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Plague and Perception: The English Interpretation of Plague in Massachusetts

Sarah Peck

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Plague and Perception:
The English Interpretation of Plague in Massachusetts

Sarah Peck

Submitted in Partial Completion of the
Requirements for Commonwealth Honors in History

Bridgewater State University

December 13, 2015

Dr. Brian Payne, Thesis Director
Dr. J.R. Webb, Committee Member
Dr. Thomas Nester, Committee Member

***Plague and Perception:
The English Interpretation of Plague in Massachusetts***

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Sarah Peck
Dr. Brian Payne

Table of Contents



1. Introduction

1a. Thesis

1b. Methodology

1c. Historiography

2 Foreign and Indigenous Species

2a. The Introduction of Foreign Disease

2b. Domesticated Species

2c. The Scientific Role of Rats in the Colonization Process

3. European Explorers and the Wampanoag

4. Plimoth Colony and the Wampanoag

4a. Wampanoag Slaves

4b. Sir Ferdinando Georges' Reflection

4c. Plague in Plimoth

4d. The English Advantage

4e. Usurpation of Land

4f. Transformation of Land

4h. Wampanoag- English Treaty

5 English Successes with Plimoth Colony

5a. Reinfection Among Missionary Sites

5b. Religion and Disease

5c. Prophecies about the Wampanoag

5d. Christian Rational on Disease Amongst the Natives

6. Conclusion

Introduction

Thesis

Evidence suggests that the early economic and political success of the English in Plimoth Colony is due to the introduction of European diseases into coastal Massachusetts during the late sixteenth century. Building upon Alfred Crosby's 1972 publication *The Columbian Exchange*, modern environmental historians and cultural historians recognize the important interconnection between parasitism, disease, and historic trends. It is now fairly well recognized in both the science and humanities disciplines that any study of the political and economic development of European settlements and colonization of the Americas correlates with studies and research about the introduction of foreign diseases, as well as the introduction of new plant and animal species. The successful political and economic English history of Plimoth Colony is directly related to the decline of the Wampanoag population as a result of plagues and epidemics brought to the New World by European explorers and settlers during early years of exploration of New England. Although the diseases that existed in North, South, and Central America before 1492 were epidemiologically insignificant to the indigenous populations living in the New World, those diseases brought into the Americas by early European explorers spread rapidly throughout the continent. Most diseases in pre-contact North America were endemic, not epidemic. When a disease has been prevalent in an area for an extended period of time and the inhabitants are regularly in contact with the pathogen(s), a disease is considered endemic in that area. If foreign diseases were introduced to an area it would act in an epidemic nature for mortality and sickness during times of high prevalence in a targeted location. Put simply, European diseases reached the Wampanoag living in the region now recognized as Plymouth Massachusetts long before English colonization in Massachusetts during the seventeenth century. Yet, the idea that the Natives of

New England were somehow destined to be destroyed by diseases that pre-date English settlers is often misinterpreted and relieves the English themselves of responsibility for the mass death of Native peoples in New England. This thesis argues that the key to the successful English colonization of coastal Massachusetts was not just the onslaught of plagues and epidemics that affected the Wampanoag in coastal Massachusetts from 1616 to the mid-seventeenth century, rather, the success is due to how English explorers and colonists crafted racial and religious perceptions about these disease ridden Wampanoag populations, and how these perceptions empowered the English to perceive themselves as a culturally superior power further enabling them to become the colonizer and the Wampanoag the colonized.

Methodology

Like the relationship of Cortez and the Aztec, and Pizarro and the Inca, the dramatic relationship between the Wampanoag and the English is rooted in trans-Atlantic exchange and exploration during the sixteenth and seventeenth century, and through examining primary English, French, and Italian documents the relationship between foreign plague and the socio-cultural destruction of the Wampanoag in the seventeenth century is made evident through the bold observations made by male English writers that visited, explored, and settled the land of coastal New England.

The result of this interdisciplinary approach illustrates the combination of broad social structures, individual human agency, and genetic and microbial forces as an explanation for the massive depopulation of Wampanoag in New England, and the drastic consequences of native population decline in the face of early English migration. This depopulation of the Wampanoag was culturally significant, for it affected European-Native social relations and promoted the

general success of the English in colonial Massachusetts for over a century. To understand how English colonists formed perceptions about race and colonization in New England, an understanding of the existing Wampanoag people of pre-contact and early colonial America, and the significance of foreign disease on that population, must be established by studying the historical research conducted by environmental historians and revisiting centuries old primary source documents of European explorers during the “first contact” period.

Historiography

The new human and animal species of the North America posed many questions to the early explorers; in many situations explorers and colonizers from various countries took up a position of superiority and exploited the vast human, plant, animal, and mineral resources available to make a profit. The early writings of Italian, French, and English explorers illustrate this essence of self-proclaimed superiority in technology, political organization, military prowess, resistance to disease, intelligence, and culture.¹ Giovanni De Verrazano, Samuel de Champlain, John Smith, and other lesser-known sailors, adventurers, and fisherman were the first European explorers of New England. A century of collaborative research from the works of professional anthropologists, geographers, linguists, botanists, and archaeologists provide various interpretations of historical documents and native artifacts pertinent to this research. The majority of primary source documents written about sixteenth and seventeenth century New England are authored by middle and upper class white European men. Environmental historian,

¹ Henry Steele Commager and Elmo Giordanetti, eds. *Was America a Mistake? An Eighteenth Century Controversy* quoted in, Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Wesport: Praeger Publishers), 25.

Russell Howard, claimed that these documents were written by men wearing “ideological blinders,” that interfered with how they understood native social and political cultures.²

There is a wide variation in terminology used in referencing natives of the Americas, there is incredible variation among the spellings of locations and Wampanoag names in New England and the general East Coast, and most data is built off of the mixed analysis of various historians. During the sixteenth and early to mid seventeenth century there was no written form of the Wampanoag language, thus any written recordings of the Wampanoag would have been subjected to the authorship of the culturally distanced European writers.

The central debate in the history of “first contact” is what scholars refer to as the “virgin soil epidemics theory”. In 1972 historian Alfred Crosby coined the terminology “virgin soil epidemic” in the release of his book *The Columbian Exchange*. The theory articulates that epidemics could rapidly spread in a population in which there was no previous contact with a disease, and that this introduced disease would render the infected population immunologically defenseless. In David S. Jones’ scholarly work, *Virgin Soil Revisited*, Jones looked into the historical and ethical responsibility of understanding why virgin soil epidemics remained a central theme of the historiography of the Americas; Jones further provided a rich elaboration of Crosby’s initial extensive research on epidemics in Central and South America during the initial years of trans-Atlantic travel. Like many historians before him, Jones acknowledged how the opportunities to study virgin soil epidemics are limited in a highly globalized modern society in which most diseases have become endemic rather than epidemic causing infection rates to remain at a relatively low percent.³ Through social reconstruction with primary source

² Russel S. Howard, *Indian New England Before the Mayflower* (Hanover: University Press of New England, 1980), 7.

³ David S. Jones, “Virgin Soils Revisited” in *The William and Mary Quarterly* 60, no. 4 (2003): 741.

documents, Jones analyzed the role of disease in early colonial America. Jones' research shows that external factors such as indigenous exposure to weather, malnutrition, starvation, and poor sanitation amplified the negative aspects of foreign disease, and became a powerful European weapon of social and cultural propagation.

The way scholars viewed the history of indigenous peoples of New England changed dramatically in the 1970s. Influenced by the works of leading historians such as William McNeill and Alfred Crosby, the research began to focus on the social ramifications of plagues within native populations and how populations emotionally and physically responded to the horrendous impact of the diseases. Alfred Crosby defined virgin soil epidemics as “those in which the populations at risk have no previous contact with the diseases that strike them and are therefor immunologically almost defenseless.”⁴ This idea became more popular and spun off supportive and variant scholarship around the time of the Columbian Quincentenary. Academics began to focus on immunologically defenseless populations, rather than military conquest, as the new primary agent of Native American death rates. The subsequent generation of scholars, towards the end of the twentieth century, began to relate the influence of disease in indigenous populations with the English appropriation of native lands, implementation of English political systems, and the introduction of religious and social assimilation programs. In the twenty-first century historians have now begun to collaborate with social scientists and environmental scientists to produce a more conclusive study than could be made from a social standpoint alone.

Research scientists John S. Marr and John T. Cathey claimed that the Massachusetts epidemic of 1616 was neither a ‘virgin soil epidemic’ nor a case of genetic weakness in the face of European genetic superiority. Marr and Cathey predominantly based their research on

⁴ Alfred Crosby, “The Columbian Exchange”, quoted in, David S. Jones, *Virgin Soils Revisited* in *The William and Mary Quarterly* 60, no. 4 (2003): 720.

analyzing archaeological remains and contrasting remains to modern scientific studies about zoonotic diseases published by agencies such as the Center for Disease Control. Marr and Cathey argued that in the years leading up to the plague of 1616, there was great opportunity for repeated exposure as well as ample opportunity for the Patuxet (Wampanoag in Plimoth/Plymouth) population to grow intimate relations to the disease in question. Marr and Cathey did not extend their research into the humanities disciplines, but their work did offer a platform for scholars to study the estimated time of exposure and to develop a better understanding of the future destruction of Wampanoag social dynamics⁵.

