usually finds that all three of these routes of excretion show *effluvia*, foul odor, and a lesion caused by the effort, though the eczemas, ulcers, hemorrhoids, etc. In the case of the skin it manifests itself in cutaneous disease, taking the forms of the exanthemata in the simpler cases, and the graver forms of pustules, ulcers, and plaque, when the lesion is more persistent and severe. This fact has long been recognized, and the treatment of skin diseases has embraced means for removing *effete* and unpleasant materials from the blood by blood purifying herbs (alteratives) and purgation (laxatives).

Due to quite practical observation and empiric results in treating many skin conditions with herbal blood purifiers and by purging the bowels, it is no wonder these concepts have remained in modern herbal practice. I myself can attest, having treated thousands of cases

of skin conditions with herbal medications most effectively and when well prescribed drugs and nostrums of allopaths have failed.

Doctrine of Signatures

The author has well documented through his research and writings that humorism, a medical system which views disease as an imbalance of hot and cold, dry and moist factors, can be found universally in ancient medicines and represents the transition from shamanism to modern, atomic (biochemic) medicine. Just as striking as a universal medical trait which humorism prevails, but also that of the concept of the 'doctrine of signatures.'

The *doctrine of signatures*, dating from the earliest times, states that herbs resembling various parts of the body can be used by herbalists to treat ailments of those body parts. The natural world in those times was vibrant with images of Deity; for example 'as above, so below,' a Hermetic principle expressed as the relationship between macrocosm and microcosm. Even a theological justification, as stated by botanists such as William Coles, was that God would have wanted to show men what plants would be useful for.

The main categories of the Doctrine of Signatures are: (1) similarity between the substance used and the human organ; (2) resemblance in shape or behavior to a specific plant or animal; (3) correlation between the color of a substance and the color of the symptoms; and (4) similarities between the substance and the patient's symptoms for the use of a substance that might produce symptoms of a particular disease in a healthy person to remedy those same symptoms in one who is sick. The use of this Doctrine in the West Indies may have ahd many origins including Amerindian and colonial. The Waorani in Amazonian Ecuador have a similar logic.

Mimosa pudica (from Latin: pudica "shy, bashful or shrinking"; also called sensitive plant, touch-me-not, or shy plant) is a creeping annual or perennial flowering plant native to South America and the West Indies. Often grown for its curiosity value, the compound leaves fold inward and droop when touched by the human hand, defending themselves from harm, and re-open a few minutes later. It is well known that plants lack a brain and central nervous system, yet this plant uniquely responds to human touch and has never been adequately explained.

Mimosa pudica was recorded for use by one midwife in Trinidad to unwrap the cord from around an unborn baby's neck. Two plant tops were tied crossways, put in a pot and drawn as a tea. It was claimed that fifteen minutes after the pregnant woman drank the tisane for the baby to 'give a flip' and facilitate birth. There is an element of the unseen in herbal medicine originating from shamanistic medicine. Plant spirit healing, plant spirit medicine, plant spirit shamanism, is an ancient way of connecting and communicating with plants for healing. Traditional cultures have long viewed plants as teachers and guides. Symbolism has a long tradition in shamanic practices in Africa, among the Amerindians, and medieval Europeans.

Native Amerindian Medicine in the Colonies and the African Influx

The limited medical practices in England and France was readily surpassed by not only Spain but by those found in the Americas from pre-Columbian times and imports from Africa. These practices reflected different worldviews, but as in Christendom, medical

beliefs and practices the New World was not entirely separated from religion and even magic. Much of what is known of pre-Columbian practices has been inferred from traditional medicine and shamanism in general, yet a full review lies outside the scope of this paper. In brief, in both the Americas and Africa, illness was seen as a punishment for transgressing religious social customs or the product of witchcraft perpetrated by an enemy or sorcerer. Shamans operated between the material and spiritual worlds using divination to make diagnoses, often using herbal hallucinogens to enter into a trance state, which enabled them to make contact with the spirits that gave guidance on how to effect a cure. Curing involved rituals and offerings, fasting, massage, laying of hands, and the extensive use of medicinal plants.

Even though to varying degrees, Spanish humoral (monastic) medicine was the initial and imported medical practice in early Spanish America, yet in time there was a level of fusion between Spanish, Native Amerindian and African medical systems that was greatly facilitated by their similarities. All were based on magico-religious beliefs where illness was thought to have some supernatural cause; all were involved in humoral practices to some degree, and all made extensive use of medicinal plants and foods. Each medical system believed that it embodied the 'truth' about the cosmos and their worldviews although they were not always compatible. Again, due to the primitive conditions, the practical methods that worked to make patients better became the rule.

Originally, due to the political dominance of the Spanish state and church, it was difficult for medicine in Spanish America to adapt, but the number of dogmatically trained and licensed doctors remained small. The gradual weaknesses in the Spanish state and its institutions, their uneven domination of the colonies, the lack of support and supplies, and the growth of cities, arose the need to adapt to local, tropical conditions. The medical encounter did not therefore result in the complete replacement of one system by another, but in a complex reworking of ideas that had different expressions in different regions according to the nature of the societies found there, their medical traditions, inter-island exchanges by ship, and the environments they inhabited. This is one factor that made colonial medicine unique as its own subject.

In the sixteenth century Spain regulated medical practice more than any other European country. The duty of Christian charity guided the Spanish monarchs and Church to order the construction of hospitals from the earliest years of conquest. However, the number of royal foundations was few compared to those established by the religious orders and the Crown was slow to establish a medical infrastructure in the New World. Universities capable of awarding medical degrees were first established in Mexico and Lima Peru, 1631 and 1634 respectively. This was not enough to curb a drastic shortage of licensed physicians over time. Some doctors who had attended university in Spain settled in the New World, but even in the major cities, qualified doctors numbered only one or two; while many of those who practiced were in fact empirics who had not attended a university but acquired their knowledge through tutelage from both licensed practitioners and healers, often in hospitals, convents or pharmacies. In Mexico, some native healers were even authorized by the colonial government to practice.

