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The Drug Trade in Early North America

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THE DRUG TRADE IN EARLY NORTH AMERICA

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Thesis Presented to the Graduate Faculty of the College of William and Mary in Candidacy for the Degree of Master of Arts

Department of History

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My thesis was written to explore to what extent the apothecary drug trade played in the inspiration, creation, and success of the Jamestown colony in Virginia. My research involved primary documents written by New World explorers and colonists, primarily those written by the Roanoke and Jamestown colonists. I created a historiography from books written by historians on the subjects of the Roanoke colony and the Jamestown colony, as well as a few on English medical practices of the late sixteenth and early seventeenth centuries. My research revealed that the founders of the Jamestown colony were aware of the potential of the apothecary drug trade from the writings of the Roanoke colony, who were in turn inspired by the drugs imported to Europe by the Spanish. Records showed that the Jamestown settlers did export drugs to England, and thus did participate in the research and trade of drugs. The drug trade did prove successful in the form of a Caribbean strain of tobacco, then sold as an apothecary drug in England.
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INTRODUCTION

Historians have analyzed the reasons behind English settlement in America for nearly as long as North America has been inhabited by the English. The English who settled in North America at the turn of the seventeenth century did not go blindly into their venture, nor did they go without reason. The English were inspired to colonize North America for many reasons, the strongest of which were economic in nature. One of these economic draws was the foreign drug trade.¹ The discovery of medicinal products by the English in their own territories was a key objective in both of the first two attempts at colonizing North America. The English were so inspired by the success enjoyed by the Spanish in the realm of pharmaceutical exports that they planned on exporting drugs to Europe themselves. The founders of the first English colony, Roanoke, were influenced by the American botanical drugs the Spanish had exported from Central and South America throughout the sixteenth century. When planning on who would be sent to colonize an English settlement, the companies deliberately chose people who would have the skills to find useful botanicals. This was to an intelligent move, as the ultimate success of Jamestown came from a long search for a successful drug. The colonists attempt to find an economically viable export culminated in the growth and export of tobacco.

HISTORIOGRAPHY

The Jamestown colony would not have been created without there being a solid argument for the English to occupy the New World. Happily for those who felt a colony was a good idea, there existed the argument that a colony would provide England a place to find and export marketable local commodities. Export, in turn, would strengthen England economically. Thus, economic success was at the heart of English colonization. The English were undoubtedly influenced by the need to broaden England’s trade market, whether in drugs or in other commodities. In her essay on how economic issues formed the Atlantic World, Nuala Zahedieh discusses how explorer Richard Hakluyt convinced Queen Elizabeth of the imperativeness of western expansion by arguing the need to expand England’s economy through the creation of colonies like Roanoke and Jamestown.

Conquest, tribute, and the rich mines that had been prominent in the successful Iberian empires played little part in Hakluyt’s vision. English settlers would harness American soils and climate to produce goods to satisfy all England’s imported wants, at once relieving the country of surplus population and rendering it independent of foreign suppliers.2

The drug trade fits nicely into this model, which firmly sits within the Virginia trade goods category and would replace England’s need for foreign medical botanicals. The Jamestown settlers are too often painted as literal gold-diggers, hungry for riches to rival those of Spain. Zahedieh’s argument that

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English settlers wanted something far more attainable and down-to-earth is a refreshing and far more realistic take on the reasons behind colonization.

The search for merchantable drugs in the New World occurred over the course of three decades. The transformation of the colony from a colonial outpost to an economic stronghold happened gradually, through trial and error. This transformation is studied by Edmund S. Morgan in *American Slavery, American Freedom*. Morgan weaves together the reasons behind English settlement in Virginia (overpopulation and enclosure in England, being his most deftly argued), the adoption and exportation of a Caribbean strain of tobacco, and the eventual rise in the use of slaves. Morgan follows the plant from its start in Jamestown to the famous boom it caused, setting off the influx of settlers, land purchase, the rise of indentured servitude and culminating in slavery. Like Hatfield, Morgan would agree that Atlantic trade goods inspired the movement of people, thus a desired commodity to export (tobacco) would inspire the import of more people and assure the Colony’s development and survival. Morgan’s argument relies on the settlers being motivated enough to succeed. He discusses this as a direct contradiction to the myth of the “lazy gentlemen”, the phrase itself being mockingly used as a chapter title in *American Freedom,* *American Slavery*. Popular history has painted the Jamestown colonists as lazy, incompetent gentlemen, who could not be bothered to lift a finger to work, even to save their own lives. This is a fraudulent myth, as proven by the colonist’s search for a marketable export.

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Tobacco was not a sudden movement that saved the Jamestown colony, rather, it was a peak in the process to capitalize on the natural commodities of the Chesapeake. Virginia's transformation into a colony dependent on tobacco happened only a mere ten years after initial settlement, but the search leading up to tobacco's success began almost fifty decades earlier. In 1566 Humphrey wrote a treatise, *Discourse of a Discoverie for a New Passage to Cataia*\(^4\) that theorized that an English colony would alleviate economic concerns in England by cultivating merchantable products. Humphrey eventually led a colony attempt in Newfoundland, but unfortunately he was lost at sea upon returning to England.\(^5\) Another Englishman who desired that his home country reap the commercial benefits of the New World was the famous Sir Walter Raleigh. Raleigh campaigned fiercely for English colonization abroad and in 1584 he secured a patent for colonization. Soon after he began a mission-critical friendship and partnership with scientist and astronomer Thomas Hariot. Raleigh also enlisted the help of two cousins, both by the name of Richard Hakluyt, who wrote works campaigning for the creation of an English colony abroad.\(^6\) The Hakluyt cousins proved themselves indispensable in the creation of an English colony. Their accounts of English exploration were among the most convincing arguments for colonization, and the potential for exporting commodities ranked

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Richard Hakluyt the younger was particularly influential for the Jamestown colony. His books became part of the Virginia Company’s instruction manual for the colonists. Hakluyt wrote and edited many books, the most useful to Jamestown being *Divers Voyages* written in 1582 and *Principal Navigations, Voyages and Discoveries of the English Nation* in 1589, four years after the initial Roanoke colony. Hakluyt’s writings were compilations of English discoveries while exploring America, and they were used as a road map and guidebook to English settlement, both in where to settle and what endeavors could potentially make money. The placement of the Jamestown colony was chosen by recommendations from Hakluyt, a man who never saw nor set foot on Virginia soil. Hakluyt also had influence over the Virginia Company in a more direct way; he was one of the chief promoters of the colony and had petitioned the King to allow the company to form. Hakluyt and the Company’s physicians were among those were most vehement about the potential of the apothecary drug trade.

The search for merchantable drugs began on the ground with the Roanoke colony. In the sixteenth century mind, Roanoke and Jamestown were inextricably intertwined. Some of the investors of the Roanoke colony were involved in the Jamestown colony, though the twenty years between the two

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7 Kelso, *Buried Truth*, 32.
11 Ibid, 21.
colonies was too long a period for the ventures to share colonists.\textsuperscript{12} The two colonies shared inspiration and potential; most notably the potential create an economic gold mine for England. The Roanoke colony is often brushed over in history books as the failed lost colony whose main contribution to history was to disappear. In reality, Roanoke contributed more to the foundation of America than just a good mystery. Roanoke produced two attempts at colonization, the first lasting a few months, the second lasting around a year. The first attempt at colonizing Roanoke was not a success as far as permanence may be concerned, but the information the colonists collected would eventually lead to successes, at least where pharmaceuticals were concerned. The ill- fated members of the first colony settled on a marshy island off the Virginia coast\textsuperscript{13} in 1585.

The colonists were initially led by Sir Walter Raleigh, who was fulfilling his dream of establishing an English colony. The colony of 107 men spent the summer struggling with a tainted food supply and increasingly alarmed natives. After only three months on the Island the colonists were rescued by Sir Francis Drake and returned to England. Though they came back empty handed, they did return with valuable information. Most of this came in the form of the invaluable writings of Thomas Hariot, scientist and friend of Raleigh. Hariot returned with what he felt was proof that a Virginia colony would be profitable for the English. Accompanying the writings of Hariot were drawings by artist John White, a man whose captured likenesses of the local Indians are some of the only sketches we

\textsuperscript{12} Kelso, \textit{Buried Truth}, 171.
\textsuperscript{13} Now North Carolina’s outer banks.
possess of the Indians. Thanks to scientists like Hariot, a legacy of Roanoke would be its place as an economic roadmap for the Jamestown settlers.\(^{14}\)

White and Hariot were ethnographers before the idea of ethnography even existed. Their studies of the indigenous peoples were useful on many levels, and while their recordings would later be indispensable for Indian studies, their modern value lay in the men’s faithful recording of the Indian’s use of local commodities. Virtually every item Hariot listed in the commodity chapter of his work was brought to his attention by the local Indians. Hariot’s text was published in a 1588 booklet titled *A Brief and True Report of the New Found Land of Virginia*, which was organized into sections, of which the first was a listing of all the botanical and natural commodities he and his crew (which included an apothecary) found to have the most potential.\(^{15}\) Hariot included a number of medicinal plants in *A Brief and True Report*, all of which were used to some extent by the local Croatoan Indians or were similar in property to plants found in England. As a scientist Hariot may have experimented with unknown plants to determine medical potential, as future physicians of Jamestown would, but if he did he neglected to report his findings in his pamphlet. In reprints of *A Brief Report* White’s detailed sketches accompanied Hariot’s writing, thus giving potential Virginia investors visuals to put with the text.\(^{16}\) *A Briefe Report* proved itself popular, and was published many times in multiple formats. It was also to


\(^{15}\) Ibid, 13.

become one of the “go-to” books on the potential drug trade in Virginia. A Briefe Report influenced the creation of the Jamestown colony by giving investors a guidebook as to what may be profitable.