Environmental historian Elinor Melville wrote her doctoral dissertation on the biological conquest of the New World. She focused her research on studying the introduction of Old World species into New World ecosystems. Melville's dissertation focused on central highlands of Mexico during the sixteenth-century and the relationship between the introduction of Old World grazing animals and the Spanish takeover of the land. Melville associated the virulent nature of epidemics with the population collapse of indigenous populations. Melville used Alfred Crosby's term "virgin soil epidemic" to describe the process by which disease organisms move into the new population. When the immunologically defenseless Native population was introduced to the new diseases, the disease spread rapidly and resulted in universal infection.⁶ Melville's research indicated that the speed in which a disease spreads in the case of a virgin soil epidemic is akin to the speed of the rising population of domesticated animals in their new ecosystem; were the European domesticated farm animal populations to soar, symptoms of disease were in close pursuit. This idea could be used as a model for colonial New England to show how this rise in English supremacy in Plimoth during the seventeenth

⁵John S. Marr, "New Hypothesis for Cause of Epidemic among Native Americans, New England, 1616-1619," *Historical Review* 16, no 2 (2010).

⁶ Melville, *Plague of Sheep*, 84.

century correlated not only with the continuous patterns of disease in Wampanoag populations, but also the secondary impact of herd animals on indigineous populations.

Foreign and Indigenous Animal Species

The Introduction of Foreign Disease

Any factor that can case mental or physical stress, such as displacement, warfare, drought, destruction of crops, soil depletion, overwork, slavery, malnutrition, or social and economic chaos can increase susceptibility to disease.⁷ Anthropologist, Howard S. Russell estimated that the maximum population of indigenous populations of New England at the cusp of English interaction at the end of the fifteenth century was around 75,000 people, and that it would decline in population more than seventy percent by the end of the seventeenth century.⁸ In places like Patuxet or Plimoth, where European diseases were not endemic but epidemic, terrible mortality ensued because the disease resulted in both high infection rates within a very short period of time. The microorganisms introduced to the New England can be grouped into four categories: bacteria, viruses, and singular and multicellular parasites.⁹ Factors such as the lack of childhood exposure, malnutrition, and social chaos generation by English colonization increased Wampanoag susceptibility to foreign disease. Examining the earliest historical and archaeological records about the Wampanoag exposes the relationship between the indigenous population and disease.

⁷ Jones, 734.

⁸ Russell, 28.

⁹ Jones, 724.

Domesticated Species

There are many zoonotic diseases that are associated with large herd species. Measles shares many similarities with rinderpest and canine distemper; smallpox with cowpox, and different strains of influenza is easily shared between hogs and humans. In his book, *Plagues and People*, historian William H. McNeill declared, “Most and probably all of the distinctive infectious diseases of civilization transferred to human populations from animal herds.”¹⁰ Anthropologist Howard S. Russell argued that before European contact, the New England native lifespan was far longer than its European counterpart;¹¹ hazards of internal tribal warfare and chase would be the only major dangers to an adult Wampanoag men and women. According to McNeill, it was the introduction of herd species, small-domesticated animals in particular, and the people who lived in close contact with these animals that brought significant cultural and biological change to the New World. By transforming the culture and psychology of the population the English biologically invaded coastal Massachusetts. Speculations on past events by historians, anthropologists, and biologists offer substance for future studies about the role of European diseases in colonization.

The Scientific Role of Rats in the Colonization Process

Scientists have recently identified the rat and domesticated dogs that arrived in New England as animals capable of possessing high rates of leptospira carriage. Some scholars suggest that severe (icteric) leptospirosis, also known as infectious jaundice, epidemic jaundice, and ictero-hemorrhagic fever, as the disease most likely to be the cause of the 1616 epidemic. The leptospirosis spirochete is located in a foci (such as water, mud, or moist soil) and is then

¹⁰William McNeill, *Plagues and People* (New York: Doubleday, 1998), 69.

¹¹Russell, 29.

transferred to a mammalian reservoir.¹² The introduction of these and other animals into coastal Massachusetts by English explorers and settlers established reservoirs of zoonotic diseases that could transfer to Wampanoag populations in the years leading up to King Philip's War. European dogs, cows, pigs, goats, and even rats possessed the possibility to be carriers of leptospirosis. The spiral shaped bacteria can tunnel through organs and cell membranes by first entering the eyes, mouth, open wounds- basically any mucous membrane. Prior exposure does not result in immunity for there are many different infectious strains. The urine of the rat carries the bacteria, further infecting raccoons, mink, and muskrat populations. The bacteria can further cycle through domestic and wild species of animals and humans. Wampanoag cultural community hotspots, like areas of clamming, carving stations, canoeing, and bathing are all areas that would have been in close location to a body of water and nearby animal populations. Thus, there was a direct link between the microbiology of contact and the social habits of Native peoples that facilitate a rapid spread of disease upon European arrival.

Wampanoag Society

Mobility and Survival

Different than the sedentary ways of the European pastoral settlement, the Wampanoag used seasonal mobility to utilize a vast and diverse territory for maize agriculture, hunting, fishing, and shellfish gathering.¹³ This seasonal mobility, in combination with the lack of close proximity to domesticated animals, limited the Wampanoag's exposure to diseases, especially

¹² John S. Marr, "New Hypothesis for Cause of Epidemic among Native Americans, New England, 1616-1619," *Historical Review* 16, no 2 (2010).

¹³ Cook, 271.

zoonotic diseases transferred from animal to human. The addition of the English to coastal Massachusetts impacted the Wampanoag lifestyle by introducing concentrated human settlements with accompanying livestock.

Socio-Political Structures

Pre-contact information on the Wampanoag is scarce and that which exists is often created from careful speculation and interpretation of archaeological evidence and literary remains. Before 1617 the Wampanoag confederation was a loose coalition of several dozen villages that controlled most of southeastern Massachusetts. The Wampanoag were of the Algonquin family alongside the Abenaki of Maine, Pennacooks of New Hampshire, Massachusetts of Plymouth Bay, and the Narragansett and Pequot to the West in Rhode Island and Connecticut.¹⁴ The Wampanoag used a tribal matrilineal political organization where a chief sachem governed each tribe. The sachem posed a largely advisory role and controlled his or her subordinates (community members of superior blood lines), commoners or ‘sannops’, and other members of society. Many early documents surrounding Plimoth history show the English viewing these sachems as lesser kings to their English counterpart. It was the sachems duty to uphold laws, negotiate treaties, control foreign contact, collect tributes, and if need be, wage war. Sachems were the most influential adults in Wampanoag society. It is the great sachem, Massasoit, of the Wampanoag nation during the time of the contact between native populations and the English, who signing early social contracts and instigated initial trade agreements. It is

¹⁴ Herbert Williams, “The Epidemics of the Indians of New England 1616-1620” quoted in in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (1909), 10.

also in these documents that one can see how European disease ruptured the Wampanoag society by disrupting political order by casting off sannops and chieftains as mortal subjects to disease.

Competing Perceptions of Disease

With the Wampanoag population only having an oral language in the sixteenth and seventeenth century, a great detail of ethnographic information about the Wampanoag was retrieved through the examination of various European journals and books that share the accounts of explorers, sailors, and colonizers in New England. These documents describe European physical and cultural interactions with the Wampanoag and other coastal natives of the New England region in the years between 1517 and 1620. The documents offered great insight about European perceptions about colonization and cultural ideologies in coastal New England.

Early European Thought

Europeans recognized smallpox as a pathological entity by the time of the arrival of the pilgrims. Smallpox had spread throughout the New World since 1519, the year Cortez invaded Mexico. In 1622 William Bradford discerned ‘plague’ from ‘pox’ in his description of the natives in Connecticut, “...for it pleased God to visite these Indians with a great sickness...This Springe, also those Indians that lived about their trading house fell sick of ye small poxe, and died most miserably: for sorer a disease can not before them; they fear it more than the plague.”¹⁵ It is the early plague years of 1616-1619 in which disease shaped the relationship between the English and the Wampanoag in the years during and following the settlement of Plimoth Colony.

¹⁵ Cook, 254.

European Explorers and the Wampanoag

Basque, Breton, and West Anglian vessels began to fish off the coast of the Grand Banks by the time of Columbus' travels of the New World in 1492. By 1517 Breton, Norman, Basque, Spanish, and Portuguese vessels expanded their fishing territory to the Grand Banks and surrounding waters.¹⁶ Many European figures of political and economic influence found it wise to send scouts overseas to assess the commercial prospects and colonizing possibilities of the New World. At the expense of the local population, the area of New England became a merchant's paradise within the first century of European contact. Italian in origin, Giovanni de Verrazzano served under King Francois I of France when he first sailed the eastern seaboard venturing twelve to fifteen miles inland of the area surrounding southern Massachusetts in 1524. Verrazano's search for the Northwest Passage was fruitless, yet his encounters with the locals provided great detail about the natives of Newport Harbor, Rhode Island. Positive in his descriptive nature, Verrazano wrote about his encounters:

Among them were kings more beautiful in form and stature than can be possibly described...they lived by hunting and fishing, and they are long-lived. If they fall sick, they cure themselves without medicine, by the heat of the fire, and their death at last comes from old age.¹⁷

The Wampanoag population was subject to the ravages of war, natural disaster, and disease. Social historian, Howard S. Russell claimed that the indigenous populations of New England

¹⁶ Russell, 38.