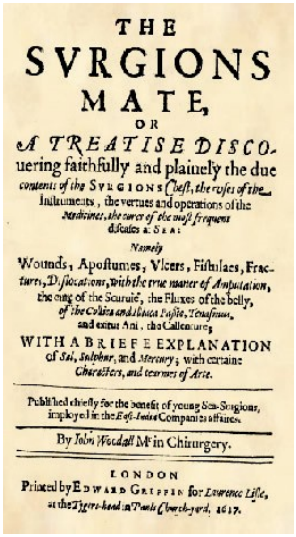
The Empire's low priority on health and lack of supplying old world drugs accorded to medical care in the Americas easily influenced adoption of native herbal cures, since tropical fevers took a heavy toll on pilgrims. And in colonial America, the Indians faced the worst health epidemics due to their lack of immunity to Old World diseases like smallpox.

Adaptation and exploration of new world herbs, spices, and foods became the rule rather than the exception, and colonial medicine quickly became an eclectic practice.

Pirate (Ship) Medicines

Could we be so bold to say or define "pirate medicine." Perhaps only an avid student of West Indian history, as the author, could ever contemplate such. There certainly was a *Brethren of the Coast*, a loose coalition of pirates and privateers commonly known as *buccaneers* very active in the seventeenth and eighteenth centuries in the Atlantic Ocean, Caribbean Sea and Gulf of Mexico. They were a syndicate of captains with *letters of marque* and reprisal who regulated their own privateering enterprises within the community of privateers, pirates, and with their outside benefactors. They were primarily private individual merchant mariners usually of English, Huguenot, and French origin, that avidly attacked Spanish ships carrying gold and silver. One rule of the ship required not only a cook but also a surgeon. As history reports, naval and ship medicine was borne out of high seas adventures during this tumultuous period and medicine chests became standard issue. And indeed, even the land bound Ohio State Medical Board by 1861 had developed a medical exam for ship candidates.

The study of colonial medicine was hampered in the 20th century due to the scant books and writings available. Yet from history we know that piracy and pirate (privateer) ships were essential for inter-island trade, since monarchial colonies were forbidden by law to trade with each other. Thus ship doctors and surgeons had access to not only old world drugs, but new herbal medicines and food used as medicine, e.g. limes for scurvy, that provides us a lens upon which to examine colonial medical practices which readily spread from one colony to another. Indeed, colonial doctors in North America benefited significantly from herbs and spices arriving from the West Indian islands and the lower Americas.