Among the many readers of Hariot’s pamphlet were the founding members of the Virginia Company. They made it a point to be familiar with as much of the writing of the New World as was possible. Some of them, like Richard Hakluyt, had been on the Roanoke council and thus recognized the potential of the apothecary drugs Hariot described. These men were also cognizant of the success the Spanish had found in exporting a syphilis treatment called guaiacum. The Virginia Company was well aware of the medical world and its drugs, as the Company contained at least eleven physicians who had first hand experience with the profitability of foreign drugs.17 These physicians recognized that the initiators of Roanoke had made one right decision in sending Hariot to Virginia, and they hoped to replicate his scientific findings. The physicians’ influence in the Company can be seen in an addendum in the expanded charter of 1610, where they clearly state their interest in a market for apothecary drugs. "Small sassafras roots to be drawn in the winter and dried, and none to be muddled with in the summer; and its worth 50 pounds and better per ton."18 The colonists were subsequently ordered to take part in the apothecary trade, first with sassafras and later with tobacco.

17 Haile, Narratives, 34.
There are other primary documents available on the Jamestown and Roanoke colonies other than those published by the well-known explorers and scientists. A solid and thorough collection of first hand accounts written by colonists during the Jamestown colony’s first few years can be found in *Jamestown Narratives: Eyewitness Accounts of the Virginia Colony, The First Decade: 1607-1617* by Edward Wright Haile. This book is a compilation of all the writings of the colony during the first decade. It includes everything from brief letters from colonists to those back home in England, longer tomes written by Virginia’s more prolific writers, worried correspondences between the Spanish and their spies, as well as the company charters and official papers. The papers include many references to the pharmaceuticals used within Jamestown, as well as information on what plants were exported back to England.

There is a solid historiography behind the founding of the Roanoke colony, much of which mentions economic factors as the reason behind colonization. A few of these books argue that economic reasons lay behind the founding of this New World colony. *Set Fair for Roanoke: Voyages and Colonies, 1583-1606* by David Beers Quinn is one of these books. Quinn addresses the economic factors that helped convince the crown to fund an English New World settlement, though he neglects to look into the role drugs and botanicals may have played. Quinn looks at the Roanoke venture from the view of England, which regarded settlement in the New World as a way to become independent of the exports of other European nations, and examines the high prices the English
had to pay the Spanish, Italians and Dutch for importing items from foreign lands.¹⁹ Fellow Roanoke historian Karen Kupperman would agree with Quinn in his assessment that the Roanoke colony was created as an economic venture by England. In her short history of the colony, the appropriately titled Roanoke, she focuses on the expectation upon which the colony was founded. She emphasizes the inspiration the Spanish lay down for other European countries hoping to expand their coffers on New World commodities.²⁰ The Roanoke Colony also produced its own collection of first hand accounts, though the colony's short life and poor communication connection with England (unfortunately cut off by the war with Spain) meant that there are far fewer letters and personal accounts than one finds with the Jamestown colony.

Many Jamestown historians point toward economic reasons. In Love and Hate in Jamestown, author David A. Price portrays Jamestown as the great English adventure. Price mixes biography with historical narrative as he covers the history of the colony during the first tumultuous ten years. In his introduction Price touches upon the fact that the colony's beginning was influenced by the need to compete with Spain and Portugal on the international market.²¹ He chooses not to delve deeply into the reasons behind colonization, but rather focuses on the fact that colonization meant the meeting of two very different cultures, the Powhatan Indians and the English. The close proximity of these two

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cultures relates to the drug trade, with the free-exchange of ideas that occurs even between two warring groups. Price’s book may not look deeply into the reason behind colonization, but he does give a good narrative of what happened between the colonists and Powhatan Indians on a personal level.

Another overall history of the Jamestown colony, *A Land as God Made It* by James Horn, gives a clearer picture as to the motivating factors behind colonization than presented by Price. Horn begins his book by briefly looking into sixteenth century Spanish claims over Virginia. Horn argues that the English chose to settle along the Chesapeake Bay because the Spanish had already established the area’s economic viability. “Descriptions of fertility and natural abundance, first expressed by Spanish chroniclers and explorers in the early sixteenth century, would later become crucial to English propagandists in their efforts to justify the establishment of colonies populated by farmers and artisans as well as by traders and soldiers.”22 Even though he decides to focus on the Spanish influence, Horn does not argue that the English hoped to use Virginia as a set-off point for pirating Spanish ships. Rather, the English clearly wanted to join the maritime trade by farming (as they would later do with tobacco) and gather naturally growing commodities such as botanicals, which the English had long gathered in their own country.23

Jamestown historian William M. Kelso includes economic reasons behind the colony’s creation in his book, *Jamestown: The Buried Truth*. Kelso has a

different view than other writers of Jamestown histories because he includes archaeological evidence available due to the Association for the Preservation of Virginia Antiquities' digs of the original Jamestown fort, though the material culture he found points toward economic reasons for colonization. Kelso concentrates solely on the Jamestown colony from the moment of foundation through the first ten years. He covers neither the foundation of the Virginia Company nor the voyage from England to Virginia. The implications may be that regardless of what the intentions were for the colony, all that matters is what actually happened at ground level. This is a very archaeological viewpoint of history; however, it does have its benefits in terms of Kelso's look at the drug industry in the colony. Kelso is the only historian to touch deeply upon the drug trade within the Jamestown colony. He notes that the most common ceramic found during the APVA digs were Dutch drug jars. Kelso also implies that the astonishing number of these drug jars belies their nature as vessels to be filled and exported, rather than jars of medicine brought with the colonists from England.

The historiography of early-New World medicine is anemic and very nearly non-existent for the seventeenth century. This may be because historians assume Virginian history would be parallel with that of England, which if true is a pity. So many aspects of life in Jamestown were different than that of England, especially as far as day-to-day activities are concerned. Everyday life in Virginia

25 Ibid, 55.
was endemic to the colony; the medical world was as well. Apothecaries and other medical men were significant members of the colony. Those who were searching for new drugs to ship to England had the ability to change the economic landscape of their home country. The cultivation in Virginia of a new drug, tobacco, did end up changing consumer habits in Europe. Yet despite the important role medical persons played in the colony, the earliest available history of American medicine is Wyndam Blanton's *Medicine in Virginia in the Eighteenth Century*. Blanton looks at the development of the medical practice in Virginia from Jamestown through the Revolution, with particular emphasis on the last few decades of the eighteenth century. Blanton does look briefly at some drugs that were used by Virginia apothecaries, though he does not go into depth about the apothecary practice itself. He may have assumed that medicine did not make huge leaps from the fifteenth through the eighteenth centuries, and thus Virginia did not honor its own definition of apothecary. Blanton does make mention a few indigenous Virginia cures still in use in the eighteenth century, proving that the settlers did utilize the plants surrounding themselves. Still, despite the value found in Blanton's book, the truth remains that it is the only history of the subject, and a sorely outdated one at that. One of the few articles that concentrates on the botanicals is "A Cabinet of Curiosities" by Karen Ordahl Kupperman, published in *Common-Place*, a history periodical. Kupperman looks at how

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27 Blanton makes reference to Sassafras as still being used in Williamsburg apothecary shops as a cleanser. Blanton, 45.
sixteenth century botanical reports on the Virginia colony struck a chord with Europeans, who held high hopes for the potential of New World plants. She illustrates the amazement Europeans felt towards the newly discovered flora, and states "Samuel Purchas, who succeeded Richard Hakluyt as the great compiler of travel accounts, wrote that cartographer Gerard Mercator actually believed America had escaped Noah's flood because the species were so different in the New World." Kupperman also points out the modern idea that plants would be able to grow at the same latitude all over the world. Thus, the English would have believed that Virginia would be able to grow Mediterranean plants, being at the same latitude as Italy and Spain.

To the sixteenth and seventeenth century mind, tobacco was a drug of medicinal value, recommended by physicians to cure a myriad of diseases and maladies. To those who would argue that tobacco is not a drug, in the seventeenth century tobacco was still sold in London apothecary shops. The apothecary practice in sixteenth century London has not inspired a large collection of books. Most histories of English medicine only contain brief passages on the foreign drug trade, possibly due to the quick deterioration of the trade's flora remedies. Fortunately for the study of this facet of medicine, one book, Andrew Wear's Knowledge and Practice in Early Modern Medicine 1550-1688 broke form this mold and provided strong evidence and references to the

29 Ibid.
30 Wear, Medicine, 34.
apothecary trade. Wear's book covers the entire medical hierarchy from physicians to apothecaries, English witch doctors to patients. He addresses details about the apothecary trade, including professional training, how the shops were run, who bought apothecary drugs, and the source of the drugs. Wear also touches upon the economic stimulation a well-selling drug could bring to England in the seventeenth century.