¹⁷ Giovanni da Verrazano, "Giovanni da Verrazano to His Most Serene Majesty the King of France" quoted in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperhell: Branch Line Press, 1999), 23.

possessed comprehensive knowledge of curatives, a ‘native pharmacopeia’¹⁸ with immense knowledge about cold and cough remedies, emetics, cathartics, diaphoretics, vermifuges, astringents, alternatives, stimulants, narcotics and antiseptics to treat a wide array of illnesses. Verrazano’s description of the Newport natives’ ability to cure themselves and his account of the longevity of New England coastal natives’ lives during the earliest years of contact with Europeans support these scholarly arguments.

Verrazano continued to provide detailed descriptions of the indigineous populations of New England:

They exceed us in size, and they are of a very fair complexion; some of them incline more to a white and others to a tawny color; their faces sharp, their hair long and black, up on the adorning of which they bestow great pains; their eyes are black and sharp, their expression mild and pleasant, greatly resembling the antique.¹⁹

Although Verrazzano may have been interested in the physical nature of the native population, his mission was more economic in focus. He made concrete physical exchanges with the natives during his fifteen-day stay, and traded, “of those things which we gave them, they prized most highly the bells, and azure crystals, and other toys to hang in their ears and about their necks.”²⁰ The locals, both men and women, also visited the European men aboard the ship, “imitating our [their] modes of salutation, and tasting our food”. Men from the ship “stayed two or three days on a small island near the ship, for their various necessities, as sailors are wont to do.”²¹ The

¹⁸ Russell, 53.

¹⁹ Ibid., 23.

²⁰ Giovanni da Verrazano, “Giovanni da Verrazano to His Most Serene Majesty the King of France” in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperhell: Branch Line Press, 1999), 20.

²¹ Ibid., 22.

curiosity of the natives in combination with the restlessness of the sailors provided many opportunities for physical contact between the two parties.

Verrazzano further crafted his own personal ethnographical document by describing the natives' semi-nomadic lifestyle. He wrote, "They change their habitations from place to place as circumstances of situation and season may require; this is easily done, as they have only to take with them their mats, and they have other houses prepared at once."²² Their semi-nomadic lifestyle coincided with their non-agrarian subsistence regime of collecting "apples, plums, filberts and many other fruits," and hunting "animals, which are in great numbers, as stags, deer, lynxes, and many other species"²³, fishing, and the cultivation of "grain"²⁴. This last reference to 'grain', was probably a reference to corn or beans, not wheat, rye, millet, rice and oats, which are Old World plant species and would not have made their way North from Spanish colonies in time for Verrazzano's arrival.

Nearly a century later, Plimoth colonist Thomas Morton also referred to the Wampanoag's seasonal mobility when he wrote that the natives of the region live "winter and summer in one place, for that would be a reason to make fuel scarce...but, remove for their pleasures; some times to their hunting places, where they remain keeping good hospitality for that season; and sometimes to their fishing places, where they abide that season likewise"²⁵. Where arable lands occurred the Wampanoag lived a semi-sedentary form of existence. Such a lifestyle permitted larger mobile settlements, organized politics and warfare, and did not overuse environmental reservoirs.

²² Ibid., 21.

²³ Ibid., 22.

²⁴ Ibid., 23.

²⁵ Thomas Morton, "The New English Canaan of Thomas Morton" in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperhell: Branch Line Press, 1999), 72.

Despite the positive exchanges shared between the natives of coastal Rhode Island and Verrazano, the explorer and his men received an incredibly less welcome invitation by the natives of southern Maine in the later months of 1524. The native people there welcomed Verrazano and his crew with a massive bombardment of arrows. Verrazano noted “they shot at us with their arrows, raising the most horrible cries and afterward fleeing to the woods.”²⁶ This defense could have been a desire to protect territorial lands or a reaction to previous negative interactions with the French fur traders. Dying seventy-six years before John Smith voyaged up the New England coast, Verrazano offered incredible insight on a population, and even more detailed and concise than the volumes of William Bradford. After Verrazano’s time in New England there was a seventy-five year lull in published written records on the natives of New England. The remaining years of the sixteenth century brought English and French fishermen and fur traders vying for power in coastal regions.

In 1609 Parisian lawyer and author Marc Lescarbot wrote a vivid account depicting early colonization attempts in Acadia in his *Histoire de la Nouvelle France*. Lescarbot reported one vector of European disease, the rat, as an invasive species of the New World around the time of Champlain’s adventures in 1603-1606.²⁷ Lescarbot wrote, ““Tant qu’on eut des cuirs on ne s’avisait point de faire la guerre aux rats...” (“As long as there is a cargo of skins, it makes no sense to kill the rats.”²⁸ John Smith’s 1607 catalogues of indigenous ecology; such as coastal plants, trees, and animals, did not mention indigenous vermin or peridomicilliary small animals except for squirrels. During the early 1600s the black rat was populous in coastal England. A rat

²⁶ Giovanni da Verrazano, “Giovanni da Verrazano to His Most Serene Majesty the King of France” in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperell: Branch Line Press, 1999), 24.

²⁷ Marc Lescarbot, “The History of New France” quoted in *New Hypothesis for Cause of Epidemic among Native Americans, New England, 1616-1619, Historical Review* 16, no 2 (2010).

²⁸ John S. Marr, “New Hypothesis for Cause of Epidemic among Native Americans, New England, 1616-1619,” *Historical Review* 16, no.2 (2010).

in the New World, especially a rat in New England would find fresh and stored items such as maize, beans, squash, pumpkin, roots, nuts, berries, meat, fish, and stores of shellfish in areas of Wampanoag habitation. Such quotidian practices of the Wampanoag, like underground food storage and ways of dress inadvertently turned against them during the contact years. In turn these rats could hypothetically contaminate these stores for human consumption. Identifiable risk factors, such as immersion in contaminated fresh water, soil, and antecedent heavy rains were in place during the second decade of the sixteenth century. From the ingestion of corn to time spent in sweat lodges, the microbial biological world was dramatically changing in the post contact years.

Other than Jacques Cartier's exploration of the Saint Lawrence River in 1534 and an ever-greater French population accumulating in southeastern Canada, it was not until 1602 that prominent interactions alongside coastal New England reemerged. Bartholomew Gosnold is most known for his instrumental part in the founding of the Virginia Company of London, yet his expedition to Cape Cod provides evidence of further English interaction with the coastal area of Massachusetts. Bartholomew Gosnold's *Concord* sailed out of Dartmouth, England to reach Maine's Casco Bay, Cape Neddick; he later continued his journey southwest crossing into Massachusetts Bay and rounding off of Cape Cod, naming the Cape after its bountiful population of codfish.²⁹ It is left to speculation if Gosnold and his men disembarked the *Concord* to make land in Massachusetts.

Samuel de Champlain sailed the New England coast in 1604, 1605, and 1606 before attempting to settle Maine. Samuel de Champlain left the first comprehensive description of eastern native, or Wampanoag, summer wardrobe:

²⁹ Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England* (Hartford: Silas Andrus and Sons, 1853), 3.

All these savages...wear neither roves nor furs, except very; moreover, their roves are made of grasses and hemp, scarcely covering the body, and coming down only to their thighs. They have only the sexual parts concealed with a small piece of leather, so likewise the women, with whom it comes down a little lower behind than with the men, all the rest of the body being naked.³⁰

As insignificant as a detail of clothing may seem, it is best to clarify that early documents do not write about the wearing of moccasins during the summer months. The concept of moccasins in relation to natives and European footwear is very important when discussing disease vectors and forms of transmission, for the skin acts as the first line of defense, and with different clothing than the English, the Wampanoag would have already been externally predisposed to infection.

In 1603, the English twenty-three year old Martin Pring commanded a voyage to the Maine Coast and traveled as far south as what would become Plimoth, and made another return voyage to New England in 1616. Samuel Purchas published Pring's writings in 1624. Like Verrazano's men, Pring's men also traded "tobacco, tobacco pipes, and snakeskins," with the locals during his six week stay to gather sassafras from the coastal region.³¹ Sassafras being incredibly expensive in the English market, yet in abundance in the wilds of New England, quickly became an object of export interest. It is also possible that Pring and his men introduced the first domesticated European dog to the region for he brought two English mastiffs ashore to ensure security. Pring noted that he brought, "from Bristol two excellent mastiffs, of which the Indians were more afraid of twenty of our men."³²In 1605 there was a small French presence in

³⁰ Samuel de Champlain "The Voyages of Samuel de Champlain" in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperhell: Branch Line Press, 1999), 12.

³¹ Martin Pring, "A Voyage Set Out from the Citie of Bristoll at the Charfe of the Chiefest Merchants and Inhabitants of the Said Citie with a Small Ship 1603; under the Command of Me Martin Pring" in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperhell: Branch Line Press, 1999), 24.

³² *Ibid.*, 24.

Massachusetts; De Poutrincourt under order of Pierre Dugua, Sieur de Monts visited the Cape to make a stop to fix the ship's rudder, and bake bread on the land. Poutrincourt had a cross erected on a green bank to sign the territory into subjection to the crown of France.³³ After an afternoon of gunfire and arrows, Poutrincourt executed six natives as a retaliatory measure.³⁴

Two years later, James Rosier sailed under Captain George Weymouth on the *Archangel* on a voyage of discovery along the New England coast. Different than previous voyages, the Earl of Southampton and Thomas Arundell had financially sponsored the voyage to scout of potential sites for a colony. Interactions ensued, as Rosier and his men kidnapped Native men to exploit as guides and interpreters on future explorations. In this act, Rosier and Weymouth established the foundation for decades of kidnapping and slave labor use of the natives.