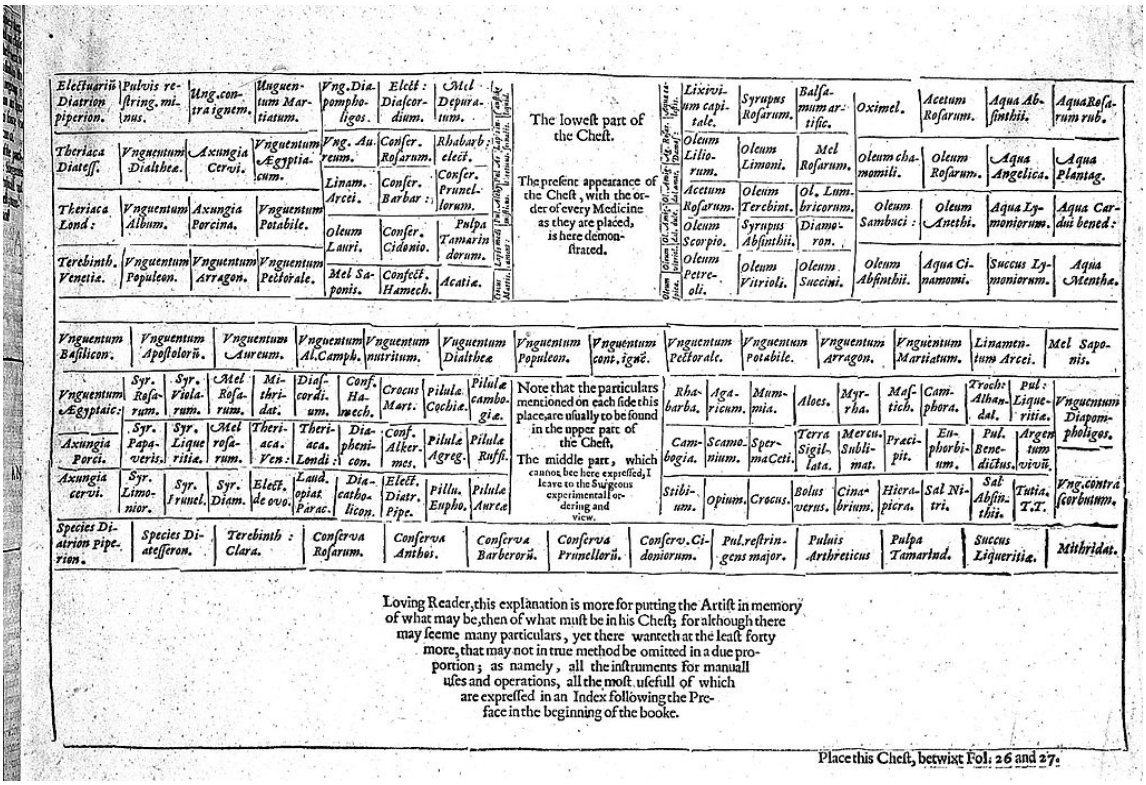

THE
SVRGIONS
MATE,
OR
A TREATISE DISCO-
uering faithfully and plainely the due
contents of the SVRGIONS Cheſt, the vſes of the
Inſtruments, the vertues and operations of the
Medicines, the cures of the moſt frequent
diſeaſes a SEAE
Namely
Wounds, Apoſtumes, Vlcers, Fiſtulaes, Frac-
tures, Diſlocations, With the true manner of Amputation,
the cure of the Scuruie, the Fluxes of the belly,
of the Colike and Iliaca Paſſio, Feauers,
and extinct Ani. the Callenture,
WITH A BRIEFE EXPLANATION
of Sal, Sulphur, and Mercury; with certaine
Characters, and termes of Arte.
Published chiefly for the benefit of young Sea-Surgions,
imployed in the Eaſt-Indian Companies affaires.
By Iohn Woodall Mr in Chirurgery.
LONDON
Printed by EDWARD GRIFFIN for Lawrence Lile,
at the Tygres-head in Paules Church-yard, 1617.

Nothing could be more evident of a ship medicine and colonial pharmacy than that found in John Woodall's classic book, *The Surgeons Mate*, first published in 1617, which was a shipboard manual that listed instruments and medicines found in the chest as well as special instructions for emergencies and ailments. There were amazingly 281 herbal remedies listed, which consisted of popular herbs of the day, rosemary, mint, clover, sage, thyme, angelica, comfrey, blessed thistle, juniper, hollyhock, absinthe and pyrethrum. John Woodall was an English military surgeon, Paracelsian chemist, businessman, linguist and diplomat. He made a fortune through the stocking of medical chests for the East India Company and later the armed forces of England. The World's First Compendium on Naval Medicine, Surgery and Drug Therapy.

At the beginning of the 17th century, health care provisions for ships undertaking long voyages varied widely, with vessels being poorly prepared to care for sick and wounded sailors, pilgrims, and slaves. The East India Trading company, who had large numbers of ships sailing around the world were among the first English companies to take action to standardize medical care at sea. They did this by appointing John Woodall as "the first

surgeon-general to the East India Company (EIC), on the recommendation of his patron Sir Thomas Smith, Governor of the Company. He was responsible for the selection of surgeons, the supply of surgeons' chests to the East Indiamen, and for the treatment of injured workmen at the company's small dockside hospitals". While he did much to improve the medical treatment for seaman, pilgrims and colonist benefited also. Not long after Woodall's reorganization of the ship's medical practices, the British government began to take an interest in overhauling their sea medical practices. In 1626, "the Privy Council decided to pay the Barber-Surgeons Company fixed allowances to furnish medical chests for both the army and the navy".

Woodall's medicine chest contained slots for 160 assigned medicines. There were 124 unique medicines in the diagram for the famous chest, with the balance being medicines found elsewhere in the chest. Woodall listed a great many more remedies in his book, the location of which in the chest are apparently left "to the Surgeons experimentall ordering and view." John Kirkup found "some 270 items of vegetable, animal and mineral origin" in the section of the surgions mate titled 'Medicines Physicall and Chirurgicall'. Another author, Joan Druett, identified 281 medicines in Woodall's book, of which "145 are herbal, while a total of 204 have a biotic [living] content."



The influence of new world botanicals is quite evident with such medicines as quinine bark, cinnamon water, and Woodall's repeated experience for mariners that the cure for scurvy was fresh food or, if not, using oranges, lemons, limes, and tamarinds. Already, beginning of the 17th century, New World herbs and foods were becoming into common medical use.

Lignum vitae (Guaiacum)

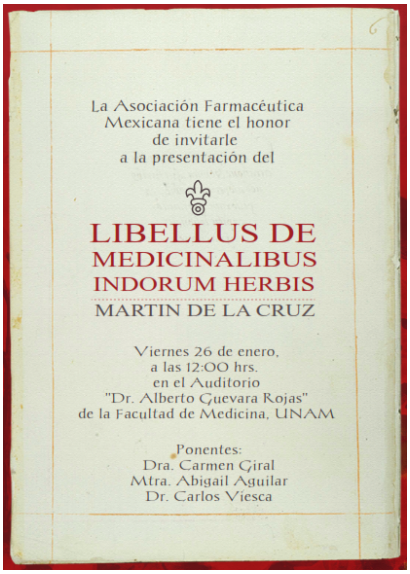
Lignum vitae is a tropical wood, also called guayacan or guaiacum from trees of the genus Guaiacum. The trees are indigenous to the Caribbean and the northern coast of South America and have been an important export crop to Europe since the beginning of the 16th century. The wood was once very important to ship captains for applications requiring a material with its extraordinary combination of strength, toughness, and density. "Lignum vitae" is Latin for "wood of life", and derives its name from its medicinal uses; lignum vitae resin has been used to treat a variety of medical conditions from coughs to arthritis to syphyilis, and chips of the wood can also be used to brew a tea. Other names for lignum vitae include palo santo (Spanish for "holy wood").

The Caribbean's first recognized medicinal plant for reproductive and other problems was lignum vitae (Guaiacum officinale). In 1603, Bartholomew Gilbert set sail for Nevis from London in the 50-ton ship *Elizabeth*, in order to cut lignum vitae and buy tobacco from the Amerindians. His journey had been organized by Sir Walter Raleigh who always sought to understand what happened to the Roanoke colony established sixteen years earlier. The most common date given for the arrival of tobacco in England is 27th July 1586, when it is said Sir Walter Raleigh brought it to England from Virginia.