Information about Virginia medical botanicals is available in *American Indian Medicine* by Virgil Vogel. Vogel's book provided evidence of the indigenous drugs used by the American Indians, cures that would later be adopted by the Roanoke and Jamestown settlers. Though the settlers did not set out to study and use the same plants as the Indians, they ended up doing so by proximity and convenience. Of particular use to the English were the Indian cures for diseases that were picked up by Europeans in the New World, such as syphilis. Vogel's book does not make any allusions to Indian history post-contact, but rather finds value in listing long lost uses for North American botanicals.

It is undeniable that the Spanish played an imperative, if unintentional, role in the creation of English colonies. The Spanish were the first to create a model of new World exploration and exploitation, one that would later be adapted by the English. The Spanish also caused inspiration through their large gain in gold and other commodities. The English had spent much of the sixteenth century pirating Spanish ships, and thus were aware of all the commodities that could potentially

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31 Ibid, 56.
32 Ibid, 106.
be found in the New World. This pirating also led to the fraudulent idea that
Jamestown was created as a jumping off point for pirating Spanish ships.\textsuperscript{34} This
myth is so ingrained that modern historians will still reference pirating as a
reason behind the founding of Jamestown. Unfortunately for this argument, the
settlers left no evidence that their colony was meant as a pirate colony. In
addition to the lack of written evidence towards the pirate theory, the settlers only
had control of one small ship, the Discovery. This was hardly a vessel worthy of
pirating the large Spanish galleons. Also, Jamestown was located a few miles up
the James, and a few hundred miles from the famous Spanish Main.\textsuperscript{35}

There is a strong historiography on the Spanish, which will not be looked
at in depth here. A number of Spanish history books touch upon Spain's
discovery and use of drugs, two good examples of which are both collections of
essays, \textit{Searching for the Secrets of Nature}, edited by Simon Varey, Rafael
Chabran and Dora B. Weiner, and \textit{The Royal Protomedicato}, edited by John
Tate Lanning. These collections, which will both be looked at more in depth in
another chapter, contain references to drugs exported by the Spanish that were
later adopted by the English. Both books establish the fact that there was a drug
industry in Europe in the sixteenth century, and that the English did import drugs
from the Spanish.\textsuperscript{36} They also discuss how the Spanish hoped to find new

\textsuperscript{34} Price, \textit{Love and Hate}, 10-11.
\textsuperscript{35} Price, \textit{Love and Hate}, 20-23.
\textsuperscript{36} J. Worth Estes, Simon Varey, Rafael Chabran, and Dora B. Weiner, “The Reception of American Drugs
in Europe, 1500-1650” \textit{Searching for the Secrets of Nature: The Life and Works of Dr. Francisco
Hernandez}. (Stanford, California: Stanford University Press), 110.
botanicals to bring into this industry through exploration and research by Spanish physicians and apothecaries.\textsuperscript{37}

When the English decided the time was right to explore the medicinal flora of the New World, they benefited from watching a successful model. For this they had to look no further for a fine example of drug exportation than that craftily devised by their old maritime enemies, the Spanish. Spain was the first nation in the modern period to fund a seafaring exploration that sailed from the East to the West, and subsequently was the first to take advantage of the commodities that were available in the Americas.\textsuperscript{38} The discovery of the American continents by Christopher Columbus was a happy mistake, for the Europeans at least. The Spanish backed sailors had set out to find a new, more efficient route to Asian trade goods and instead found strings of islands (and later continents) rich with economic potential. Any disappointment the Spanish monarchs felt when word traveled back to them that their Genovesian explorer had not found a quick route to Asian spices was quickly quelled by dreams of importing New World commodities, which, as they were unknown to Europe, would be even more exotic and profitable than those from Asia.

The time period immediately after the discovery of the New World was a glorious one for speculators. People now knew there was a land mass of unknown proportions lying between themselves and Asia, and speculation

\textsuperscript{37} Ibid, 111.
\textsuperscript{38} There is evidence that the Spanish were not the first group of people of Eurasia to lay foot and eye on American continent. First came the Asian nomads, and second, the Norsemen who explored the coasts of what is now Newfoundlan.
abounded as to what commodities would be found. As far as the Spanish knew, they could now be the possessors of spices and apothecary drugs more valuable than those pricy items from Asia, including mountains of gold, forests of trees for ship masts, wild and exotic animals and other things too expensive for their modern minds to comprehend. The first people Spain funded to explore the continent were assigned to look for new sources of wealth, whether obvious like gold or more elusive such as plants that could be exported as apothecary drugs.39

The Spanish, like all modern people, were well aware of how much money was in the drug trade. Everyone used drugs in some form at least a few times during their lives, so the market was ready-made and would remain consistent.40 To exploit this market, when Spanish sojourns to the Americas were organized, doctors and apothecaries were included in the lists of attendants. The Spanish physicians and apothecaries were trained in similar methods as the English; the apothecaries were apprentice trained and physicians abroad took on apothecary work. Each individual sent overseas was no doubt chosen for their abilities in medicinal discoveries. It is unfortunate that most of the accounts of their explorations and discoveries have been lost to the ages.41 The most optimistic of these men must have expected to find miracle cures for European diseases and ailments, the least optimistic would have expected to at least find marketable

39 Varey, Protomedicato, 32.
40 Wear, Medicine, 83.
41 There are many references to the search for commodities, including pharmaceuticals, in books such as that seen below, but time has left few first hand accounts.
treatments for common diseases. Considering recent history, they probably hoped to find a drug that would cure epidemic disease like the black plague, or a drug that would cure colds, which were all too common in the damp climate of the northern European countries.

The Spanish would make their medicinal discoveries in a way that would later be imitated by the English. The Spanish took the quick route to success by observing the plants that were used by the local Indians. This saved vast amounts of time and effort that would have been spent testing each and every plant found in the copious resources of the rain forests. One of the first records of the Spanish being interested in Indian medicine comes from infamous explorer Hernando Cortes. During Cortes' fateful 1519 "diplomatic" visit through the Aztec capital of Tenochtitlan the explorer made note of how the Indians lay out their town and commerce. As far as the drug trade is concerned, he seemed impressed with the number of herbalists at work. "There are shops like apothecaries, where they sell ready-made medicines as well as liquid ointments and plasters." In addition to these vendors, Cortes and his men noticed that people grew herbs in their backyard gardens, as Europeans did. From these vague observations one can assume three things. First, the Indians had a booming drug trade of their own. Second, they found home remedies effective enough to grow them in their own gardens, and, third, and most consequential, Cortes found the Indian drug trade of enough economic importance to report back to Spain.

42 Estes, Hernandez, 111.
The credit for the formal introduction of most New World botanicals to the European lexicon lies in the hands of the acclaimed Spanish physician Nicolas Monardes. Monardes was the first person to write extensively about the monetary potential of New World botanicals in the European market. He was also the first person to formally test and record the effects of these drugs on various diseases. Monardes’ book on Medicine (which included references to the New World) was published in 1569 and retained popularity for nearly a century, becoming required reading for all those interested in the New World botanical trade. In 1577 the book was translated into English by English scientist and physician John Frampton. The newly christened Joyfull Newes Out of the Newe Founde Worlde was so popular and well read that it would have been very surprising if someone who was interested in the New World had not read it. Due in no small part to Frampton’s translation and Monardes detailed accounts Joyfull Newes proved itself instrumental in inspiring the foundation of the English colonies, particularly in regard to the drug trade. The work was reprinted many times over in abridged form in herbals and other medicinal books owned by a wide variety of people, from university trained physicians to commoners looking for home remedies.
THE ENGLISH MEDICAL WORLD AND THE DISSEMINATION OF KNOWLEDGE

The medical community in England underwent various developments prior to English settlement in the New World, changes that would be beneficial towards the foreign pharmaceutical trade. Medicine went from being a speculative, tradition-ridden, magic dependent subject to being more scientific and experimental. The pharmaceutical trade out of the English colonies was thus affected by the changing structures and rules within the medical community. Because the medical practice in Jamestown was changing fundamentally from that of England, there was the potential for the apothecary to act as a mediator between medicinal and economic knowledge in the New World. The apothecary held the power to discover the next great New World drug to export to the English market.

People who specialized in drugs had been present in England for countless years. Ingesting herbal and natural remedies as a curative was something people had been doing since the Neolithic period.43 The modern sixteenth century apothecary was descended from a very long line of men and woman who had dedicated their lives to the study and administration of medicine. Their closest professional relative was a local medicine person, a man or woman who was a town’s expert on herbal drugs. These self-proclaimed professionals rarely had formal training beyond apprenticeship, and were often took the guise

43 Wear, 100.
of the town midwife or physician. The regulation of the medical community after
the Renaissance meant that medical persons were pushed out of their jobs by
university trained professional physicians. Even midwifery, a vocation long held
by women, became increasingly male dominated over the seventeenth century.
For the drug practice, university training meant the town expert went from being a
local medicine man or woman to a more formally trained apothecary who owned
a regulated shop. This was good news for the foreign drug trade. Stronger, more
professional ties between apothecaries meant they were more likely to pass
information about new foreign drugs to one another and their own customers.
University trained apothecaries were also literate, which meant information could
be passed along through the written word. The interest in apothecary drugs
relied on the strong apothecary practice that was established in England. It was
the apothecaries who disseminated New World drug information throughout
England, and created a market for the drugs with their patient base.