In the June of 1614, Captain John Smith left a fishing station on Monhegan Island off the coast of Maine with a small fleet with two large ships (primarily used for whaling), and a few shallops. Smith, an English gentleman and officer, was well experienced in all things associated with colonization whether it is colonial pioneering, endurance, starvation, or the general hardships of exploration. Smith's writings offer great ethnographic insight on the Wampanoag. Smith's interactions with the indigenous populations of Massachusetts should start with how he first interacted with the indigineous populations of the area surrounding Virginia.

In letters written to King James I, the English court, as well as members of the London Virginia Company, Smith revealed early on the significance of carefully handling relationships with the natives. Smith viewed the natives as wild animals to be wary of, "you must in no case

³³ Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*, 29.

³⁴ *Ibid.*, 30.

suffer any of the native people of the country to inhabit between you and the seacoast.”³⁵ The seacoast held geographical and economic significance to both English and native parties. Whether it was the Powhatan or the Wampanoag, possessing the territory allowed the shoreline groups to contain power as middlemen in trade, access to the ocean for travel and fishing, and served as a line of defense against warring inland tribes. Smith was quick to recognize the value of the coastal territory to those wishing to colonize or extrapolate resources from the land. Smith connected the importance of waterways in Massachusetts Bay to that of the James River in Virginia.

During the month of the initial building of the Virginia colony along the banks of the James River, Smith declared, “finding this place to be the so convenient for our men to avoid diseases which will breed so long a voyage”³⁶. Here, John Smith cleared reiterated the general knowledge that the three month travel from England to coastal North America was a time in which European disease could run rampant on a ship. On May 25, 1607, a leader in the native community referred to as the king Arahetic Loy as being very sick for “hot Dryckes [drinks] he thought caused his grief.”³⁷ The impact of the English diet on the native populations appears to have occurred much faster in colonial Virginia than in colonial Massachusetts. Unfortunately, Smith did not dote upon describing the use of English food more in depth in his writings, but his writings clarify how the English were slowly transforming the natives in a cultural manner by initiating changes in their diets. Yet, unlike any of the writings by other English colonizers, he shared in a letter back to England stating, “not to let them see or know of any sick men if you

³⁵ John Smith, “The London Virginia Company: Instructions by way of advice, for the Intended Voyage to Virginia,” in *The English Scholar’s Library: Captain John Smith’s Works*, ed. Edward Arber (London: Kings College, 1884), xxxv.

³⁶ *Ibid.*, lix.

³⁷ *Ibid.*, xliii.

have any.”³⁸ Smith found it advantageous to not indicate his men as sickly to the natives as to preserve the element of surprise in the case where he and his men would have to engage in combat with the natives. Whether or not Smith kept his ill crew secret as to avoid fear, or to use as a possible tool of advancement, Smith does not further clarify, yet he like the many economically and religiously driven men that would follow in his footsteps would look for the most opportune time for the English to lay claim to these lands. Cotton Mather, Daniel Gookin, and William Bradford would all later use the concept of disease as a biblical weapon against the Wampanoag nation while not describing the deaths within their own village.

In his *Of the Natural Inhabitants of Virginia*, Smith stated, “Some are disposition fearful, some bold, most cautious, all Savage.”³⁹ The connotation and application of the word “savage” could warrant a dissertation in itself, yet here it is used to show the gradual shift of native-European relationships dramatically shifting from Verrazano’s eloquent description of natives to Smith’s repeated use of the derogatory term “savage”. Later in one of his volumes, Smith wrote, “sometimes they are troubled by dropsies, swellings, aches, and such like diseases for cure whereof they build a stove in the form of a dovhouse [douhouse] of mats, so close that a few coals are.”⁴⁰ Smith referenced and acknowledged the use of herbal remedies, although it did not yet show a relationship between disease and religion in colonies. Thus far, both Verrazano and Smith identified coastal native knowledge of remedies for natural diseases and illnesses.

After his time spent with the Powhatan, Smith used a small shallop to travel with eight of his men to trade with the coastal natives of Massachusetts in 1614. Smith was the first man to discuss physical combat between Europeans and the Wampanoag resulting in death:

³⁸ Ibid., xxxvi.

³⁹ John Smith, “The Description of Virginia By Captaine Smith” in *The English Scholar’s Library: Captain John Smith’s Works*, ed. Edward Arber (London: Kings College, 1884), 65.

⁴⁰ Ibid., 75.

We found the people in those parts very kind, but in their fury no less valiant, for upon a quarrel we fought with forty or fifty of them...there let fly their arrows for our shot, till we were out of danger; yet one of them was slain, and another shot through the thigh.⁴¹

Unlike the future writings of William Bradford, there is a complete lack of empathy for the loss of native life – propagating this idea of social and cultural European superiority. By the end of his explorations of the Massachusetts area, Smith counted forty native villages between Connecticut and Penobscot Bay.⁴²In other description of the people and the land, Smith wrote:

So well inhabited with a goodly, strong and well proportioned people, besides the greatness of the Timber growing on them, the greatness of the fish, and the moderate temper of the ayre (for of the twentie five, not any was sicke but two that were many years diseased before they went, notwithstanding our bad lodging and accidental diet.⁴³

Smith visited coastal New England on the eve of massive epidemic catastrophe. This ‘bad lodging’ Smith wrote of indicates that he and his men did in fact engage with the natives while temporarily living ashore. Having said interactions with the natives, Smith was the first European man to describe the interaction with inhabitants of Plymouth in detail:

⁴¹ John Smith, “The Generell Historie of Virginia, New England & the Summer Isles with the True Travels, Adventures and Observations, and a Sea Grammar” in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperhell: Branch Line Press, 1999),27.

⁴² Russell, 12.

⁴³ John Smith, “A Description of New England by Captaine Smith” in *The English Scholar’s Library: Captain John Smith’s Works*, ed. Edward Arber (London: Kings College, 1884), 193.

Then come you to Accomacke an excellent good harbor, good land, and no want of anything but industrious people. After many kindnesses we fought also with them, though some were hurt, some slain, yet within an hour they became friends.⁴⁴

Accomacke or Accomak, another Wampanoag term for the general area of Plimoth, was inhabited by members of the Wampanoag nation. Smith's reference to the Wampanoag as "industrious people" foreshadows how one of his men, Thomas Hunt, would later claim ethnic superiority over the native population and force a small population into slavery. Further elaborating his thoughts on the state of New England, Smith stated:

All sorts of cattell may here be bred and fed in the Iles, or Peninsulaes, securely for nothing. In the Interin, till they increase, if need be (observing the season) I durst undertake to have corne enough from the Salvages for 300 men, for a few trifles. And if they (the Savages) should bee untoward (as it is most they are) thirty or forty good men will be sufficient to bring them all in and make this provision.⁴⁵

Here it becomes evident that Smith and his men were ready to engage in physical abuse if he was unable to trade for corn at a low cost. Smith later again mentioned the possible use of the Wampanoag as laborers, noting "the necessaries for shipping, onely for labour; to which may bee add the assistance of the Salvages, which may easily be had, if they be discreetly handled in their kindes towards fishing, planting, and destroying woods."⁴⁶ The Wampanoag men and women would hypothetically source out as a great labor outlet- willingly or unwillingly. Agriculturally speaking, Smith viewed Plymouth and Massachusetts Bay as fine pasture for

⁴⁴ John Smith, "The Generell Historie of Virginia, New England & the Summer Isles with the True Travels, Adventures and Observations, and a Sea Grammar" in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperhell: Branch Line Press, 1999), 27.

⁴⁵ John Smith, "A Description of New England by Captaine Smith" in *The English Scholar's Library: Captain John Smith's Works*, ed. Edward Arber (London: Kings College, 1884), 198.

⁴⁶ *Ibid.*, 205.

cattle, “kine [swine], horses, goates, course Cloath, and such commodities as we want.”⁴⁷ Smith reinforced Verrazano’s writings about the semi-nomadic and agrarian lifestyle of the Wampanoag for he wrote, “the Countrie of the Massachusets, which is the Paradise of all these parts. For, here are many Iles all planted with corne, grouse, mulberries, salvage gardens, and good harbours,”⁴⁸ According to Smith, there were yet to be any domesticated animals in the region. The animals he found of importance were moose, deer, bears, wolves, foxes, wildcats, beavers, otters, martins, fitchs, musk-rats⁴⁹. Smith also noted there was an abundant supply of currants, mulberries, respices, gooseberries, plums, walnuts, chestnuts, small nuts, pumpkins, gourds, strawberries, beans, peas, maize, and flax. Smith’s writing reinstated the concept that the Wampanoag were not yet reliant on subsistence farming and were predominantly living as hunters and gatherers before the establishment of New Plimoth.

Plimoth Colony

Wampanoag Slavery

Within the timespan of a few months following Smith’s departure from Plimoth harbor, a man in his relation, Thomas Hunt, kidnapped natives from the area. Thomas Hunt was left in charge of one of Smith’s ships to finish a collection of cargo for Spain. A man in Hunts’ service, described the captain’s treatment of the natives:

Stowing them under hatches to the number twentie foure, carried them into the Straits, where he sought to sell them for slaves, and sold as many as he could get money for. But when it was understood from whence they were brought, the friers

⁴⁷ Ibid., 200.

⁴⁸ Ibid., 205.