One of the first recipes calling for guaiacum to treat syphilis originated in 1516 from Seville from "a certain spice-dealer who had it [but] was unwilling to show it except to his intimate friends." The surviving copy of the recipe was written down in 1519 by "Ippolito of Monterreale…in the house of Master Giovanni Lorenzo of Sassoferrato, a doctor of most excellent in every faculty." The first published medical recipe using guaiacum was printed in 1518 in Augsburg entitled A recipe for using a wood for the French disease and other running open sores, translated from Spanish into German. The rest of Europe was introduced to guaiacum through Ulrich von Hutten's 1519 book De Morbo Gallico in which he claimed the tree could "hele the frenche pockes cleane, pluckyng them vppe by the rootes, but specially whan a man ben diseased with them of alonge tyme." Behind toxic mercury, Caribbean guaiacum was the second most widely drug used to treat the scorge of syphilis that would plague Europe for centuries.

Even today we still use the *stool guaiac test* that detects the presence of fecal occult blood (blood invisible in the feces). In 1864, Dutch scientist Van Deen used gum guaiac as an indicator of the presence of fecal occult blood associated with disease. The test involves placing a fecal sample on guaiac coated paper (containing a phenolic compound, alpha-guaiaconic acid, extracted from the wood resin of Guaiacum trees) and applying hydrogen peroxide which, in the presence of blood, yields a blue reaction product within seconds.

Libellus de Medicinalibus Indorum Herbis



The Libellus de Medicinalibus Indorum Herbis (Latin for "Little Book of the Medicinal Herbs of the Indians") is an epic Aztec herbal manuscript, describing the medicinal properties of various plants used by the Aztecs. It was translated into Latin by Juan Badiano, from a Nahuatl original composed in the Colegio de Santa Cruz de Tlatelolco in 1552 by Martín de la Cruz. The *Badianus Manuscript* of 1552 is the first illustrated and descriptive scientific text of Nahua medicine and botany produced in the Americas. The original text was produced in Nahuatl and translated to Latin for European readers. It is a most significant text in the history of botany and the history of medicine as it contributed heavily to the development of colonial medicine.

The botanical aspects of the manuscript are significant, showing that the Nahuas had a classification system that was indeed highly sophisticated. In the history of medicine, there has been focus on the extent to which the manuscript was incorporating aspects of European humoral theories of medicine, uniquely arising independently from across the world.

Although most ethnopharmacological research at the moment focuses on these Mexican peoples, a few people have actually looked at the Aztec remedies as they were set down in the 16th century. In 2000, scientists at San Diego State University and Universidad Nacional Autónoma de México published a study of plants used in 16th century Mexican medicine, and concluded that the compounds present in those plants have “a broad spectrum of activities including… antibiotic, anti-inflammatory, cytotoxic” and several more. According to Alejandro de Avila (Flora: The Aztec Herbal), Mexico boasts one of the richest and most complex floras on the planet, with an estimated total of between 23,000 and 30,000 species.

The practice of medicine in the colonies was not only dependent on medical practitioners but more decidedly on the medicines available. From the earliest years of conquests, the Spanish Empire approached the study of Native Amerindian plants primarily from the perspective of their use and commercial value to Europeans. Notable plants that made it into European pharmacopoeia were guaiacum, sarsaparilla, chinchona (quinine), chocolate, cola, coca, and tobacco, but overall only a small proportion of those reported were adopted in Europe in the early colonial period, while in the colonies their use was popular and indigenous. Inventories of medicines, often though not exclusively associated with pharmacies, many of which were attached to hospitals and monasteries, constitute important sources of evidence for tracking the development of herbal colonial medical treatments. Most European medicines arrived in the New World through the normal trade routes from Spain, but they were actually supplied by merchants based in Lisbon, Antwerp or Venice. While merchants dominated the trade, *boticarios* in Spain also traded directly with those herbs and spices from the New World; some even became domiciled there, opening up pharmacies and conducting an import/export business.

Colonial doctors, hospitals and convents initially obtained their medicines from merchants or boticarios, but because of difficulties of timely supply, the poor quality of the medicines and costs, most hospitals and convents established their own indigenous herb gardens and pharmacies in monastic tradition. Private doctors also acquired their medicines from local pharmacies established in these institutions. Particularly important in Lima was the *botica* of the Jesuit College of San Pablo, which became the wholesale center for other pharmacies in Peru and received orders from all over the colonial settlements.

Also neglected in medical history is the adoption of African botanical materials. While Africans often found similar species in native plant assemblages, many crops introduced from Africa served as slave foods, such as pigeon peas, sorghum, oil palm, watermelon, ackee, black-eyed pea, cola nut, and okra, which were also consumed and used for medicinal purposes.

Dover's Powder

The originator of this famous powder, Thomas Dover, was a man of many hats—doctor, privateer (pirate), rescuer of Alexander Selkirk (the inspiration for Daniel Defoe's Robinson Crusoe), fashionable London physician, popular medical author for the general public, and self-publicist.

Dover's powder was a traditional medicine against cold and fever. The powder was an old preparation of powder of ipecacuanha (which was formerly used to produce syrup of ipecac), opium in powder, and potassium sulfate. The powder was largely used in domestic practice to induce sweating, to defeat the advance of a "cold" and at the beginning of any attack of fever. It was also known by the name *pulvis ipecacuanhae et opii*. To obtain the greatest benefits from its use as a sudorific, it was recommended that copious drafts of some warm and harmless drink be ingested after the use of the powder.

The following excerpt from a report penned by a Doctor Sharp, employed in the British naval service in the West Indies, in this case, in Trinidad, in 1818, illustrates its use. He writes :

At this period, thirty cases of acute dysentery also occurred amongst them and although nineteen of the number were men who arrived in the island from Europe on the 1st and 12th of June, yet, the symptoms even in them were equally as mild as in the assimilated soldier, and the disease yielded to the common remedies – viz – bleeding when the state of the vascular system appeared to indicate the use of it, but in general, saline purgatives in small and repeated quantities were only necessary with small doses at bed time, of calomel and opium, infusion of ipecacuanha or Dover's powder, and this with tonics, moderate use of port wine and a light farinaceous diet generally and speedily accomplished a perfect case.

