

# Colonial Cultivation and Concoctions

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Have you ever wondered how to increase the value of your property? One way would be to include a well-cultivated herb garden, that is if you were a seventeenth-century colonist. Not only were the herbs much sought after for their culinary uses but also for their medicinal properties. Today's medical library may not include a collection of botany books, yet botanical knowledge was a large part of early medical training and the mainstay of the "cavalier concoctions" used by colonists for medical treatment.

In gathering together its first 225 settlers to go to America, the directors of the Virginia Company of England instilled a sense of responsibility in these adventurers to discover plants for medicinals. A few colonists were lured by the prospects of a profitable drug trade. After all, the Spaniards were doing well and had a monopoly on the drugs and spices from South America, in addition to the gold. They were even attempting to block the transplanting of the New World plants. Besides profits, the Virginia Company did have some concern for the health and welfare of these first settlers, and of the first 225, seven were medical professionals.

The medical profession in England had, at that time, emerged as three distinct groups: the apothecaries, physicians, and barber surgeons. The development of these three groups is a topic unto itself. Briefly, the word "apothecary" goes back to Norman times, meaning anyone who kept a shop of such non-perishable commodities as spices, drugs, comfits, and preserves. At the time of the "Jamestowne expedition," the apothecaries were incorporated with the Grocers Guild, hence the apothecary's interest in spices and such. In 1617, James I granted the apothecaries a separate charter. At various times throughout the seventeenth century, the apothecary emerged as not only the dispenser of medicine but also as the general practitioner of medicine.

The physicians were the elite of the original groups. They did not want to concern them-

selves with "general practice," yet they did not want the apothecaries to sell medicine without a prescription from a physician. The physician, in a classical sense, was the best educated and had behind him the tradition of the Royal College, which had been founded in 1518.

The barber surgeons had been organized since 1540 and were the least educated of the three. They assumed responsibility for any "mechanical" treatment needed by their clients. From the three groups, at times rivaling one another, the Virginia Company attracted seven members. These were apothecaries Thomas Field and John Harford, the physician Walter Russel, and four barber surgeons: Will Wilkinson, Thomas Wotton, Post Ginnat, and Tho Cowper. Only one of the barber surgeons was included among the 144 passengers who first came to Virginia in 1607, and the remainder of the professionals were members of the second sailing in January 1608.

Times were rigorous for these early colonists, and their famines, unfamiliar fevers, and flixes took their toll. By January 1608, when the first supply ship arrived, only 38 of the original settlers were still alive. The surgeon who accompanied the first expedition is not mentioned after 1607 in any extant records. The two apothecaries and one physician mentioned before were not noted in the records, and it is presumed that they, like the majority of the new inhabitants, did not survive. Because these settlers had to treat their ills as best they could with little medical guidance and few materials, there was the impetus for them to discover native plant remedies.

The colonists made requests to the Virginia Company to send them medical supplies and personnel, but communications being what they were, they did not receive their next physician, Dr Lawrence Bohun, until 1610. Trained in Leyden, Bohun was a well-educated man who stayed for only one year in Virginia before returning to England. It is uncertain how much

he added to the well-being of the colony as he spent most of his time investigating the medicinal properties of the local plants. He experimented with a white clay that he claimed had absorbent and "alexipharmic" properties. His vegetable remedies included the abundant sassafras and *Galbanum mechoacon* or *rubarbum alum*. *Rubarbum alum* was thought to be good for the "purginge of fleame and superfluous matter."

Bohun returned to England with Lord Delaware, leaving the colonists without any medical authority for the period from 1611 to 1621. Again, they complained of their plight to the Virginia Company. Dr Bohun was appointed Physician-General in 1620 but was killed *en route* when Spaniards attacked the ship on which he was traveling. In 1621, John Potts was selected to replace him. He was accompanied by an apothecary, Joseph Fitch, and on his arrival took on one of the colonists, Mr Townsend, as an apprentice. But once more disaster intervened as Joseph Fitch was killed in the Indian Massacre of 1622. There is no record of Mr Townsend's practicing as an apothecary, and indeed, of no practicing apothecary until the eighteenth century. This is probably related to the collapse of the Virginia Company in 1624, after which there would have been a lack of organized travel facilities for prospective emigrants and no promises of profit which might have attracted medical professionals.

The colonists were, therefore, left to take medical care into their own hands both for themselves and their families. Anyone who showed skill in the treatment of disease or ability in the use of local plant remedies quickly became recognized. The local Virginia legislature responded by passing a law in 1632 that required the parish minister to assist the sick. Occasionally a supply ship's surgeon, while in port, would care for the sick colonists or might even settle in the colony himself. If he did, he was generally considered a ship's surgeon "that knows nothing above the common remedies—not acquainted with plants or the other parts of the Natural History to be any service to the worlde."