⁴⁹ Ibid., 207.

of those parts took the rest from them, and kept them to be instructed in the Christian faith.⁵⁰

This early violent encounter between Europeans and the Natives of Massachusetts had a profound impact on future social relations within that region. Later writings of William Bradford and Edward Winslow seen in the 1622 publication of *Mourt's Relations* describe the initial reaction between those who travelled by the Mayflower and the natives as shared from the local Tisquantum. Winslow wrote:

The Nausets are much incensed and provoked against the English and about eight months ago slew three Englishmen...These people are ill affected towards to the English by reason of one Hunt, a master of a ship, who deceived the people and got them, under color of trucking with them, twenty out of this very place where we inhabit, and seven men from the Nausets.⁵¹

According to Bradford's short-lived interactions with the natives of Barnstable Harbor on Cape Cod in the fall of 1620 he gathered that Thomas Hunt "carried them captives into Spain". The next recorded European contact with the Wampanoag was the French in 1615/1616.

Sir Ferdinando Georges' Reflection

Beyond military conflict, the spread of European disease also left a legacy that the future *Mayflower* passengers would have to deal with. Mentions a widespread epidemic in the New England region first appear in a series of documents from 1616. The news was brought back to England by members of an expedition sent to the coast of the Maine led by Sir Ferdinando Georges. Georges wrote:

⁵⁰ Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*, 32.

⁵¹ Edward Winslow, *Mourt's Relation: A Journal of the Pilgrims at Plymouth*, ed. Dwight B. Heath (Bedford: Applewood Books, 1963), 52.

I was forced to hire men to stay there the winter quarters at extreme rates, and not without danger, for that the war had consumed the Basahaba and most of the great sagamores, with such men of action as followed them, and those that remained were sore afflicted with the plague, so that the country was left void of inhabitants.⁵²

Georges described this spread of the disease and he hinted at the political issues tied with the loss of sagamores in the native community. Without their sagamores and sachems, native tribes were left in social upheaval. In efforts to form a tripartite alliance with the two other confederations, the Nausets, and the Massachusetts, the Wampanoag were desperate to build their population in defense against the warring Narraganset population at the time of the arrival of the Saints and Strangers.⁵³ Georges also mentioned how his English explorers and colonists were not afflicted with this plague, “Notwithstanding, Vines [colonist] and the rest with him that lay in the cabins with those people that died...not one of them ever felt their heads to ache while they stayed there,”⁵⁴. It is possible, that Georges news of the sickness amongst the natives, furthered this European ideology that the English were superior because they possessed this immunity to infection. Hypothetically, this uneven infection leans towards many theories believing that this epidemic was sourced by a European pathogen.

Plague in Plimoth

In the 1622 publication of *The New England Trials* Smith reflected on his observation of coastal Massachusetts, “...for where I had seene 100 or 200 people there is scarce ten to be

⁵² Ferdinando Georges, “Briefe Narration, etc.” in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 13.

⁵³ Charles Mann 30

⁵⁴ Ferdinando Georges, “Briefe Narration, etc.” in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 13.

found.”⁵⁵ Smith wrote that between 1616 and 1619 “three plague in three years successfully nere two hundred miles along the coast”⁵⁶. In 1630 Reverend John White of Dorchester declared in *The Planter’s Plea* that the plague “...which swept away most of the inhabitants all along the sea coast, and in some places utterly consumed by man, woman, and childe, so that there is no person left to claim the soyle which they possessed; in the most of the rest, the contagion hath scarce left alive one person of an hundred.”⁵⁷ In less than half a century since Samuel de Champlain’s written accounts of multiple places about native habitation along the Massachusetts’s coast, the Wampanoag population was diminished to a miniscule fraction of the original pre-contact size. Morton’s *New English Canaan* described Massasoit and his people during the height of the epidemic:

They died on heaps, and they lay in there houses, and the living, that were able to shift for themselves, would run away and let them die, and let their carcasses lie above the ground, without burial. And the bones and skulls upon the several places of their habitations made such a spectacle, that it seemed to me a newfound Golgotha.⁵⁸

Where Jerusalem became the fabled home to the Church of the Holy Sepulcher after Jesus’ crucifixion, the graveyard of the Pawtuxet would be the home for the English religion, culture, and commerce for centuries to come for the Saints and Strangers believed their God had cast down upon the Wampanoag granting them approval to spawn their English social and cultural customs in the New World.

⁵⁵ Cook, 263.

⁵⁶ John S. Marr, “New Hypothesis for Cause of Epidemic among Native Americans, New England, 1616–1619,” *Historical Review* 16, no.2 (2010).

⁵⁷ Cook, 263.

⁵⁸ Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*, 27.

Edward Winslow's *Mourt's Relations* also mentioned the turn of the century epidemic. In one chapter, Winslow described the events of March 16, 1621 in which a native named Samoset introduced himself to a band of Englishmen ashore. Winslow declared, "He told us the place where we live now is called Patuxet, and that about four years ago all the inhabitants died of an extraordinary plague, and there is neither a man, woman, nor child remaining, as indeed we have found none."⁵⁹ As earlier described by John Smith, it is now evident that the Wampanoag lost some of this geographic power for losing the site of Patuxet would entail a loss of proximity to the sea, and the security of a coastal location, and the natural resources available in the area.

In a letter dated May 19, 1619, Captain Thomas Dermer wrote to the London based Reverend Samuel Purchas to describe a return voyage to New England from Monhegan to Cape Cod, stating that he and his men "found of New England some eminent plantations, not long since populous, now utterly void. In another place a remnant remains, but not free from sickness."⁶⁰ The letter continued, "their disease the Plague, for wee might perceive the sores of some that had escaped, who described the spots of such as usually died."⁶¹ The letter ended with Dermer's redemption of two captive Frenchmen from their times as captives in the service of the natives after a shipwreck in 1616.

A colonist of Wessagusset, Phineas Pratt, recorded his memories of the year 1622 in Plimoth. Pratt wrote, "we maed hast to settle out plantation in the Masachusets Bay- our Number being neare sixty men. At the same time ther was a plag Among the salvagis, &, as ym selfs told us half theyr people died thereof."⁶² It is in the writing of a few members of Plimoth,

⁵⁹ Winslow, *Mourt's Relations*, 51.

⁶⁰ Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*, 28.

⁶¹ Thomas Dermer "Purchas Pilgrims" in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperhell: Branch Line Press, 1999), 14-15.

⁶² Phineas Pratt, "The Narrative of Phineas Pratt" in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 19.

Wessagusset, and Massachusetts Bay Colony that the plague or epidemic of 1616 is still in existence for a decades after the decent of the sain\ In 1654, colonist Edward Johnson referred to the epidemic as “...chiefly desolating those places where the English afterward planted the country of Pockanocky [Wampanoag], Agissawamg [Agawam]...”⁶³ During the first half of the sixteenth century, Wampanoag, Massachusett, Patuxet, and Abenaki populations were directly impacted by the introduction of European diseases. The remaining Wampanoag population was unable to preserve subsistence cycles, such as corn planting or major hunts, weakening them for future infection; the epidemic had successfully cut down economic activity and generated hunger and famine amongst the native population.

English Advantage

Usurpation of Land

In 1620 King James II appointed the Duke of Lenox and others of high rank in the county of Devon, as the “council for planting, ruling, ordering, and governing of New England.”⁶⁴ The council consisted of “forty persons and no more” and created a commercial monopoly on the territory by declaring “absolute property in the soil, unlimited jurisdiction, the regulation of trade, the administration of justice, and the appointment of all officers were among privileges conceded by his Majesty.”⁶⁵ The House of Commons initially resisted the patent because it was not granted by them and did not allow complete free trade and fishery.⁶⁶ The patent presented favorable reasons for colonization, for the territory would be without its natural

⁶³ Cook, 256.

⁶⁴ Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*, (Boston: St. Andrus and Son, 1853), 29.

⁶⁵ “The History of Massachusetts in the Colonial Period” in Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*.

⁶⁶ Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*, 29.

population “by means of the late desolating plague, and wars among themselves.”⁶⁷ This plague provided the prime opportunity for the English to begin a new English colonization whilst asserting their cultural dominance.

Originally published in London in 1622, *Mourt’s Relations: A Journal of the Pilgrims of Plymouth* brought together the journalistic writing of William Bradford and Edward Winslow. Edward Winslow’s portion of the book was dedicated to describing the first year the passengers of the Mayflower spent on land. One of the most prominent men in Plimoth Colony, Edward Winslow led a number of expeditions to meet and trade with the Wampanoag. In *Mourt’s Relations*, Winslow noted the benefits of the cleared land. He wrote:

ye soyle good, and ye people not many, being dead, and abundantly wasted in ye late great mortalitie which fell in all these parts aboute three years before the coming of ye English, wherin thousands of them dyed, they not being able to burie one another; ther sculls and bones were found in many places lying still above where their houses and dwellings had been...⁶⁸

Thomas Morton later noted that it was custom of the natives of the area to bury their dead ceremoniously, and this abundance of bodies showed the devastating magnitude of this sweeping epidemic. After spending time exploring the region of Bristol, Rhode Island, Winslow documented the spread of the earlier epidemic, “The ground is very good on both sides, it being for the most part cleared. Thousands of men lived here, which died in a great plague not long since.”⁶⁹ Not only was the land largely depleted of its inhabitants, the previous Wampanoag had unintentionally left the land prime for the taking and use in cultivation practices.

⁶⁷ Ibid.,29.