Dover's Powder was available in Britain until the 1960s and in India until as recently as 1994. In many ways Dover's Powder was an ideal preparation, its opium content having analgesic and soporific properties and a small dose of *ipecacuanha* having expectorant

properties. However, opioid derivatives came to be considered unsuitable for minor illnesses, particularly for children. Dover's Powder was used extensively during the American civil war, by Italian troops in the western desert, and during the second world war by the navy, in the coxswain's box of medicines that was supplied to destroyers and smaller ships.

Carapichea ipecacuanha is the species of flowering plant native to Costa Rica, Nicaragua, Panama, Colombia, and Brazil. Its common name, ipecacuanha is also called "road-side sick-making plant". The plant has been discussed under a variety of synonyms over the years by various botanists. The roots were used to make syrup of ipecac, a powerful emetic, a longtime over the counter medicine no longer approved for medical use in the west, for lack of evidence of safety and efficacy. An example of emetic compound from the roots is emetine. One of the first recorded shipments of Ipecacuanha to Europe was in 1672, by a traveler named Legros, who imported a quantity of the root to Paris from South America.

To this day, the author makes regular use of ipecac cough syrup as an excellent expectorant. It always works to relieve a lingering cough when modern nostrums fail.

African Traditional Plant Migration

The native Amerindian population of the Caribbean was nearly replaced with African migrants who originated in tropical regions of the west coast of Africa. Research and folk tales show that New World Africans drew upon their tribal knowledge for food, medicines, and survival. Their shamans and people continued to employ familiar species as used in their homeland. Their foundation in tropical plant knowledge provided them critical knowledge for shaping Afro-Caribbean medical and folk practices.

Imported African cultivars were extensively used for both food and medicinal purposes. While the grains, fruits and tubers provided food, they knew of their leaves, barks and roots could also serve as medicines. Common plants like lemon, originally used in Africa only for it curative properties, was being cultivated and used medically in Brazil by 1549. By the early 1700s, African cola nut served as food and medicine for Jamaican slaves. Okra served both as a staple and to induce abortion had been recorded in Guyana. Other importation of medicinal food crops aboard slave ships included yams, sorghum, watermelon, and black-eyed peas. These plants contributed significantly to survival, health and economy in the Caribbean.

The slave shipping lanes across the Middle Passage introduced African grasses for bedding and fodder for cattle, a Spanish and Portuguese favorite. Megathyrsus maximus, known as Guinea grass and green panic grass in English, is a large perennial bunch grass that is native to Africa and was reported in Barbados in 1684 and introduced to Jamaica in 1745. Today it grows from Belize to Florida. Many common crops today provided ship food for Africans which established these plants in plantations. Reported species include rice (Oryza glaberrima), yams (Dioscorea cayensis, D. rotundata), cow [black-eye] peas (Vigna unguiculata), pigeon (Congo) peas (Cajanu cajan), melegueta peppers (Aframomum melegueta), palm oil (Elaeis guineensis), sorrel/roselle (Hibiscus sabdariffa), okra (Abelmosclus esculentu), sorghum (Sorghun bicolor), millet (Pennisetum glaucum, Eleusine coracana), the Bambara groundnut (Vigna subterranean), millets (Pennisetum glaucum, Eleusine coracana) and mangoes (Mangifera Indica).

The famous African plant, the Castor bean (Ricinus communis) was used for lamp oil, medicine and as a hair tonic. The kola nut is the fruit of the kola tree, a genus (Cola) of trees that are native to the tropical rainforests of Africa. The caffeine-containing fruit of the tree is used as a flavoring ingredient in beverages, and is the origin of the term "cola". Kola nuts are an important part of the traditional spiritual practice of culture and religion in West Africa, particularly Niger, Nigeria, Sierra Leone and Liberia. In the 1880s, a pharmacist in Georgia, John Pemberton, took caffeine extracted from kola nuts and cocaine-containing extracts from coca leaves and mixed them with sugar, other flavorings, and carbonated water to invent Coca-Cola, the first cola soft drink. Thus, the world-famous beverage actually originated from colonial imports – sugar, cola, and coca.

Haitian Medicine

Saint-Domingue was the French colony on the Caribbean island of Hispaniola from 1659 to 1804, in what is now Haiti. Haitians have been using traditional medicine practices for hundreds of years. The island of Hispaniola makes for a gateway study between indigenous Taino Indians, the Spanish who colonized it, the French Buccaneers who invaded it, and the slaves brought from Africa who now own it.

Herbalists, now familiar with the landscape of Saint-Domingue, were able to use a vast materia medica of herbs. Traditionally, hougans (male priest) and manbo (female priestess) were the guardians of this ancestral tradition, originating in Africa. They were also the gatekeepers of much of the herbal knowledge. In colonial Saint-Domingue, Doktè-Fèy (leaf doctor), fanm-chaj (midwife) and gangas (healers), also played major roles in the healing community on the plantations.

These spiritual and medical community leaders knew how to collect, prepare, and utilize plants and herbs to heal people's ailments. They knew how to pay attention to the rhythms of the universe, by the position of the moon, sun, planets, and stars. These healers saw natural medicine as a channel for energy, which could be used both for healing and for harm. They were, however seen as demonic, since Saint-Domingue was a Christian colony. These healers were also demonized because of the power and influence that they had in the slave community, which was undeniably threatening to the white power, which was determined to keeping them in chains.