The fluctuating medical world centered around the university prototype of
trained professionals, rather than the old tradition of career hobbyists. At the top
of the hierarchy were physicians who were trained in medicine at universities.
Physicians were called in to diagnose and treat illnesses, though if surgery was
required they called in the surgeons. Physicians were present in both Roanoke
and Jamestown, and at least one contributed to the search for marketable

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apothecary drugs. Surgeons, with their saws and knives, were considered tradesmen in the manner of human butchers. They did not go to university, but rather learned their trade through the apprentice system. Apothecaries were considered below both physicians and surgeons. Apothecaries learned their profession through lengthy apprenticeships. Technically the apothecary's place in the hierarchy was as the drug dispenser for the physicians, but people often used the apothecary as a cheaper way to get medical advice than the more costly physician.

The London apothecaries were no doubt excited by the idea of being able to sell drugs from their own New World colonies. Much of their medical knowledge had been passed down for generations, and centered around a relatively small number of botanicals. The apothecaries gained their knowledge through intensive study of the potential of each plant. Apothecary work relied on the passage of knowledge from the older apothecary to the younger through books, herbals and personal experience. A young apprentice apothecary spent his day observing the master diagnosing walk-in patients, deciding upon treatments and creating the medicine from the jars surrounding the walls. The young apprentice was expected to understand the industry from inside his shop, but he also had to go out into the field and collect his own remedies. Toward the end of their apprenticeships the future apothecaries were expected to have compiled an herbal of their findings. Self-composed books of herbs and their

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46 Haile, Narratives, 330.
47 Wear, Medicine, 88-89.
uses, "herbals" were the physical manifestation of the apothecary's knowledge. Herbals were household medical books that explained and expounded upon the use of medicinal herbs, herbals often included excerpts from Monardes and Hariot, thus introducing foreign drugs to people who may not have been aware of them otherwise. Fieldwork in their native England was vital to apothecaries who would later travel to America to test the potential of new drugs.\textsuperscript{48} This also explains why so many drugs tested in the New World were chosen because of their resemblance to those in England. Apothecaries knew that a familiar looking drug would sell well in the English market.

Because of the small scale of the Roanoke and Jamestown ventures, the traditional English medical hierarchy folded in on itself. With so few people in both colonies, physicians, apothecaries and surgeons often did the work of one another. Thomas Hariot was trained as an astronomer, but he worked with apothecaries in Roanoke to create his list of merchantable pharmaceuticals. That is not to say that apothecaries did not do their job or were not present in the colony; rather, their job in the colonies was so important that other men partook in it as well. This is something that generally would not have happened in England, where the hierarchy was well established. In London most physicians would not bother themselves with apothecary work, yet in the New World it was necessary due to their isolation.

Hariot made passing reference in A\textit{Briefe Report} to the work of apothecaries in Roanoke, so it is clear they were assisting him on the island. The

\textsuperscript{48} Blanton, \textit{Virginia}, 31-34.
only clues we have to one of them is a name, John Tuyt. The Jamestown records indicate at least two apothecaries were sent with the second fleet in 1608. The apothecaries were clearly sent with the sole purpose of finding new drugs to be shipped back to England; the Jamestown Colony was never larger than around 150 people at this time, and didn’t have the market for two apothecaries. Though these two men were a generation younger than Roanoke’s John Tuyt, they would have had the same apprenticeship/herbal concentration training. Also, these two men, Thomas Field and John Harford, joined the colony when there was already a physician present, which meant that they may have supplemented his knowledge but were not expected to act as doctors themselves. This ideal representation of the medical hierarchy back in London only lasted a few short months, as the colony began to fall into disarray in 1609. One can only speculate as to what happened to them, but it is likely they died during the infamous “starving winter.”

The duty of the apothecary was soon filled by physician Lawrence Bohun. Bohun’s career as both physician and apothecary in Jamestown reflected the out-post status of the colony. It was rare in London to find physician/apothecaries, but at the time it was still possible to find them in small towns around England.⁴⁹ Bohun was well known for his scientific curiosity. The doctor did not write a journal of his findings, but his friend and the secretary of the colony William Strachey was impressed with him and recorded some of Bohun’s experiments and successes in his book The History of Travel. According

⁴⁹ Wear, Medicine, 112.
to Strachey, Bohun spent much of his time researching the medical potential of Virginian plants. Though he may have done this purely for his own interest, it is more likely he did this for the good of the colony. The ships that stocked Jamestown only came a few times a year, and with so many people living in a relatively small space there would be a need for a doctor to add to his meager medical rations. Bohun began to utilize local Virginian plants as both a way to satisfy intellectual curiosity and to supplement his dwindling supply of English medicines. Jamestown colonist and writer William Strachey observed the Doctor experimenting with Virginian plants. "Mechoacan, of which Doctor Bohun made trial in cold and moist bodies for the purging of phlegm and superfluous matter."  

Bohun reportedly created experiments with known remedy plants such as sassafras in order to find new ways to utilize the abundant flora, experiments that were no doubt inspired by the use of certain plants by the local Powhatan Indians. Two of the Indian remedies commonly used by Bohun were Terra Alba Virginensis and the gum tree.

Bohun stands as a solid model of an English doctor taking and passing on the medical traditions of the local Indians, a model the English took from the Spanish before them.

Archaeological work provides material evidence of the medical men present in the Jamestown colony. The physicians, apothecaries and surgeons who came to Jamestown in order to treat patients and find new drugs brought

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50 William Strachey, “The History of Travel, 1612” *Jamestown Narratives*, ed. Edward Wright Haile., 600. I am not sure what the modern equivalent of Mechoacan is, though I will continue to search for it through Indian Medicine books such as the Jesuit Relations.

with them tried and true treatments from England. They brought these items over in physicians’ chests. As is the unfortunate case with organic material, these chests and their remedies disappeared long ago. Within these chests were packed a variety of apothecary drugs suitable for a military encampment. Any fears in London of the colony running out of medicines, say, in a time of epidemic may have been quelled by the enthusiasm for native drugs expressed by Monardes and Hariot in their writings. Evidence of the non-native treatments employed at Jamestown can be found in the findings of the Jamestown Rediscover archaeological team. A chunk of sulfur and a piece of coral were among the items found within the boundaries of the original 1607 fort. The sulfur was brought with the settlers from England, where it probably originated. Sulfur was used to treat skin disorders. The coral specimen hails from the Caribbean, where the settlers may have picked it up on their route to Jamestown. The doctors would have had ample time to collect coral while the ships took the common southerly route through the Caribbean isles.\(^5\)\(^2\)

Any drugs found by the English in Virginia would have to be shipped back to England and siphoned into the market. The English followed some simple common sense rules of foreign drug exportation. For one thing, a plant was less likely to be exported to England if it was similar to a local English one already available. This would explain why the Indian root wisacan was never exported; it had properties similar to liverwort, which grew in England. In general people were

\(^5\)\(^2\) The coral and sulfur found by the Rediscovery is on display at the Jamestown Island Archaeology Museum.
more likely to buy a trusted and familiar (and cheap) English drug than an unfamiliar and expensive Virginian one. The drugs that were imported into England filled an empty niche, or were more effective treatments than those already present. Clay and sassafras were exported with some success, because the properties they possessed were unique to themselves.\textsuperscript{53} In the first few years of colonization at Jamestown, sassafras was the most commonly exported of the apothecary drugs.\textsuperscript{54} The plant was packed in casks and shipped to England, where it was distributed by the Virginia Company to apothecaries in England. The apothecary shops in turn sold the plant to the consumer, either mixed as a remedy or as a raw product they could make into a remedy themselves.

There is also evidence that drugs were sent directly to the consumer by family or friends in Virginia. Francis Perkins sent sassafras to his wife back in England, as evidenced by a letter he sent back to England.

I am sending to my Lady Catherine and to my lady your wife, to each of them, six pounds of sassafras to use in medicines or between linens. It used to be worth forty reales the pound not long ago, and it is no less efficacious now that then. I shall not fail to send my Lady Catherine, you, and Sir William Cornwallis some trees, fruit, herbs, flowers, and other new things produced by this land, begging you in the meantime to receive what I can now send in the spirit in which I offer it.\textsuperscript{55}

This brief passage shows that the use of sassafras had quickly been disseminated from apothecary shops to the average person. Perkins is making

\textsuperscript{54} Smith, 242.
the assumption that his wife will be familiar with how to use sassafras. Ladies were trained at manufacturing household remedies; learning to make remedies was an important component of a young woman’s education. A common Englishwoman would have learned how to make basic remedies from her mother or a remedy book such as Timothie Bright’s *Treatise*, a collection of English remedies available to the lay-person. As a gentry woman, Lady Perkins was likely literate and owned a remedy book. Regardless of how she learned the medical practice, sassafras would have been one of the more exotic remedies in her possession. It likely was the only New World plant in her collection; most of the remedies would have been grown in her own gardens, or more familiar foreign imports from Asia or Italy. The Jamestown colony had shipped to England a drug that had managed to become well-known to the populace.