⁶⁸ Edward Winslow, “Mourt’s Relations” in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 16.

⁶⁹ Winslow, *Mourt’s Relations*, 63.

The first benefit the English reaped from the epidemic was the available cleared land that Edward Winslow found ‘corn ready.’ On November 11, 1620, Edward Winslow alongside fifteen to sixteen well armed men went ashore of Plymouth to fetch wood for timber yet saw no sign of life or habitation. Ten days later, when “passing thus a field or two, which were not great, we came to another which had been new gotten, and there we found where a house had been, and four a five old planks laid together; also we found a great kettle which had been some ship’s kettle and brought out of Europe,”⁷⁰ and “two houses which had been lately dwelt in, but the people were gone.”⁷¹ Winslow and his men found a scattering of European items like the ‘great kettle’ as well as an “English pail or bucket.”⁷² The men also found a body wrapped in a sailor’s canvas cassock and cloth breeches. Winslow in greater detail, wrote, “the skull had fine yellow hair still on it, and some of the flesh unconsumed; there was bound with a knife, and a packneedle, and two or three iron things.”⁷³ The color of the hair and the type of clothing material indicate that he was not a Wampanoag man, and was most likely of European descent. Winslow later indicated that the body was also embalmed and that he and his men debated whether or not, “it was a Christian of some special note, which had died amongst them, and they thus buried him to honor him. Others thought they had killed him, and did it in triumph over him.”⁷⁴ Either way, this body was located very close to the Patuxet/Accomack village, which indicates there was at one point contact with the man either when he was healthy or when he was diseased. There is the possibility that his man was one of those marooned due to the shipwreck of the French vessel as noted by Dermer in 1616, or he was simply the last European to make direct contact with natives.

⁷⁰ Winslow, *Mourt’s Relations*, 21-22.

⁷¹ *Ibid.*, 28.

⁷² *Ibid.*, 29.

⁷³ *Ibid.*, 17.

⁷⁴ *Ibid.*, 28.

Transformation of Land

During the first few decades of English settlement, the introduction of farm animals was the catalyst for a chain reaction of events leading up the King Phillip's War. The presence of farms signaled a "shortening of the food chain and multiplying a restricted number domesticated species of plants and animals also created dense concentrations of potential feed for parasites."⁷⁵ London investor, Emmanuel Altham, was the first to write about the presence of domesticated farm animals in coastal Massachusetts in 1623. In a letter to his brother, Altham described a new English town with "houses pleasant, artillery pallside" with "neither man, woman, or child sick" and "sick goats, fifty hogs and pigs, also divers hens"⁷⁶. John Smith recorded on a return voyage, that by 1624, Plimoth had its first cattle, "At New Plymouth there are about one hundred and eight persons, some cattle and goats, but many swine and poultry."⁷⁷ The introduction of domestic animals into the coastal Massachusetts landscape acted as the second front line of European advancement; second to the introduction of diseases, animals deteriorated the soil-water regime and further marginalized the indigenous majority. In aligning themselves with the English, the Wampanoag had made a monumentally horrid mistake for they had not foreseen the massive population boom of the English as feasible in a location where their own kind suffered from mysterious diseases. By being in such close proximity to the growing English population, the Wampanoag were left subject to further social and physical subjugation of the effects of European diseases.

As a wild species, cattle, horses, and sheep are a gregarious herd species that provided the condition required to allow bacterial and viral infection to become endemic to follow by the

⁷⁵ McNeill, 59.

⁷⁶ Thomas Philbrick, *Plymouth Plantation: Selections from the Narratives of William Bradford and Edward Winslow*, V.

⁷⁷ Smith, 200.

evolution of more dangerous herd parasites that could be transferred to mankind. Cattle, horses, and sheep are chronic bearers of infection. According to the historian, William McNeill, the presence of animals in Plimoth Colony and Massachusetts Bay Colony provided a “ready basis for reinfection remained because in all probability domesticated animals were already chronic bearers of viral and bacterial infections capable of invading and reinvading people.”⁷⁸ As the English population grew, they required the importation of more domesticated animals from Europe; these domesticated animals could re-infect Wampanoag population as the English colony physically expanded into woodland territory.

Wampanoag-English Treaty

According to the writings of William Bradford, the 1616 epidemic did not affect the Narraganset population. In the 1647 publication of *History of Plymouth Plantation*, Bradford wrote, “they [the Wampanoag] brought word that ye Narighansets lived but on ye other side of that great bay and were a strong people, and may in number, living compacte together, and had not been at all touched with this wasting plague.”⁷⁹ By 1621, according to Bradford, the “Narragansett, which are reported to be many thousands strong,”⁸⁰ and the most powerful indigenous nation in the state. With their population intact, the Narragansett nation surpassed the Wampanoag in population, and thus, power. This relationship can be seen in the ease and speed of the Wampanoag forging an alliance with the English in the treaty of March 22, 1622. The most dangerous effect of the disease was the rather forced alliance between the Wampanoag and the English, for it signaled a loss of their cultural identity and their native independence.

⁷⁸ McNeill, 73.

⁷⁹ Bradford, *History of Plymouth Plantation*, 16

⁸⁰ William Bradford, *Hostile Indians Threaten the Colony*, quoted in, Thomas Philbrick, “Plymouth Plantation: Selections from the Narratives of William Bradford and Edward Winslow”: 205.

Published in 1647, William Bradford's second book, *The Second Book Of Plimoth Plantation* stated the terms of the official agreement of Massasoit and the Wampanoag and the English:

1. That neither he nor any of his should injure or do hurt to any of their people.
2. That if any of his did hurt any of theirs, he should send the offender, that they might punish him.
3. That if anything were taken away from theirs, he should cause it to be restored; and they should do the like to his.
4. If any did unjustly war against him, they would aid him; if any did war against them, he should aid them.
5. He should send to his neighbours confederates to certify them of this, they might not wrong them, but might be likewise compromised in the conditions of peace.
6. That when their men came to them, they should leave their bows and arrows behind them.⁸¹

This early pact makes the host population the lesser benefactor subject to English rules and customs. In *Mourt's Relations*, Edward Winslow reflected upon the day of the signing in stating, "We cannot yet receive but that he is willing to have peace with us, for they have sometimes seen our people sometimes alone two or three in the woods at work and fowling, when as they offered them no harm as they might easily have done, and especially because he hath a potent adversary, the Narragansetts, that are at war with him, against whom he thinks might be some strength to him, for our pieces are terrible onto them."⁸²The powerful and sophisticated Wampanoag society would have been a formidable military adversary if they had not been devastated by the epidemic of 1616. It is highly plausible that during the 1620s and 1630s the Wampanoag were in such a horrid predicament due to the depletion of their population that they were forced to act and form an alliance under duress with a foreign party.

⁸¹ Bradford, *Of Plimoth Plantation*, 88-89.

⁸²Winslow, *Mourt's Relation*, 58.

The Rise of the English

Between the months of November and December of 1622, the English noted a rise in sickness among the natives. On an expedition to purchase corn, Edward Winslow described the weak state of the natives, “When they came thither they found a great sickness to be among the Indians, not unlike the plague if not the same.”⁸³ One month later, Winslow tracked the presence and spread of disease among the indigenous population. He wrote, “That [corn] from Namasket was brought home partly by Indian women, but a great sickness arising amongst them, our own men were enforced to fetch home the rest.”⁸⁴ Not only are the larger social dynamics of the Wampanoag unraveled, but also the gender roles in the indigenous community lost their structure as the population continues to dwindle. It was during the plague and immediate post-plague years that the demoralization of the Wampanoag ensued. In the century before Verrazano and Champlain both noted the natural pharmaceutical pharmacopeia that existed for the Wampanoag. In the 1643 publication of *A Key into the Languages of America*, Roger Williams claimed that this new disease was different for “except the plague fall amongst them, or have other lesser sicknesses, and then no means of recovery.”⁸⁵ The host population was subject to these horrendous diseases without any sort of natural curative aid- an embarrassment to the population. Parasites changed the culture and psychology of the Wampanoag population by making them feel defenseless to foreign entities for no remedy possessed any value in the face of European sicknesses.

⁸³Edward Winslow, “Good News From New England” in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 18.

⁸⁴ Edward Winslow, “Good News From New England” ” in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 18.

⁸⁵ Williams, 6.

In the 1637 publication of *The New English Canaan* author Thomas Morton mentioned this continuity of disease, “This mortality was not ended when the Brownists of new Plimmoth were settled at Patuxet: and by all likelihood the sicknesse that these Indians died of as the Plague, as by conference with them since my arrival and habitation in those partes I have learned.”⁸⁶ On a return visit to the coast of Maine, Captain Christopher Levett noted the impact plague had taken on the coastal natives, for he observed much cleared land “having been planted by the savges who are all dead.”⁸⁷ The English took this as a religious and pragmatic sign that the land was in their possession for future cultivation.

The 1633-1634 epidemic primarily impacted the westerly Narragansett of the Connecticut Valley population and the fringes of the Wampanoag nation. An entry in John Winthrop’s journal identifies this outbreak in November of 1633. The journal reports, “A great mortality among the Indians. Chikatabot, the Sagamore of Neponset, died and many of his people, the disease was smallpox.”⁸⁸ The disease spread dramatically and by January 20, 1634, “the small pox was gone as far as any Indian plantation was known to the west, and much people died of it.” Historian Shelburne F. Cook supported similar theories of reinfection, in defending the concept that the plague of 1616 did not die out on the interior.⁸⁹ This epidemic terminally devastated the warring population and would prove the same for the Wampanoag in the years leading up to King Phillip’s War. In 1634, Mr. Francis Parkins wrote an article in the “*Jesuits of America*” discussing how, “a pestilence similar to that which a few years before had swept off the native populations of New England, had begun the ravages among them” among the Huron

⁸⁶ Nathaniel Morton, “New English Canaan” in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 17.