Healers of Eighteenth century Saint-Domingue were often jailed and even killed by colonists. This violence necessitated an element of secrecy on the part of the healers to protect the magic of the knowledge from being stolen and abused first and foremost, but also to protect themselves and their community from harm. Ironically, given the nature of the times, where many diseases remained medical mysteries, where there was still limited knowledge about curing diseases, where medical doctors were desperate to find the next cure, it was actually the Haitian slave healers who held the knowledge of how to cure many local diseases. Many of the cures they found are still used to this day, in present day Haiti, and sought after by the local population.

Quinine

In the history of the first Counts of Spain must make special mention of a woman, Francisca Enríquez de Rivera, second wife of IV Count of Chinchon, Felipe IV appointed viceroy of

Peru. In 1629 took possession of the viceroyalty. A few months after arriving in Lima, the Countess started feeling sick with high fevers (ague) that raises fears for her life. The corregidor of Loja, who had suffered the same ailment and was cured by the extract from the bark of this tree that was given to him by an Indian and was quick to inform the Countess. This extract was quinine based, which said the Countess on the fifth day of her administration recovered. Upon regaining her health, the Countess ordered hoarding large amounts of bark on board back to Spain and she herself shared many doses to the sick. These people called the quinine "Countess powders". La Condesa through Cortez sent Jesuit missionaries throughout Europe distributing the tonic freely. Spanish galleons brought large quantities of quinine bark which would eventually be proven to treat malaria. The generic name of the plant is named "Cinchona". It made its way to Woodall's medicine chest and the history of pharmacy.

Conclusion

The discovery of the New World aroused an enormous amount of interest in Europe, in all Empires – British, Spanish, French, and Dutch. Inaccurate descriptions of early expeditions were mixed with wild stories describing cannibals, monsters and mythical animals in the regions. There was a keen interest eventually in reports of the wide variety of new foods, plants and herbal medicines that were to be found. The epidemic of syphilis believed to have originated in the New World increased this concern and led to a massive importation of two New World remedies, including holy wood (Guaiacum sanctum) and sarsaparilla (Smilax sp.). At that time, it was believed that each land provided the cures for its own special diseases, and syphilis came from the New World.

The Aztecs had considerable empirical knowledge about plants, perhaps more so than the Spanish. The emperor Motecuhzoma I established the first botanical garden in the Fifteenth Century and as the Mexica (the Aztec group that ruled in Tenochtitlan, now Mexico City) conquered new lands, specimens were brought to these and other botanical gardens. The Spanish chroniclers were very impressed with Aztec medical knowledge. Torquemada mentioned that Aztec battle surgeons tended their wounded skillfully and that they healed them faster than the Spanish surgeons. He also described the infinite number of herbs sold in their markets, the skill needed to distinguish between them, and that they cured without using mixtures of herbs. "They have their own native skilled doctors who know how to use many herbs and medicines which suffices for them. Some of them have so much experience that they were able to heal Spaniards, who had long suffered from chronic and serious diseases" (Motolinía 1971).

The Aztec medical concepts even persist into modern history. For example, the most well-known culture-bound syndrome in Mexico today is called *susto*, or "fright sickness" - a condition that has its roots in the Aztec medical concept of *tonalli*. To the Aztecs, a sudden fright might cause the tonalli - a type of soul - to leave the body. Such culture-bound syndromes are not only the province of "indigenous" peoples, but survive and affect the modern populace as well.

This is a list of English language words borrowed from indigenous languages of the Americas, either directly or through intermediate European languages such as Spanish or French indicates a link as to how much foods, herbs, and spices influenced the old world. Barabakoa or Barbecue is the Taino method of preparing fish by cooking it on a grill of sticks above a flame was first documented by Spanish explorer Gonzalo Fernández De

Oviedo y Valdés, in 1526. Its first documented use as a verb in the English language was made in 1661 in Jamaica. Batata – Potato used by the Taino as the name for what is now called a sweet potato, the English derivation, probably via the Spanish patata later became used for the potato which originated in Peru. This staple of the western diet was first exported to Europe by the Spanish in the second half of the 16th century. Tabaka – Tobacco, finding its way into English via the Spanish tabaco, this plant was popularly chewed or smoked in a pipe as documented by Spanish explorers such as Oviedo, Knight of Santiago. Chocolate comes to us from the Nahuatl tribe from Mexico and Central America. It is believed to be derived from combining the Nahuatl words *xococ*, meaning bitter and ātl, or water.

Today, the legacy of new world herbs is still present in cocaine, tobacco, as well as in chocolate, vanilla, cayenne pepper, cola, and allspice. In the beginning, their use was medicinal, and later incorporated into patent medicine, confectionaries, beverages, and spices. Colonial medicine, an amalgamation of monastic, native Amerindian, and African folk medicine, continues its legacy in traditional herbal practices. The reductionist biochemical model has not served as a suitable substitute, merely a supplement to understanding physiologic action and dose. Specifics and humoral physiology still rule our prescriptions.

It is time that medical history become more realistic, in order to gain a better appreciation of the colonial past with medieval and modern Europe. Serious discussion of the health impacts and disease of the early empires of Spain and Portugal has become a way of writing the "global" history of medieval medicine and epidemiology, but the history of herbal pharmacy and foods is richer, contributory, and decidedly less morbid; and more educational as well as entertaining.

Indeed, there developed in the West Indies a system of 'colonial medicine' whose purveyors founded not only famous patent medicines, foods, and beverages, but even pontifical medical schools, some of which survive in name to this day. Further, some of the more ancient humoral concepts of Greek-Arabic Medicine, remarkably appear in Aztec, Mayan, and Taino cultures, that was met by the monastically indoctrinated physicians arriving from Spain and Portugal.