The sale of New World drugs in Europe depended on successful advertising on the part of the apothecaries and physicians back in England. The rising popularity of printed material helped spread the news and knowledge of the newly found botanicals. Herbals were central in spreading the popularity of drugs, especially in the case of tobacco. Apothecaries read about tobacco’s healthful benefits in herbals that included passages from Monardes and Hariot’s writings. Repeatedly reprinting the same translations was a common practice, especially in the case of foreign drugs, where there were not a lot of people traveling abroad to study the plants in their natural habitat. One thing that is

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56 Wear, 88. Items from the New World would have been considered more exotic than those from other locations, since anything from the New World was new and unfamiliar to the English.
significant about this is that readers of Monardes and Hariot’s passages associated tobacco with its use by the Indians. It is doubtful that the apothecaries and their customers in Europe would have known how to use tobacco if there was no record of how the Indians used it. These herbals were the instruction manual on how to use imported drugs, and thus played their own part in the cycle of New World drug imports.  

The most effective method of drug dissemination was through the written word. By the seventeenth century apothecaries were university trained, and thus picked up much of their information from books and journals. By the mid-seventeenth-century herbals contained information on Virginia pharmaceuticals. The most famous of which was Nicolas Culpeper’s “The English Physician: An Astrology-Physical Discourse of the Vulgar Herbs of this Nation”. Culpeper makes mention of many Virginian plants; most significantly, sassafras and tobacco, both of which were buried within lists of indigenous English plants. This could mean that they were already deeply enough in the medical lexicon that they did not warrant their own “foreign” section.

Despite the shipment of drugs to England, the medicinal potential of Virginia was largely untapped by the colonists. This may have been a disappointment to the investors when one considers that the Jamestown Colony was founded with the partial intention of finding new medical treatments in the form of plants and herbs. Most drugs were not sent back to England in mass

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57 Wear, Medicine, 54.
quantities. Sassafras was the most successful plant export, but even this versatile plant lost its popularity as a remedy for syphilis by 1620.\textsuperscript{59} Tobacco was to become the colony's golden ticket, and though it was thought by some to be medically beneficial, it became successful as a drug in the addictive sense rather than as a remedy. Most Virginia remedies were collected and used in Jamestown.

\textsuperscript{59} Ibid, 100.
TOBACCO, OTHER DRUGS AND SASSAFRAS

The English spent many over seven years actively searching for a drug that would prove popular in England. The most successful drug exported to England was tobacco. If the English had any inkling that their most successful pharmaceutical export would be the smoking weed of the Indians, they did not make any allusions to it in the Roanoke and Jamestown company charters. Its absence from both Hariot's book and the Virginia Company charters indicates that the investors probably did not plan on exporting tobacco to European markets. This is significant because the drug was well known in England at the time of settlement. Tobacco had been brought to Europe following a similar model to sassafras. It was first used by the Indians, then adopted and exported by the Spanish, sold to English apothecaries, and later exported by the English themselves. Tobacco became the most successful drug that was cultivated and exported by the English, though it was by no means the only one exported from Jamestown.

A drug that was the most successful drug exported from the New World before tobacco was sassafras, a tree whose claim to fame lay at its ability to treat syphilis. Sassafras filled a niche created by a similar plant exported to Europe by the Spanish. This plant was known as guaiacum to the Indians, who were the first to use it as a treatment for syphilis. Guaiacum was a tropical tree that was used by the Indians to treat a number of different ailments, among them syphilis.
The Spanish, who themselves caught syphilis soon after arriving, adopted the use of the Indian treatment. Both the disease and its endemic treatment were exported back to Spain and Portugal, from where they both spread separately throughout the European continent.\textsuperscript{60} Syphilis, a contagious disease, naturally traveled faster than its treatment, guaiacum. Once the disease established itself firmly in the population, people began clamoring for an effective treatment. The sailors who had brought back the disease also brought with them guaiacum, which had found itself a ready-made market. Sassafras also had advantage on the market because of a sixteenth century belief that God put a cure for every disease he created in the same place the disease originated, and that cure would be the most effective treatment of the disease.\textsuperscript{61} From this stemmed the belief that the New World disease syphilis must have a cure somewhere in New World, thus the adoption and marketing of the Indian cure for the ailment, guaiacum.

Guaiacum soon became the best seller of Spanish New World drugs, thanks in no small part to the explorer Francisco Hernandez. Hernandez, like Cortes, observed that the Indians used herbs medicinally, but he went one step further than the conquistador by actually studying how these drugs were used in context by the Indians. These observations were far from ethnographical, as exploration and discovery took precedence over preservation of foreign cultures. Yet even though the records are often biased and leave out cultural details, they remain valuable as a record of what and how plants were used by the Indians. In

\textsuperscript{60} There is various scholarly debate on the origin of Syphilis. Some argue that Leprosy of the Middle Ages was a form of Syphilis, as it could be cured by mercury. Modern leprosy is not affected by mercury.

\textsuperscript{61} Ibid, 50.
some cases records like those of Hernandez and Cortes are the only evidence historians have of Indian medical practices. These writings were also valuable as a model for Indian observation that would later be used by the English in their own search for merchantable commodities.

Though the use of guaiacum was popularized by Monardes, Francisco Hernandez was the first person to both observe and write about its use by the Indians as a "cure [for] the French malady (syphilis) and chronic diseases." By 1517 guaiacum was being harvested and exported back to Spain, where it was sold throughout Europe. According to Spanish Colonial historian Simon Varey, the plant soon became "the most valuable of all the drugs introduced from the Americas." By 1540 it was already popular enough in the German states to inspire German physician Ulrich von Hutten to write an entire tome commending the drug. Within a year the translated book had become a bestseller in England. Von Hutten's book greatly increased the popularity of guaiacum by bringing awareness to the masses, who were increasingly ailing with syphilis. The price of the drug began to rise exponentially because the rights of importation and distribution were owned by Charles V of Ausburg, who maintained a stiff monopoly on them for as long as it was profitable. The drug brought wealth to those who dealt in it. "At the height of its popularity, guaiacum, sold there for three gold florins a pound. Moreover whenever its price rose, the wonder drug

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62 Varey, 33.
63 Ibid, 114.
was counterfeited. Guaiacum proved itself to be something of a green gold mine, and as long as people contracted syphilis and stayed alive long enough for the disease to require treatment, it would remain in vogue, or so apothecaries believed. Unfortunately for those who relied on the drug’s profitability, its popularity declined as people began to doubt its effectiveness. In actuality, guaiacum did little to aid syphilis sufferers. Guaiacum’s lasting legacy, rather than curing people of a painful sexually transmitted disease, was to make them more receptive to the idea of buying foreign New World drugs.

The English were well aware of guaiacum from books and personal use. The drug was available in English apothecary shops, both as a legal import and from encountering casks of the drug while pirating Spanish ships. When guaiacum was beginning to be out of vogue, due to the fact that it never really was a particularly effective treatment, there was room for another drug to take its place as a treatment for syphilis. The medical world and investors both knew that the most effective drug would be one from the New World; people with syphilis would prefer to buy a treatment that came from the same place as their terrible affliction. When Thomas Hariot searched for profitable drugs around the Roanoke colony he was interested to find that one seemed similar to guaiacum, and had been imported in small amounts to Europe for a few decades. This medicinal plant, sassafras, would fill the shoes of guaiacum as the most popular

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64 Ibid.
65 Ibid, 117.
syphilis treatment. Hariot was optimistic about the plant, as he included sassafras in his chapter on merchantable commodities. About the plant he wrote:

Sassafras is called by the inhabitants Winauk, a kinde of wood of most plesant and sweete smell; and of most rare virtues in physick for the cure of many diseases. It is found by experience to bee far better and of more use than the wood which is called Guaiacum, or Lignum vita. For the description, the manner of using and the manifolde virtues thereof, I referre you to the book of Monardes, translated and entitled in English, The Joyfull newes from the West Indies.66

The Roanoke colony never exported sassafras back to England, as the colony never had a chance to export much of anything. Hariot’s observations on the plant surely inspired the Virginia Company investors to encourage their colonists to send back the plant.

The Virginia Company read all the popular books on the New World, as would any smart investors in their position. The colonists themselves were well aware of what commodities they might find in the New World, and took note of any previously mentioned commodities that they found. Sassafras followed this model. In 1607, the first year of settlement, settler Gabriel Archer mentioned the drug in his optimistic observations on the pharmaceutical trade in Virginia.

We can send (if we be friends with the savages or be able to force them) 2, 3, 4, or 5000li a year of the earth called terra sigillata; Sassafras, and what store we please . . . there is a gum which bleedeth from a kind of maple (the bark being cut) not much unlike a balsam both in scent and virtue; apothecary drugs of divers sorts, some known to be of good estimation, some strange, of whose virtue the savages report wonders.67

66 Hariot, Narrative, 15.
Archer felt no need to define sassafras as he did the other drugs he mentioned, which implies it was already recognized in England, most likely due to the popularity of Hariot's manuscript. Predictions about sassafras's marketability would soon prove true. Almost immediately after the Jamestown colony was founded sassafras became one of its biggest exports.68

This plant that excited so many people was to the casual observer a flowering tree of medium stature. Perhaps the only remarkable thing about sassafras was the sheer amount found on the Eastern coast of North America.