As the plantation system developed, it became necessary for the owners to become well versed in the local remedies to preserve the health of their family and servants. A number of

publications appeared for the purpose of assisting these owners including *Every Man His Own Doctor or the Poor Planter's Physician* printed in Williamsburg in 1734. The Virginia colonists were developing their own style of society in which the medical practitioner was both a tradesman and a craftsman. This combination prevented the establishment of the guild system under which their English counterparts would be either an apothecary, physician, or barber surgeon, but not all three. The physicians regarded themselves as professionals, the apothecaries were craftsmen, and the barber surgeons were considered tradesmen. On the other hand, the Virginia practitioner did what was needed, diagnosed his cases, dispensed his own medicines, and engaged in what surgery he could. He was a multi-specialist.

As the colonists started to prosper, less time had to be spent on mere survival, and with increasing prosperity a plantation owner might be able to afford to send his son abroad for five to six years of medical education. Whether learning medicine by the apprentice system in Virginia or studying at one of the major European universities, the student was still exposed to botany which remained a significant part of the curriculum. Even those who trained to be physicians in the European sense often had such titles as surgeon-apothecary or physician-apothecary when they returned to Virginia to practice. Usually these new physicians retained their keen interest in botany, not only out of a need to find remedies to cure New World ills, but also for the purpose of classifying the abundant flora. The improving conditions in America gave these developing "aficionados" the opportunity to increase their knowledge of plants. At that time there was growing world interest in the classification of fauna and flora, and it was frequently the physician, astute in botany, who made significant contributions.

Dr John Clayton of Gloucester County, a self-educated physician, wrote what is considered to be the best treatise on American plants, namely *Flora Virginica*. It was first published in 1739 in Leyden under the name of a Dutch botanist. Hence, Dr Smith-Barton is credited with the first "notable" American treatise on the subject—"Elements of Botany," published in 1803. He was a professor of medicine at the University of Pennsylvania and was noted for his

objections to the popular theory of "similia similibus" or "like by like." This implied that every country possessed the remedy for the diseases which prevailed there. A fine example of this is *Polygala Senega* or rattlesnake root. Not only was this plant found in the terrain inhabited by the rattlesnake, but the observer, with a little imagination, might conclude that the root looked like the tail of a snake.

Both Dr John Mitchell of Urbanna, Virginia, and Dr Alexander Garden of South Carolina contributed vastly to the describing of new genera of plants. Dr Mitchell is credited with 25 genera of plants, and he also described the life cycle and reproductive mechanism of that curious American animal, the opossum. He was well educated, having been trained in Edinburgh, and subsequently having made contributions in other areas of natural history. Dr Garden also studied at the University of Edinburgh. He is described as the "parable of the opportunities, temptations and limitations of American life." He was perhaps the most accomplished American botanist of his time, yet he never produced a significant systematic work. Most of his correspondence was via letters to other notable naturalists, and hence his name appears more often than any other American in the famous work by the Swedish botanist, Carl Linnaeus, entitled *Systema Naturae* (12th edition). Dr Garden is remembered by many for the sweet smell of the gardenia, a flower which bears his name.

Plant identification and description were also tempered by the accepted medical practice of the time. In 1760, Dr William Douglas described the traditional approach as "bleeding, vomiting, blistering, purging, and anodynes, etc., and if the illness continued there was repetendi, and finally murderandi." Another physician, John C. Lettsom, who lived in England at this time, summed up the common theories thus:

When any sick to me apply,  
I physicks, bleeds, and sweats 'em.  
If after that they choose to die,  
What's that to me? I Lettsom.

Bleeding was done by the ubiquitous leech or by a special instrument known as a fleam. The colonists, already concerned with preventive medicine, would bleed themselves often according to a schedule in hopes of pre-

venting an affliction. There seemed no limit to the amount a person could be bled except exsanguination. It has been said that George Washington, who had pneumonia, was probably bled to death as a "cure" for his infection.

Bleeding may have been popular, but equally in demand were emetics. There were many "excellent" agents available to induce vomiting. The most widely used at that time, and a drug still recognized today, was tartar emetic (antimony potassium tartrate). In addition to its properties as an emetic, it was used to treat parasitic infections and today is of use intravenously as a treatment for schistosomiasis, mainly of the japonicum type. Although inexpensive and effective, its application is limited by highly toxic side effects including exfoliative dermatitis, toxic liver necrosis, and toxic myocarditis.

Ipecacuanha, another popular emetic, is well known to today's pediatrician. Its original use was not only as an emetic but also as a treatment for diarrhea. The native Brazilians had recognized its effectiveness in dealing with this symptom probably in cases of amebiasis and sold it in 1658 to the French as a secret remedy for dysentery. The source of the "secret" remedy is the dried rhizomes of *Cephaetis ipecacuanha* or *Acuminata ipecacuanhae*.