The author posits that the world, historically, has experienced three great medical traditions:

1. Shamanism (supernatural);
2. Humoral medicines (elemental); and
3. Atomic (Biochemic, Modern Medicine)

Today, the University of New Mexico sponsors a course and uses instructors who are healers and health practitioners from the Southwest, Mexico and the Albuquerque community to provide information on the history of a colonial medicine which survives today - Curanderismo (the art of Mexican Folk Healing in the Latin America and Mexico). The course explores how colonial ancestors used traditional methods for healing, how they've shaped our cultural diversity of the past and present, and what the future might bring. The course features teachings of various humoral aspects of colonial medicine such as: intestinal blockage (empacho), spiritual cleansings (limpias), laugh therapy (risa

terapia), shawl alignments (manteadas) and preparation of medicinal teas (tes medicinales). [http://curanderismo.unm.edu/]

Colonial medicine, as an intriguing amalgamation of monastic/humoral, native Amerindian, and African folk medicine in the West Indies, continues its legacy in traditional herbal practices, and is an important legacy in the history of medicine, food, and pharmacy; and continues to this day.

References

https://en.wikipedia.org/wiki/Santo_Domingo
https://en.wikipedia.org/wiki/Central_University_of_Venezuela
https://en.m.wikipedia.org/wiki/Hospital_de_Jes%C3%BAs_Nazareno
https://en.m.wikipedia.org/wiki/History_of_hospitals
https://en.wikipedia.org/wiki/Pontifical_Xavierian_University_Faculty_of_Medicine
https://en.wikipedia.org/wiki/History_of_Bogot%C3%A1
https://en.wikipedia.org/wiki/National_University_of_San_Marcos
https://en.wikipedia.org/wiki/Disease_in_colonial_America
http://curanderismo.unm.edu/

- Banatvala, Jangu. Thomas Dover: Doctor, privateer, and rescuer of Robinson Crusoe. December 2016. BMJ.
- Davidovitch, Nadav, MD, MPH, PhD and Zalman Greenberg, MPH, MSc, PhD. Public Health, Culture, and Colonial Medicine: Smallpox and Variolation in Palestine During the British Mandate. Public Health Rep. 2007 May-Jun; 122(3): 398–406.
- Foster, G. M. (1953) 'Relationship Between Spanish and Spanish-American Folk Medicine'. Journal of American Folklore 66: 201–217.
- Boericke, William. Materia Medica. 1927
- Foster, G. M. (1994) Hippocrates' Latin American Legacy: Humoral Medicine in the New World. Gordon and Breach: Langhorne, PA.
- Jones, Norman. The English Reformation: Religion and Cultural Adaption. Blackwell 2002.
- Kehoe, Mark C., "Article Title", http://www.piratesurgeon.com
- Lans, Cheryl. Ethnomedicines used in Trinidad and Tobago for reproductive problems. J Ethnobiol Ethnomed. 2007; 3: 13.
- McCleery. "From the Edge of Europe"; Gallinari, Diego Alvarez Chanca; Paniagua, Doctor Chanca.
- McWilliams, Charles. Ecclesiastic Medicine. SMOKH. 2012.
- Motolinía, Friar Toribio de. 1971 [1541] Memoriales o libro de las cosas de la Nueva España y de los naturales de ella, E. O'Gorman, ed. Mexico: UNAM.
- Newson, Linda A. Medical Practice in Early Colonial Spanish America: A Prospectus. Bulletin of Latin American Research, Vol. 25, No. 3, pp. 367–391, 2006. King's College London, University of London, UK.
- Nakato E. Joel-Lewis, Kiwanuka R.G. Lewis. PAN-AFRICAN INDIGENOUS HERBAL MEDICINE TECHNOLOGY TRANSFER. African Traditional Herbal Research Centre.
- Schiebing, Londa, Plants and Empire: Colonial Biosprospecting the Atlantic Worlds, Harvard University Press, 2004.

- Sheridan, Richard B., Doctors and Slaves: A Medical and Demographic History of Slavery in the British West Indies, 1680–1834, Cambridge: Cambridge University Press, 1985.
- Torquemada, Friar J de. 1975-1983 [1615]. Monarquía Indiana. M. León Portilla, ed. 7 vols. México: UNAM (1615).
- Wood, Matthew. The Earthwise Herbal: A Complete Guide to New World Medicinal Plants. 2009
- Wallis, P., Jenner, M. Medicine and the Market in England and Its Colonies, c. 1450–c. 2007 by PALGRAVE MACMILLAN
- Zammit, W.; Freller, T. Knights, Buccaneers, and Sugar Cane: The Caribbean Colonies of the Order of Malta. Midsea Books 2015.

To contact the author: panamint@sisterisles.kn

Hospitallers of the Americas

The Medical Works of the Hospitaller Orders of the Americas

'Not their riches, nor their power, nor their military prowess have given them their distinguished place in history, but their deeds of mercy to the sick and wounded.'