Luckily, this abundant tree was also useful medically for the Indians, who used it as a remedy to treat a wide variety of ailments. In his ethnographical book American Indian Medicine, author Virgil Vogel notes that virtually all the Indian tribes who lived within the sassafras tree’s range used the plant to some extent. When one considers how well Indian tribes across the country were connected to one another, it is not far fetched to assume that sassafras enjoyed employment far behind the eastern woodlands. The Croatoan Indians of the Roanoke region and the Powhatans of the Chesapeake lived within the tree’s habitat, and were thus very familiar with its uses. The entire sassafras tree provided some medical purpose. The flowers and berries were boiled into teas, which were drunk to cure internal ailments. The leaves were pounded into poultices to place on wounds and bone breaks. The young sprouts were steeped for an eye-wash. When boiled the roots became a useful diuretic, which was used to clean the system.

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68 Haile, Narratives, 25, 96, 121.
Diuretics were particularly popular with both the Indians and Europeans, of whom both believed that the body needed to be purged of an illness.

The most common use of sassafras was as a treatment for venereal disease.\(^6^9\) Virgil noted the Indians as far north as Iroquois country treated syphilis with sassafras. The Algonquin Indians as far south as the outer banks of North Carolina employed sassafras for the same use. Colonist and writer William Strachey was the first person in Jamestown to record the use of sassafras as a cure for syphilis, though he was doubtless aware of Thomas Hariot’s chapter on the drug from twenty years earlier. Regarding the plant Hariot wrote:

> For cure of which yet they have both means of their own and sufficient skill, applying certain herbs and bruised roots which do presently ease and in time cure, and which kind of medicines - calleth - medicamenta, having beside the saxafras, one herb, as it is supposed, which in short time quencheth and mortifieth the malignant poison of that disease.\(^7^0\)

Whether or not Strachey recognized sassafras as having similar properties and uses to guaiacum, he neglects to note. Regardless of whether or not this connection was made by Strachey, those in the medical field who read the manuscript no doubt made the curative connection between the two botanicals.\(^7^1\) If sassafras could take over from guaiacum as the advocated treatment for syphilis, the Virginia Company would reap the profits.

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\(^7^1\) Ibid, 668.
By the time of the Roanoke and Jamestown colonies, syphilis had been infecting Europeans for over a century. This was long enough for the disease to earn the common nickname “pox,” after which the scarring suffers were left. Sassafras was not discovered by the English though it was popularized by their exportation of the plant. Sassafras had been introduced to the European market nearly a century before English settlement, though it was imported in such small portions as to be inconsequential in comparison to the popularity of guaiacum. The French were the first to discover its medicinal virtues during their sojourns into Canada. They were no doubt familiar with both syphilis and the sassafras treatment, considering the Italians call syphilis, “The French Pox”. The Spanish adopted the use of sassafras a few years after the French, though it is unknown whether they discovered it during their own explorations into the eastern seaboard of North America, or if they used it with direction from the French. Regardless of how they came to be aware of it, the Spanish were the first to ship and distribute the plant to European apothecaries, in small quantities. Sassafras also enjoyed mention in Nicholas Monardes’ Joyfull Newes.

Sassafras would prove profitable for the Jamestown settlers though, as stated previously, it would never reach the popularity that tobacco would enjoy in later years. The economic value of sassafras was noted by John Smith in his famous narrative, The General History. Smith complained that the bored sailors of the re-supply ships would thieve from the colonist’s food supplies “to sell, give,

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72 Wear, Medicine, 103.
73 Quinn, Roanoke, 175
or exchange with us for money, saxefras, furs or love."\(^{74}\) Bad behavior aside, this passage implies that sassafras was worth enough back home in London to encourage the sailors to burglarize the colony's meager food supply. Consequentially, this implies that syphilis had reached a wide enough set of victims to create high market demand. This also means that the English were willingly using sassafras as a treatment. This market (legitimate and otherwise) meant that ships returning to England often carried the plant in their bowels. "On the return voyage they go back laden with wood for hogsheads and for ships, and sassafras wood."\(^{75}\) William Strachey, another colonist, noted the harvest and selling of sassafras in 1612, five years after Smith. "Of saxafras there is plenty enough, the roots whereof not many years since were sold for 20s a lb. and better."\(^{76}\) Like tobacco would do in later years, sassafras harvesting kept the men from doing more useful tasks, such as farm work and building shelters. Smith noted, "Our easiest and richest commodity being sasafrax, roots were gathered up by the sailors with loss of spoil of many of our tolls, and with drawing of our men from our labor to their uses against our knowledge and prejudice."\(^{77}\) A Spanish spy, John Clark, also found the amount of sassafras being shipped back to England alarming enough to report. "[I] found there a ship of 150 tons about to

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\(^{76}\) Strachey, Plantation, 686.
sail for England with timber and sassafras." By 1621 the sassafras that was shipped to England was bought for five to ten shillings a hundred, depending on whether it was wild or domestic.79

There is evidence that the English, like the Indians before them, used sassafras as a treatment for more than just syphilis. Careful observers of Indian medicine like Dr. Bohun watched the Natives use the plant for infirmities like eye disorders. The English created their own eye treatments by mixing sassafras pith with water. The pith was the watery remains of pounded leaves and bark. The bark was also used as a purgative, a very popular remedy for a multitude of ailments and as an astringent. Sassafras oil was also extracted by boiling the berries of the tree.80 The oil was used on bodily aches such as rheumatism, gout and arthritis.

When the English settled in North Carolina and Virginia, they not only hoped to get their own toehold on popular remedies exported by the Spanish, they had a desire to find new wonder drugs unknown yet to Europeans. Sassafras and tobacco were already known and used by the English before Roanoke. The colonists did begin to use a variety of American drugs, all of which were introduced to them by the Indians, and few of which were exported back to England.

79 Blanton, Virginia, 104.
As previously noted, while White drew scenes of Virginia Indians and sketched plants and animals around Roanoke Island, Hariot studied the Indians’ use of various local items, and published his 1588 booklet titled *A Brief and True Report of the New Found Land of Virginia*, with commodities being the first chapter of three. This book was later to prove as influential to the Jamestown project as Nicholas Monardes *Joyfull Newes* had been for Hariot. Hariot included a number of medicinal plants in *A Brief and True Report*. All were used to some extent by the local Croatoan Indians or were similar in property to plants found in England. As a scientist Hariot may have experimented with unknown plants to determine medical potential, as future physicians of Jamestown would, but if he did he neglected to report his findings in his pamphlet.

Hariot also looked for substitutions for plants imported by the Spanish. One he found would prove to be profitable in the Jamestown colony, the sassafras tree. Hariot noted that sassafras was of similar property to guaiacum, the subtropical plant imported (and brought in stolen casks) to England by the Spanish as a treatment for syphilis. Hariot extolled the use of sassafras;

> Sassafras, called by the inhabitants Winauk, a kinde of wood of most plesant and sweete smel; and of most rare virtues in physick for the cure of many diseases. It is found by experience to bee far better and of more use than the wood which is calle Guaiacu,. Or Lignum, vita. For the description, the manner of using and the manifolde virtues thereof, I referre you to the book of MONARDUS, translated and entituled in English, The Joyfull newes from the West Indies.\(^1\)

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\(^1\) Hariot, *Narrative*, 15.
Another plant recorded by Hariot that would later prove useful to the Jamestown colonists was the sweet gum tree found on the Eastern shore. Hariot's description of the sweet gum not only notes the tree’s medicinal uses, but also captures Hariot’s optimism in New World remedies. "Sweete Gummes of diuers kindes and many other Apothecary drugges of which wee will make speciall mention, when wee shall receiue it from such men of skill in that kind, that in takeing reasonable paines shall discouer them more particularly then wee haue done." Sweet gums had been in the English apothecary market since the Spanish had adopted their use from the Aztec’s in the sixteenth century. Hariot would have been well aware of their use back in England as a balsam for skin ailments.

Of all the remedies mentioned by Hariot there was only one that was not a plant. Clay was used both by Europeans and Indians as a treatment for skin conditions and wounds. Hariot wrote:

Wapeih, a kinde of earth so called by the naturall inhabitants; very like to terra sigillata: and hauing beene refined, it hat beene found by some of our Phisitions and Chirurgeons to bee of the same kinde of vertue and more effectuall. The inhabitants vse it very much for the cure of sores and woundes: there is in diuers places great plenty, and in some places of a blewe sort.

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82 Ibid, 18.
84 Hariot, Narrative, 15.
This entry is of particular importance because it is the only one where Hariot makes mention of there being physicians and surgeons present in the colony. These medical men were also joined by at least one London apothecary named John Tuyt. Tuyt found himself with dual duties at Roanoke. Not only did he possess the skills to treat minor ailments that were sure to crop up with 108 people in the wilds of America, he helped Hariot identify the medical potential of plants. Though Hariot was a trained scientist, he lacked the specialized apothecary training obtained by Tuyt. And yet one could make the argument that true credit for finding the medicinal use of these plants lay with the local Indians, who had been using them for hundreds of years. There is not one entry in the commodity chapter that does not mention how the Indians used the drug.