⁸⁷ Christopher Levett, “A Voyage into New England” in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 17.

⁸⁸ Cook, 258.

⁸⁹ Cook, 256.

population in southern Ontario.⁹⁰ Parkins later elaborated upon how the disease returned in 1636 and 1637 and was then followed by an onslaught of smallpox infections. In a 1635 publication of the *Letter of Brebuef in Jesuit Relations* there is documentation of the side effects of the disease.

The letter reads:

The sickness began with a violent fever, which followed by a sort of measles or smallpox, different than that common in France, accompanied in several cases by blindness, or by dimness in sight, and terminated at length by diarrhea, which has carried off many and is still bringing some to the grave.⁹¹

With a smaller able bodied population, continuing the normalcies of pre-contact life within Wampanoag society became largely impossible.

From the 1620s until the 1630s until King Philip's War there still existed gaps in childhood exposure to these European diseases for only small portions of the remaining population were those that were in constant contact with the English. Thus, there could be continuous cycles of epidemics for new populations were introduced with different variations of the diseases as well as combing populations that were already weakened and at risk of reinfection. On the cusp of the war, malnutrition and general social chaos further fed this biological and cultural turn of events. If an epidemic did not strike with extremely high mortality rates during the first wave of infection, the population "often missed key phases in their annual subsistence cycles, the corn planting, say, or the fall hunt and so they were weakened by the time of the next infection."⁹² The main epidemic that impacted the Pawtuxet branch of the Wampanoag saw most of its population destroyed within the first year of contact with the

⁹⁰ Francis Parkins, "Jesuits in North America" in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 24.

⁹¹ "Jesuit Relations" in in *The Epidemics of the Indians of New England 1616-1620*, ed. Herbert Williams, pp. 1-349, in *The Bulletin of the John Hopkins Hospital*, 20, no.224 (November 1909), 24.

⁹²Jones, 705.

disease. Any survivors joined other branches of the nation. Shelbourne F. Cook noted that any disease with less than a one hundred percent mortality rate affected a native population for decades to come for it reduced birthrates by eliminating an age ready to reproduce, as well as decreased the population as a whole. Tisquantum, never infected by the initial wave of the unknown disease, was the last of the Pawtuxet Wampanoag. Tisquantum “fell sick of an Indian feavor, bleeding much at ye nose (which ye Indians take for a symptom of death).”⁹³ There were several opportunities for the infection to reoccur immediately following 1620 for there was a constant flow of European commerce out of New Plimoth and New Amsterdam, and later the Massachusetts Bay Colony.

Unlike previous written accounts of the French and English in coastal New England, the writings of Winslow and Bradford both indicate that the people aboard the *Mayflower* were very ill before landing. Winslow wrote that, “Cold and wet lodging had so tainted our people, for scarce any of us were free from vehement coughs, as if they should continue long in that estate it would endanger the lives of many.”⁹⁴ Not only were non-presented bacteria aboard the *Mayflower*, there were definite European forms of bacteria, viruses, and parasites in existence in Plimoth.

In 1643, Roger Williams described the ailing Narraganset population as, “commonly abound with children, and increase mightily; except the plague fall amongst them, or lesser sicknesses, and then having no means of recovery, they perish wonderfully.”⁹⁵ Here Williams showed an uncertainty to the exact cause of illness, yet it can be discerned from this short passage that sickness of any sort was very severe following the initial 1633 smallpox epidemic.

⁹³ Cook, 255.

⁹⁴ Winslow, *Mourt's Relations*, 30.

⁹⁵ Roger Williams, “A Key into the Language of America” in *Indian New England: A Compendium of Eyewitness Accounts of Native American Life*, ed. Ronald Dale Karr (Pepperhell: Branch Line Press, 1999), 63.

In 1647 another epidemic passed through New England and affected the Native, English, French, and Dutch populations.⁹⁶ Pathogenic organisms were the causeways for social and cultural destruction within the Wampanoag population.

Religion and Disease

Warfare and disease coincided with one another throughout the history of European and Native North American interaction that profoundly shaped the social relationship of the two groups. The psychological impact of diseases during the seventeenth century in Massachusetts led to the wholesale demoralization and surrender of the Wampanoag. The English had not seen such ferocity of any disease since the Black Death, and it is no wonder that both cases have connotations of Christianity embedded in most of the writings.

Settlers and explorers of the coastal Massachusetts region viewed the plight of the Wampanoag as divine providence. To emphasize, John Smith said “it seems God hath provided this Country for our Nation, destroying the natives by the plague, it not touching one Englishman, though many traded and were conversant amongst them; for they had three plagues in three years successively, near two hundred miles along the sea-coast. That some places there scarce remained five of a hundred.”⁹⁷ It is after the initial wave of epidemics in Massachusetts that Wampanoag populations are pulled into the Christian schools and praised by the English more than their non-Christian counterparts.

Missionary Sites

Endemic diseases like tuberculosis and amoebic and bacillary dysentery often followed epidemics, like those seen in 1616 and 1633. These endemic diseases did not spread at the

⁹⁶ Cooke, 260.

⁹⁷ Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*, 27.

magnitude witnessed by the Wampanoag in the previous decade, and these diseases were still culturally and politically destructive to the indigenous population. Christian missionary sites in Massachusetts were hot spots for reinfections within native populations. Settler of the Virginia and Massachusetts Bay Colony, Daniel Gookin was an organizing member and writer of *The Commissioners of the United Colonies' English Corporation for Propagating Gospel Among the Indians*, a book about his recollections of attempting to force the Wampanoag to assimilate to English ways. In 1675 Gookin wrote, "Of this disease of consumption sundry of these Indian youths died, that were brought up to school among the English. A hectic fever, issuing in a consumption, is a common and mortal disease among them."⁹⁸ The "Confession of Ephraim" showed dysentery as another ailment among the natives and colonists, "This Spring, in the beginning of the year 1652, the Lord was pleased to afflict sundry of our praying Indians with that grievous disease of the Bloody-Flux, whereof some with great torments in their bowels died..."⁹⁹ The death of "praying Indians" signaled great change for the Wampanoag, for both those that tried to assimilate and those that rebelled were subject to the ravishes of the white man's disease. As the early decades of the sixteenth century continued to pass, the pre-contact Wampanoag ways of utilizing the territory from corn agriculture, hunting, fishing, and shellfish gathering was slowly appearing more Dutch and English in style as part of this forced application of Old World sedentary lifestyle.

Prophecies about the Wampanoag

Published in 1702 *The Ecclesiastical History of New England: Compromising Not Only Religious But Moral and Other Relations*, Cotton Mather described a scene between two shipwrecked men and their interactions with the Wampanoag of Cape Cod. Of those

⁹⁸ Cook, 261.

⁹⁹ Cook, 260.

shipwrecked, only one man survived, and that man with his copy of the New Testament explained certain portions of it to the natives. Angered, the sachem asked, “Has your God so many people, can he slay these?” and the man replied, “Yes, he will bring in strangers to possess your land.” Mather ends the story that the Indians mocked the man for his Christian devotion, yet the natives were later swept away by a plague.¹⁰⁰ Highly fictionalized, this story offered insight on the religious undertones of plague history in the New World. It was a common enough tale that it reappeared in Cotton Mather’s *Magnolia Christi America*. Mather provided much more detail on the relationship between the French and the natives:

Those infidels then blasphemously replied, “God could not kill them”; which blasphemous mistake was confuted by a horrible and unusual plague, whereby they were consumed in such vast multitudes that our first planters found the land almost covered with their unburied carcasses...they that were left alive were smitten into awful and humble regards of the English, by the terrors which the remembrance of the Frenchman’s prophesie had imprinted on them.

Cotton Mather’s writings exemplify how he and many others thought his God was a supreme overlord over the inhabitants of the New World, and that this plague was a gift to the English. In Thomas Dermer’s rendition of the story of the prophecy, he found two Frenchmen alive in 1619 that shared the fateful tale. Phineas Pratt offered a fourth narration of the tale, but his did not mention prophecies or plagues; it only mentioned the European intention of major expansion. In a 1622 court disposition wrote about a discussion between the pine-se-chief man Pecksuet and himself, Pratt claimed the man said, “One of them [the French] had a book he would often read in. We asked him what his book said. He answered, it says, there will a people, like Frenchmen,

¹⁰⁰ Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*, 28.

come into this country and drive you all away, & now we think you are they.”¹⁰¹ Bradford and Winslow, and many other ‘Saints’ from aboard the *Mayflower* looked at their journey as one akin to the Israelite exodus from Egypt, yet here this story recollects a time before 1620 and shows this European desire to purge the lands of its inhabitants or “infidels”. The book, presumably, a bible of sorts, shows this presence of the power of a new religious body in the new land. Even the Puritan minister Cotton Mather reflected on this “prodigious pesitilence” and all of its ambiguities as a religious sign to enforce cultural superiority over the Wampanoag people in the years to come.