These two methods, bleeding and vomiting, were used in hopes of ridding the body of its poisonous affliction, and if they failed, the colonial physician could resort to blistering. For this purpose, mustard seeds were ground and mixed to form a paste which was applied to the skin in the form of a poultice or plaster. If the mustard seed failed to draw the poison to the surface, a paste made from dried Spanish Fly (*Lytta cantharida vesicatoria*) was applied to the skin. This was considered a powerful vesicant and surely would not fail, and if taken internally, it had the additional properties of a diuretic and aphrodisiac.

Diaphoresis was another means of expelling the unwanted humors from the body, and a tea made from the root bark of Sassafras served the purpose well. The overtaxed colonist, as well as the physician, found use for this for an interesting reason. When English goods were boycotted in an attempt to repeal the Townsend Acts, there was a shortage of fine English tea, and Sassafras was substituted. The

colonists soon realized that Sassafras was better left off the shelf as a medicinal, but their desire for English goods did not stop a revolution. Although diaphoresis was desirable, fevers were not, and for these, the sought-after remedy was cinchona or "Peruvian bark." The colonial physician had the Jesuit missionaries to thank for recognizing its properties in curing malaria or relapsing fever. The active ingredient, not known at the time, was quinine, and today a derivative of it, namely quinidine, is used as an antiarrhythmic and as a means to relieve muscle cramps.

Cathartics, also known as purgatives, were a great mainstay of treatment, and the colonial physician frequently relied on botanical remedies such as jalap, ipecacuanha, and rhubarb. In some instances, cathartic concoctions were significantly popular to carry the name of the originator. One example is P: Rudii, a rolled pill named after Eustachius Rudius, and it contained colocynth (also known as bitter apple and bitter cucumber), Scammony (residue of the plant *Convolvulus Scammonia*), Turpeth root, Socotrine aloes (from an aloin), cinnamon, cloves, spirits of wine, salt of tartar, and Black Hellebore root. It was claimed that it was even effective in the treatment of some "social diseases."

Pain relievers and sedatives were just as much in demand then as they are today, and opium headed the list. The abundant "Jamestown weed," *Datura stramonium* was the local source of a narcotic-like drug. It was a sedative and anti-spasmodic in small doses, but in higher doses it was hallucinogenic, though colonists praised this plant for its "cooling effects." For the more minor pains, the physician might rely on a local anesthetic; for example, the pain of a common sore throat was relieved by a gargle prepared from alum. In colonial days a more drastic use of alum was to pack the uterus in case of post-partum hemorrhage, but in modern times it is a spice used in canning.

No list of medicines would be complete without mentioning three of the more all-purpose substances praised by the early colonists and used by the colonial physician to maintain his patients' general well-being. *Polygala Virginia*, better known as seneca rattlesnake root was considered a reliable treatment. Its application was varied, and its reputation, according

to William Byrd II, "increases every day." Byrd noted that, "The tincture of it has done wonders in the gout----- . By its purging, its diuretick, and diaphoretick qualities it is of great use in the dropsy----- of great efficacy in Pleuretick Feaver ----- (and) a specifick against worms----- for the bite of a mad dog----- it may be perhaps as sure a remedy, as for the bite of a rattlesnake."

Byrd also commented on the attributes of the popular aromatic licorice-like woodland herb, ginseng: "The earth has never produced any vegetable so friendly to man as Ginseng. I have found it very cordial and reviving after great fatigue, it warms the blood, frisks the spirits, strengthens the stomach and comforts the bowels exceedingly. All this it performs without any of those naughty effects that might make men too troublesome to their poor wives."

Although the colonial physician may not have recognized the lack of medicinal value of rattlesnake root and ginseng, he probably never doubted the increasing popularity of tobacco. Tobacco was the New World plant that would make men rich. Little did the early colonist guess its future role in medicine. Tobacco was not only profitable as a luxury commodity but also as a remedy, for it "purgeth superfluous fleame and other gross humors, openeth all the pores and passages of the body . . ." It was also claimed that tobacco could heal gout and ague, cure hangovers, and reduce fatigue and hunger. Of the more than 2,000 agents identified in tobacco, the best known is nicotine, which may decrease fatigue and curb the appetite. Despite the custom of not inhaling, the seventeenth-century smoker spent much more time tending his long slender pipe which may have kept him from falling asleep or eating too much. Tobacco probably did little for the colonist's swollen great toe or the fevers of malaria. Who would have thought that such a profitable weed could lead to some of the terminal diseases of today?

The colonists were certainly imaginative in their approach to medical treatment, drawing both on the standard remedies, as well as native plants. What emerged was a multi-specialist apothecary-physician, vital to the community as were cultivation and identification of the local plants to him. One has only to think of how frequently digitalis is prescribed to realize that even as modern physicians without an herb gar-

den in our backyard, we certainly have one in our doctor's bag.

*Transcribed from a talk given in a Senior Elective in the History of Medicine at the Medical College of Virginia, May 1980. Sources used in preparation were:*

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Bill Cabbell, Curator, Colonial Williamsburg Apothecary Shop (personal communication)