Dr. Bohun’s research led him to another valuable medical plant, the myrtle tree. Strachey observed;

There groweth in the island of James Town a small tree of leaves, arms, and fruit like the myrtle tree. These tress grow in great plenty round about a standing pond of fresh water in the midst of the island, the pill, or rind, whereof is of great force against inverterate dysenterical fluxes, of which Doctor Bohoune made open experiment in many of our men laboring with such diseases, and therefore wisheth all such physicians as shall go thither to make use thereof.\(^5\)

Strachey implies that Dr. Bohun used the myrtle to cure bouts of diarrhea in the colony.\(^6\) Diarrhea, also called the flux, was a serious concern for the colonists. Victims became dehydrated at an alarming speed and quickly faded away. That the doctor was using indigenous treatments implies that he got the

idea for the cure from the Indians, and that he was desperate enough to use an unfamiliar treatment. The myrtle cure apparently worked, and would have only endeared the colonists further to the use of the newly found botanicals. 87

The gum tree was another local plant used as a treatment in the colony. The first reference to the gum tree as medicinal was made in a 1607 letter to the Virginia Company in London. "The Soil is most fruitful, laden with good oak, ash, walnut tree, poplar, pine, sweet woods, cedar, and others yet without names that yield gums pleasant as frankincense and experienced amongst us for great virtue in healing green wounds and aches."88 The letter was written with the intention of letting the company investors know what was transpiring in the Virginia colony, including the search for potential commodities. The gum tree was used by Dr. Bohun to heal wounds. Strachey observes his friend using the tree to such means. "Besides these fruit trees there is a white poplar and another tree like unto it that yielded a very clear and odoriferous gum like turpentine, which I have heard Doctor Boohoune (sic) and some of our surgeons there say may well be reckoned a kind of balsam, and will heal a green wound."89 In the reference, Strachey notes the similarity of the gum to turpentine, a remedy found in England.90 This shows that the colonists were immediately drawn to any remedies that resembled those at home. Familiarity bred marketability, in their

87 I Have not yet found reference to the use of myrtle in England. I have looked in medical recipe books of the times such as Culpeper's English Physician by Nicholas Culpeper and A Treatise by Timothie Bright.
89 Strachey, A History, 687
90 Blanton, Virginia, 13.
eyes. Also, any treatment that healed wounds was very useful to the highly active and often dangerous lives of the colonists. Everyday tasks often led to cuts and bruises, which needed immediate attention or they could cause gangrene, blood poisoning and slow death.

Another plant that was intriguing to the colonists was a plant called wisacan by the Indians. Almost immediately after landing at Jamestown, Gabriel Archer observed an Indian who, "Showed us the herb called in their tongue wisacan, which they say heals poisoned wounds. It is like liverwort or bloodwort."91 It is likely the colonists used this plant as well, since it so resembled a familiar treatment back home. Another reference to wisacan is made by George Percy in 1608, though the pronunciation is slightly different. "They [the Indians] have an herb called weysake, like liverwort, which they chew and spit into poisoned wounds that are thereby healed in four and twenty hours."92 William Strachey also observed the use of the root. "They have another root which they call wighsacan. As the other feedeth the body, so this cureth their hurts and diseases. It is a small root which they bruise and apply to the wound."93 There are no references to colonists using the root, though it is very likely that they did. The colonists picked up the use of other drugs from the Indians, and probably used wisacan as well.94

93 Strachey, 678.
94 Vogel, American Indian, 45.
Clay was an anomaly as the only non-plant Virginian remedy used in Jamestown. The use of clay as a treatment was first recorded by Thomas Hariot in *A Brief and True Report*. William Strachey records clay's favor with Doctor Bohun,

"[Of use is] A white bole, which Dr. Bohun calls terra alba virginiensis, both arommatical and cordial, and diaphoretic in pestilent and malignant fevers, and some other drugs. It can be but some little time industriously spent to make trial of this so rich commodity."  

Oddly, Bohun used the clay in a pill form, whereas Hariot referenced the Indians using it as a poultice. At first it would appear that Bohun was up to his old experiments but in 1613 Samuel Argall wrote, "In this Journie I likewise found . . . a strange kind of Earth, the vertue whereof I know not; but the Indians eate it for Physicke, alleaging that it cureth the sicknesse and paine for the belly." This proves that Bohun picked up the practice from the Indians. The clay acted as an alexipharmic (poison expelling) treatment. It was used primarily for stomach aches, which were prevalent in a community that had to live with old and rotten food supplies. The colonists did ship clay back to apothecaries in England. By 1621 clay known as "red alum" brought three shillings a hundred.

Though it is counterintuitive to the modern mind, tobacco was first and foremost a medicinal plant. It was used as a drug by the Indians and sold in

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95 I am referring to the Caribbean coral and Italian sulfur on display at the APVA’s Jamestown archaeology museum.  
99 Blanton, *Virginia*, 104.
apothecary shops when it was exported to Europe. Europeans were well aware of American Indians' religious associations with tobacco, but they also observed and recorded their use of the plant for medicinal purposes. Tobacco was particularly popular with the Indians for its dry properties while smoked (which was believed to be beneficial in treating a chest cold), a treatment that would later be used by the English. But tobacco was used in more ways than one. Some South American tribes applied the juice directly to kill lice and other parasites, a crude yet effective insecticide.\textsuperscript{100} Tobacco was also valued for its antiseptic properties. The pounded leaves were pushed into wounds to prevent gangrene and infection. Ironically, tobacco was also considered a good treatment for cancer. It was believed that the smoke would pull the disease from the body as it flowed through the system and exited through the nose.\textsuperscript{101}

Luckily for English investors tobacco fit into the European medical system, which was based on the idea that the body was made up of hot, and dry and cold and wet "humors." The hot and dry properties of tobacco were particularly valued as a foil for the cold and moist humors brought upon the human body by the common cold, a common affliction in the dampness of England. Europeans were intrigued by the newly found botanical and experimented with it accordingly. A young French ambassador name Jean Nicot (of posthumous nicotine fame) was one of the first Europeans to experiment with the plant's medicinal properties. He even claimed to cure a man's cancerous tumor, perhaps inspired by the Indians

\textsuperscript{101} Ibid, 6.
use of tobacco as a cancer treatment, among other things. His presentation of tobacco snuff to Catherine D'Medici, then Queen of France, led to popularity of tobacco as a medicine in both France and abroad. "People began to take tobacco-snuff as a preventative, in a similar spirit to the consumption of vitamins today. They found the habit strangely compulsive, and tobacco use began to spread as quickly as the plant itself."\textsuperscript{102} With royal approval, tobacco had found a niche with the European continent.

European physicians and apothecaries would not have been inspired to experiment with tobacco if they had not had a roadmap of how to do so. They found this in the writings of Nicholas Monardes, who wrote about the plant in his book, Joyfull Newes from the New Founde World, which was later translated into English by John Frampton. "Of only the Leaves we know the [medicinal] virtues, I which we speak of, although that I do believe that the root has Medicinal virtues enough, the which the time shall discover. And some will say that it has the virtue of Rhubarb, but I have not experimented it as yet."\textsuperscript{103} Monardes goes on to explain that the leaves have value as a poultice, as seen with the Indians. "With some binding and comforting it gleweth together and does soder the fresh wounds and does heal them. The filthy wound and sores it does cleanse and reduce them to a perfect health."\textsuperscript{104} Monardes also describes how tobacco could be used as a hot poultice upon the head to heal headaches and stuffiness brought on by colds. Tobacco was also ingested as a treatment for stomach and

\textsuperscript{102} Ibid.
\textsuperscript{103} Hariot, \textit{Narrative}, 13.
\textsuperscript{104} Ibid, 45.
other internal ailments. Monardes' readers would also learn about the plant's effectiveness against menstrual cramps, worms, toothaches, arthritis, chilblains, and venomous wounds, the latter being of great interest to a pre-antibiotic society. Monardes conducted his own experiments to test the effectiveness of tobacco as cure by purposely wounding a dog and healing it with a poultice made from tobacco juice. He was so impressed with the results that he even asserted that there would no longer be a need for the amputations of limbs, tobacco juice could be used instead. Monardes also touted the use of tobacco as a healer of lesser wounds such as sores, which were of great concern in a society that did not value bathing or the changing of clothing. Monardes also extolled a more traditional use of tobacco, smoking, which he claimed cured ailments ranging from hunger to constipation. “Taken in a pipe it hath almost as many virtues, it easeth weariness, takes away the sense of hunger and thirst, provokes the stool [and] easeth the body of superfluous humors, opens stoppings.”

The English were already aware of tobacco by the time of English settlement in Virginia. Tobacco had been exported from the New World by the Spanish throughout the Sixteenth Century. It was already well known enough to earn a passing mention in Spenser's 1590 work *The Faerie Queene*. The scene recommends the use of tobacco as a healer in the instance of flesh wounds, as seen in the following passage in which the fairy Belphoebe heals the seriously wounded squire Timias:

105 Ibid, 114.
Into the woods thenceforth in hast she went,
To seeke for hearbes, that mote him remedy . . .
There, whether it divine Tobacco were,
or *Panachaea*, or *Polygony*,
She found, and brought it to her patient deare,
Who all this while lay bleeding out his hart-bloud neare.
(3.5.32) (1590)\textsuperscript{106}

Spenser’s allusion to tobacco as a healer belies the modern opinion of the American plant as a healing drug. Belphoebe intends to use tobacco as a poultice for the young man’s bleeding wound, in the same manner as was described and popularized by Monardes a few decades earlier. This brief mention of tobacco also implies that a general audience in 1590 would have recognized this medicinal use of tobacco. The leaves were doubtless being smoked at this time as well, but it appears that tobacco had at least a two-fold application, and since Monardes’s book *Joyfull Newes* retained popularity in England well into the seventeenth century it is likely that people also regarded smoking as a medicinal practice.