Christian Rational on Disease Amongst the Natives

Trader and lawyer, Thomas Morton traveled to Plymouth Colony after his time in Mount Wallaston around the year 1624. Morton looked to Christianity to vindicate the magnitude of sickness among the native populations. He wrote, “The hand of God fell heavily upon them...the place is made so much more fit, for the English Nation inhabit it, and erect in it Temples of the Glory of God.”¹⁰³ Here Christianity is used to imply a cause and effect relationship between non-believers of the faith and the English, as well as displaying this superiority complex between Christian and Wampanoag. Morton, like many others, find the land to be more fit for the English without the presence of the Wampanoag, and that it was divine intervention that brought down plagues in Massachusetts. In a 1647 publishing of *The Daybreaking of the Gospel with the Indians*, Reverend John Eliot referred to the natives as “being but a remnant, the Lord using to show mercy to the remnant; for there be but few that are

¹⁰¹ Phineas Pratt, “A Declaration of the Affairs of the English That First Inhabited New England,” (1662), *Pilgrim Hall Museum Archives*.

¹⁰³ Thomas Morton, “New English Canaan” in *Virgin Soils Revisited* 60, no.4 (Oct. 2003) by David S. Jones, 716.

left alive from the Plague and the Pox, which God sent into those parts.”¹⁰⁴ The massive epidemic of 1616 was viewed by the likes of Eliot as a divine tool for spreading the Gospel in the New World. Nathaniel Morton viewed the plague as divine intervention:

declaration of God’s wonderful works for, by and to his people, in preparing a place for them by driving out the heathen before them...The Lord also so disposed, as aforesaid, much to waste them by a great mortality. Thus God made way for his people, by removing the heathen, and planting them in the land; yet we hope in mercy to some of the posterity of these blind savages, by being a means, at least stepping-stones, for others to come and preach the gospel.¹⁰⁵

According to the English authors of Plimoth and Massachusetts Bay Colony, it was God’s judgment of the “heathen” and “infidels” that caused him to inflict sundry diseases amongst the Wampanoag and neighboring tribal populations as to allow for the growth of the heavily Christian population in coastal Massachusetts.

Conclusion

The depopulation of Native peoples in coastal Massachusetts was a result of contact between disease experienced Old World English and French populations and the Wampanoag; this susceptibility led to the decline of native populations in Massachusetts and to the eventual the success of Plimoth colony. The collapse of native population of New England due to the spread of European diseases prior to 1620 established the foundation for subsequent political, social, and religious development of the English colony of Plimoth, Massachusetts. The epidemic of 1616 made way for the possibility of the usurpation of native lands; by then end of

¹⁰⁴ John Eliot, “The Daybreaking of the Gospel with the Indians”, in *The Bulletin of the John Hopkins Hospital* 20, no.224 (January 1909), 348.

¹⁰⁵ Nathaniel Morton, *New England’s Memorial or a Brief Relation of the Most Remarkable Passages of the Providence of God, Manifested to the Planters of New England, in America*, quoted in “New England’s Memorial” (Boston: Congregational Board of Publication, 1855) 38.

the seventeenth-century, the Wampanoag lived under the jurisdiction of the English colony- an extreme political shift in comparison to the years of first contact. There existed a biological relationship between indigenous populations and Europe that impacted centuries of colonialism. Monocausal explanations of population change should be frowned upon for they ignore the significance of the interactions of social, cultural, environmental, and genetic forces.

The English primary source documents available for scholarly research in the twenty-first century reflect on an incredibly dynamic time period in which New World civilizations were succumbing to the influx of Old World social, political, and cultural customs. The English ideologically accepted the fall of the Wampanoag in power, population, and cultural identity for it made possible the extreme growth and success of English colonies leading to and surpassing the years of King Phillip's War.

Works Cited**Primary Sources:**

- American Colonial Writing*. Edited by Elena Ortells. Diazotec: JPM Edicones, 2010.
- Bradford, William. *Of Plymouth Plantation 1620-1647*. New York: The Modern Library, 1981.
- The English Scholar's Library: Captain John Smith's Works*. Edited by Edward Arber. London: Kings College, 1884.
- Gookin, Daniel. *Historical Accounts of the Doings and Sufferings of the Christian Indians in New England in the Years 1675-1677*. Cambridge: University Press, 1836.
- Indian New England 1524-1674: A Compendium of Eyewitness Accounts of Native American Life*. Edited by Ronald Dale Karr. Pepperell: Branch Line Press, 1999.
- Mather, Cotton. Cotton Mather, *Magnalia Christi or the Ecclesiastical History of New England*. Hartford: Silas Andrus and Sons, 1863.
<https://play.google.com/store/books/details?id=BfPPrhVaUcMC&rdid=book-BfPPrhVaUcMC&rdot=1>
- Mather, Increase. "Heavens Alarm to the World." *Evans Early American Imprint Collection*.
<http://quod.lib.umich.edu/e/evans/N00252.0001.001?rgn=main;view=fulltext>.
- Morton, Nathaniel. *New England's Memorial*. Boston: Congregational Board of Education, 1806. <https://play.google.com/store/books/details?id=jpLsLkKm7mQC&rdid=book-jpLsLkKm7mQC&rdot=1>.
- Pratt, Phineas. "A Declaration of the Affairs of the English People That First Inhabited New England." *Pilgrim Hall Museum*.
[http://www.pilgrimhallmuseum.org/pdf/Phineas Pratt Narrative.pdf](http://www.pilgrimhallmuseum.org/pdf/Phineas_Pratt_Narrative.pdf).
- Philbrick, Thomas. *Plymouth Plantation: Selections from the Narratives of William Bradford and Edward Winslow*. Allentown: R.R. Donnelley & Sons Company, 2009.
- Rowlandson, Mary. "Narrative of the Captivity and Restoration of Mrs. Mary Rowlandson" In *American Colonial Writing*, edited by Elena Ortells, 105-155. Diazotec: JPM Edicones, 2010.
- Smith, John. "The General History of Virginia, New England, and the Summer Isles." In *American Colonial Writing*, edited by Elena Ortells. Diazotec, 7-25. Diazotec: JPM Edicones, 2010.
- Winslow, Edward. *Mourt's Relation: A Journey of the Pilgrims at Plymouth*. Edited by Dwight B. Heath. Bedford: Applewood Books, 1963.

Secondary Sources:

- Anderson, Virginia DeJohn. "Animals into the Wilderness: The Development of Livestock Husbandry in the Seventeenth-Century Chesapeake." *Environmental History and the American South*, edited by Paul Sutter and Christopher Manganiello, 25-60. Athens: University of Georgia Press, 2009.
- Cohn, Samuel. *The Black Death Transformed: Plague Culture in Early Renaissance Europe*. New York: Oxford University Press, 2003.
- Cook F. Sherburne. "The Significance of Disease of the New England Indian." In *Biological Consequences of the European Expansion 1450-1800*, edited by Kenneth Kiple and Stephen Beck, 251- 274. Aldershot: Ashgate Publishing Limited, 1997.
- Crohn K Samuel Jr. *The Black Death Transformed: Disease and Culture in Early Renaissance Europe*. New York: Arnold and Oxford University Press, 2003.
- Cronan, William. *Changes in the Land: Indians, Colonists, and the Ecology of New England*. New York: Hill and Wang, 2003.
- Crosby, Alfred. *The Columbian Exchange: Biological and Cultural Consequences of 1492*. Wesport: Praeger Publishing, 2003.
- Crosby, Alfred. *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*. New York: Cambridge University Press, 2004.
- Drake, Samuel. *Biography and History of Indians of North American From its First Discovery*. Boston: Sanborn, Cater & Bazin, 1857.
- Diamond, Jared. *Guns, Germs, and Steel*. New York: W.W. Norton and Company, 1999.
- Johnson, Madeleine. "The Pilgrims Should Have Been Thankful for a Spirochete." *Medical Examiner*. http://www.slate.com/articles/health_and_science/medical_examiner/2012/11/1/eptospirosis_and_pilgrims_the_wampanoag_may_have_been_killed_off_by_an.single.html.
- Jones, David. "Virgin Soils Revisited." *William and Mary Quarterly* 60, no. 4 (Oct., 2003): 703-742. <http://www.jstor.org/stable/3491697> (accessed June 12th, 2015).
- Mann, Charles. *1491: New Revelations of the Americas Before Columbus*. 2d. ed. New York: Random House Vintage Books, 2011.
- Marr, John and John T. Cathey, "New Hypothesis for Cause of Epidemic among Native Americans, New England, 1616–1619." *Emerging Infectious Diseases* 16, no. 2 (Feb., 2010): http://wwwnc.cdc.gov/eid/article/16/2/09-0276_article (accessed June 12th, 2015).

- McNeill, William. *Plagues and Peoples*. New York: Anchor Books Doubleday, 1998.
- Melville, Elinor. *A Plague of Sheep: Environmental consequences of the conquest of Mexico*. New York: Cambridge University Press, 1997.
- Philbrick, Nathaniel. *Mayflower: A Story of Courage, Community, and War*. E-book. New York: Penguin Books, 2007.
- Russell, Howard. *Indian New England Before the Mayflower*. Hanover: University Press of New England, 1980.
- Williams, Herbert. "The Epidemic of the Indians of New England, 1616-1620, With Remarks on Native American Infections." *Bulletin of the John Hopkins Hospital* 20, no. 214 (1909). <https://play.google.com/books/reader?id=CmtNAAAAYAAJ&printsec=frontcover&output=reader&hl=en&pg=GBS.PR8>