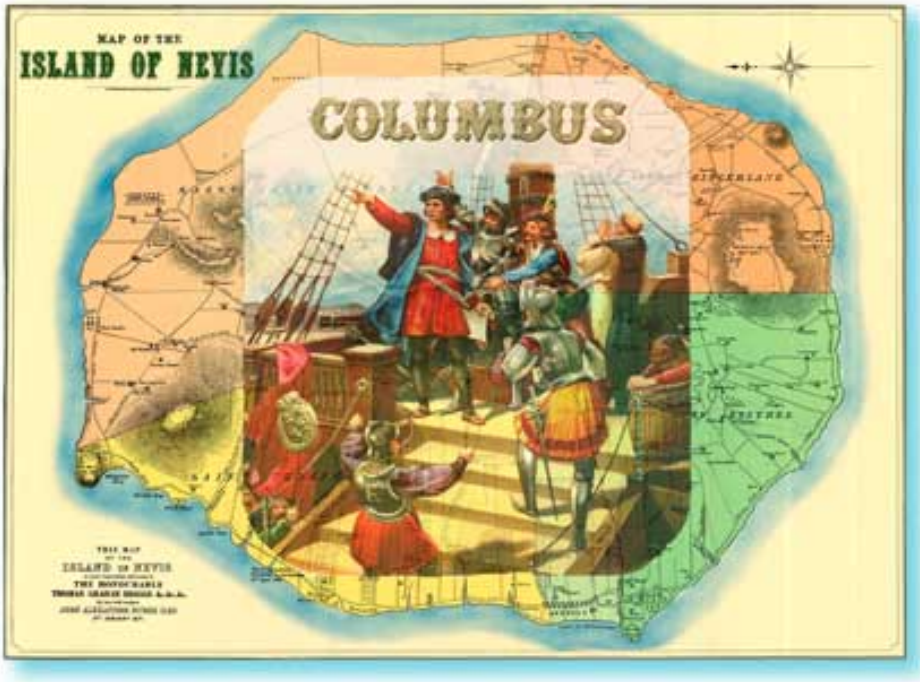
VOLUME VII

SACRED MEDICAL ORDER KNIGHTS OF HOPE

By: Msgr. Prof. [Dr. of Med.] Charles McWilliams

NEVIS ISLAND

A Unique View of Its Early History

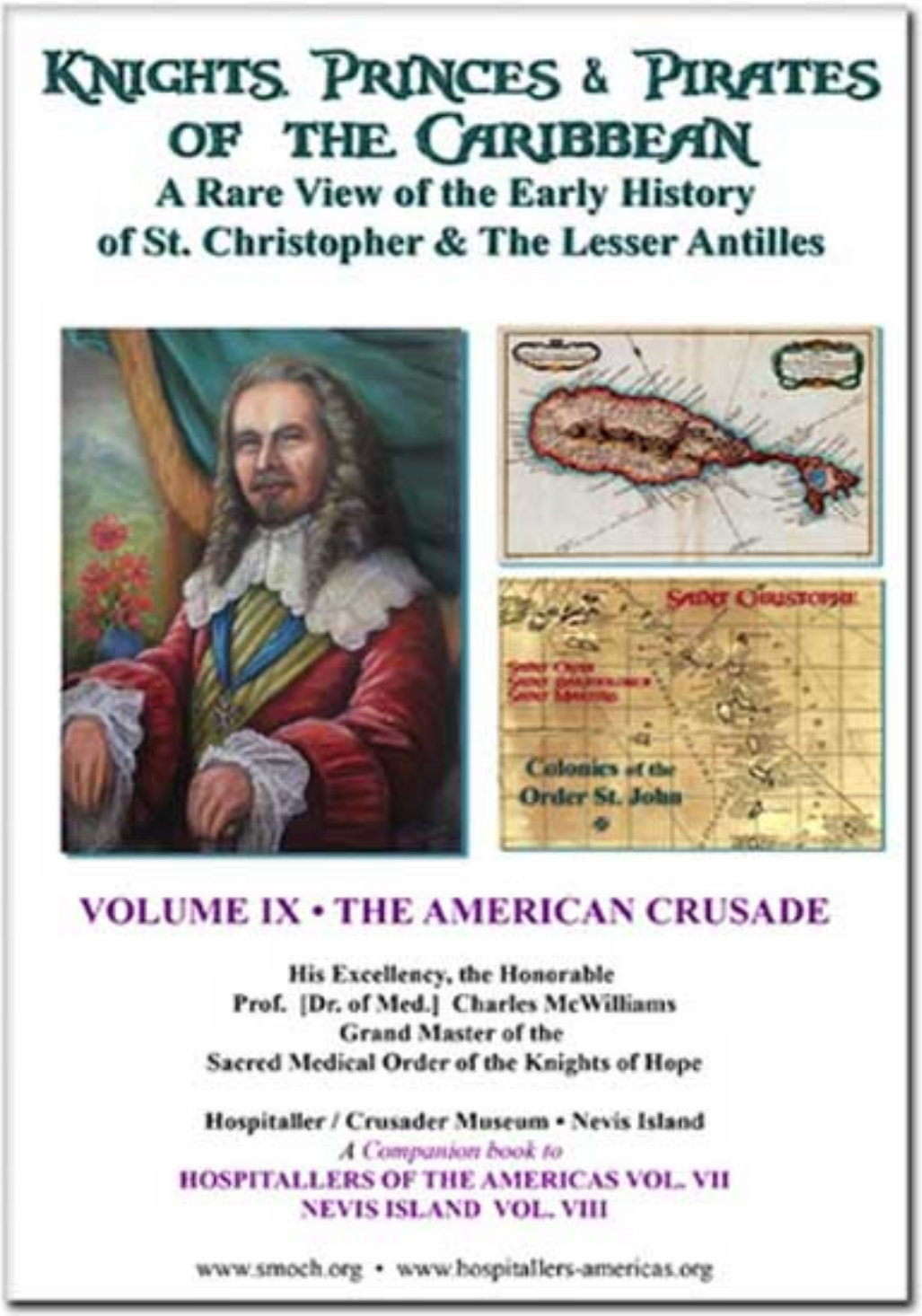


His Excellency, the Honorable
Prof. [Dr. of Med.] Charles McWilliams

Grand Master of the
Sacred Medical Order of the Knights of Hope

Crusader Museum • Nevis Island

www.hospitallers-americas.org



BOOKS AVAILABE ON AMAZON
Or

[ORDER HERE]