Interestingly, though it was a familiar drug in England, it seems that the English did not initially plan on exporting the drug from Virginia. Hariot mentioned tobacco in *A Briefe and True Report*, but he places it within his chapter on observations on the Indians rather than in his “Merchantable Commodities” chapter.

The Spaniardes generally call it Tobacco. The leaves thereof being dried and brought into powder; the use to take the fume or some thereof by sucking it through pipes made of clay into their stomache and heade; form whence it purgeth

\textsuperscript{106} Edmund Spenser, *The Faerie Queen*, (Indianapolis: Hackett Publications, 2006), 3.5.32
superfluous phlegm and other gross humors, openeth all the
pores and passages of the body: by which meanes the use
thereof, not only preserueth the both from obstructions; but also if
any be, so that they have not beene of too long continuance, in
short time breaketh them; wherby their bodies are notabley
preserued in health, and known not many greevous diseases
whereithall we in England are oftentimes afflicted.107

Hariot seemed to be impressed with tobacco’s preventative values, and at the end, alludes that it would be useful for the English to take the drug in order to prevent certain common English afflictions, such as colds. It is likely that he knew that the Virginia tobacco was not very strong, and therefore would not be as popular in England as Caribbean strains of the drug. Tobacco was also recommended as a way to prevent famine. According to Monardes, apothecaries should:

Make little balles of the juice of the hearbe Tabaco, and the ashes of cockle shells wrought up together, and dryed in the shadowe, and in their travaile they place one of these balles betweene their neather lip, and their teeth, sucking the same continually, and letting downe the moisture, and it keepeth them both from hunger and thirst for the space of three or foure daies.108

Tobacco remained well-received in England despite the fact it was not exported from English colonies until 1614. The drug’s success in the country lay in no small part to the publications of Monardes and Hariot, who were de facto in the medical community. Smoking as a pastime rose to popularity in the latter part of the century in Western Europe. Smoking as a past time no doubt began when people took the drug as a cure and subsequently became addicted. Sailors

107 Hariot, Narrative, 15.
108 Wear, Medicine, 98.
of all nationalities were noted to be particularly fond of the drug, which they believed cured ills obtained during their sojourns at sea.\textsuperscript{109} The English bought their tobacco from apothecary shops, where it was advertised as a way to dispel phlegm from the lungs.\textsuperscript{110} The calming effects of tobacco were also noticed by England’s medical community, people became soothed when they smoked it. The English undoubtedly classified tobacco in the same manner as other drugs sold by the apothecary. In the seventeenth century there was not a distinction made between medicinal and hallucinogenic drugs, nor was there the same understanding of “bad” or “good” drugs, nor extensive studies on long term effects. Selling tobacco with other drugs was a deliberate decision; it could have also been sold in grocer’s stores with food and spice items.

Tobacco’s success came out of the long search for marketable drugs in the New World. Tobacco is arguably exactly what the English apothecaries hoped to find. It was a drug that grew well in Virginian soil, was relatively easy to cultivate, traveled well across the ocean, and was very profitable. Tobacco required little more than a lot of land and manpower, both of which were easily available in Virginia. Tobacco is widely acknowledged by historians today as the economic savior of the Jamestown colony. In 1612, John Rolfe experimented with growing a popular Caribbean strain of tobacco, Orinoco Nicotanus Tobaccum. So successful was he with this venture that within a year he had

\textsuperscript{109} Gately, \textit{Tobacco}, 88.  
\textsuperscript{110} Ibid, 46.
inspired his fellow colonists to fill their own fields with tobacco plants, which were sent back to England to be sold in apothecary shops.\footnote{Haile, \textit{Narrative}, 687.} Tobacco became the primary crop exported from the colony; so important was it in the lives of the colonists that Virginia culture began to be synonymous with tobacco. Virginian tobacco brought so much money on the English market that the colonists neglected growing necessary food supplies in order to grow the drug. The success of tobacco transformed Jamestown from being a floundering English outpost to a successful export colony. Tobacco’s success as an export caused more people to leave England to try their chances at farming in Virginia. These farmers required cheap labor to turn their fields and a profit. This labor brought indentured servants and, decades later, a large influx of slaves from the west coast of Africa. Tobacco became the main export crop from Virginia for the next century.\footnote{Gately, \textit{Tobacco}, 140.}

The drug trade in Jamestown petered out by 1620. This can be attributed to a variety of reasons, the first of which was the obsolescence of sassafras as a treatment for syphilis.\footnote{Thomas Parran, “Syphilis: A Public Health Problem”, \textit{The American Association for the Advancement of Science}, Vol. 87, No. 2251. (February 1938), 147-152.} Sassafras had never been a cure for syphilis, and there was little medical proof that the plant worked as anything other than a placebo. Taking over from sassafras as the newest syphilis treatment, was mercury which actually did alleviate the pain of syphilis. Mercury was administered either orally, through vapor baths or even applied topically to the afflicted region. Mercury
went well with the theory of the humor system, because mercury vapor baths caused the patients to perspire, which was believed to expel the disease from the body. Mercury is well known now to be poisonous, and many symptoms that were thought to be associated with syphilis were in actuality caused by mercury poisoning.\textsuperscript{114}

Tobacco never became obsolescent in the way of sassafras. Rather, the bulk of tobacco use changed from medicinal to pleasure. It was the Dutch who popularized the use of tobacco as a pleasure rather than a medicinal use. The Dutch picked up tobacco from England and. Students spread the use of it through their universities. “It was introduced to them as a substance for pleasure alone.” The Dutch smoked tobacco so commonly as an amusement that it became identifiable with them. They used pipes as their favored tobacco delivery system. They began to use it as an instrument of exchange all over the world, thus spreading the drug further.\textsuperscript{115} The Chinese were banned from smoking tobacco by their emperor in 1640, so they took to taking the drug as snuff instead.\textsuperscript{116} By the mid-seventeenth century tobacco had become almost solely a drug for pleasure rather than a drug treatment, thus completing the transition from botanical treatment to addictive drug.

\textsuperscript{114} Wear, \textit{Medicine}, 45.
\textsuperscript{115} Gately, \textit{Tobacco}, 81.
\textsuperscript{116} Ibid, 87.
CONCLUSION

The English did not create their New World colonies out of a vacuum, rather, they were inspired by the success of those who went before them. Their inspiration lay in the hands of the Spanish, who had explored, discovered and exported New World commodities for nearly a century before the English. The English went into the New World with set intentions. The English wanted a permanent colony in order to export newfound New World commodities to England. The Jamestown colonists were far more interested in finding indigenous commodities than pirating Spanish ships. One of these desired commodities were drugs. They knew there were drugs available because of the research done by the Roanoke colonists, which had been published in a bestselling book. The settlers sent drugs to England, first sassafras and then, in much higher quantities, tobacco. Tobacco became immensely popular, and was soon the main export of the colony, thus assuring the success and survival of English settlement Virginia. The drug trade had fulfilled its intention in Roanoke and Jamestown. What Hariot and his physician co-scientists had found at Roanoke had helped inspire the Virginia Company to fund and found Jamestown. Jamestown became profitable off of the tobacco trade, which had begun as a botanical cure. Though the drug trade was not the only reason the English settled in North America, it was a big push, and arguably proved itself worthwhile. Tobacco guaranteed Jamestown’s permanence. It was the first successful
export, and proved to those in England that the New World could produce an economically viable crop.

A historian who was interested in further study of sixteenth and seventeenth century European apothecary practices would have the benefit of a good number of primary resources. There is enough evidence to create a definitive history of European apothecaries, since the profession did not change drastically from country to country; though the researcher would benefit from being reasonably fluent in Italian, as all Asian drugs came through the Venetian ports. Another aspect of apothecary work that could be expanded on is the drugs themselves. Other than tobacco, there are no books written on the drugs found during the first few decades of European expansion in the New World. Sassafras has produced enough primary resource information form its use by the Indians through modern times to create a solid historical study. The study of individual drugs falls neatly into a recent vogue method of study, Atlantic history. Another gap in the drug historiography is a modern study of apothecary work in the colonies, particularly Virginia. The last book published on the subject was Wyndam Blanton’s “Medicine in Virginia”, first published in 1930. With the archaeological evidence found in Williamsburg and other eighteenth century towns the subject could be expanded upon vastly. A specific area of Colonial Virginian study could be the extent and length of indigenous Virginia remedies. A historian with an interest in Colonial drugs has the benefit of a historical field not

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117 Wear, Medicine, 350.
covered already many times, but, most importantly, a field that affected the everyday lives of people in the past.
BIBLIOGRAPHY


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Laura Passic was born January 26, 1984 in Philadelphia, Pennsylvania. After graduating from Interlochen Arts Academy in 2002, she attended DePaul University in Chicago, Illinois, to study Music where she graduated in 2006. She decided to pursue her Master’s degree in American History at the College of William and Mary. She is currently working for the federal government.