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The Effects of the Nat Turner Slave Revolt on the Health and Welfare of 19th-Century Slaves in Southeastern Virginia

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THE EFFECTS OF THE NAT TURNER SLAVE REVOLT ON THE HEALTH AND WELFARE OF 19$_{TH}$-CENTURY SLAVES IN SOUTHEASTERN VIRGINIA

by

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ABSTRACT

THE EFFECTS OF THE NAT TURNER SLAVE REVOLT ON THE HEALTH AND WELFARE OF 19_{TH}-CENTURY SLAVESIN SOUTHEASTERN VIRGINIA

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The Nat Turner Slave Revolt stands as a major turning point in the history of American slavery and represents a fundamental shift in the master slave relationship. This event shattered the previous paternalistic view and caused a fundamental reorganization of slave life. Included in this reorganization was a shift in the subsistence practice, moving away from morenutritious food grown by the slaves themselves to poor quality rations provided by the masters. This change in subsistence practices dealt a serious blow to the nutritional health of those living in the area surrounding the revolt.

By examining stature recorded in the County Registers of Free Negros and Mulattoes, it is possible to quantify the effect of this loss of nutrition and quantitatively compare those born and raised before the revolt to those who were born and raised in the post-Nat Turner world. Records were collected from five southeastern Virginia counties and are divided into pre- and post- Nat Turner groups. These groups were statistically analyzed using ANOVA means testing.

The males born after the revolt show a strongly statistically significant drop in stature averaging 65.8 inches (167 cm), or 1.68 inches (4.3 cm) shorter than their pre- Nat Turner counterparts who stood at 67.4 inches (171 cm). Females showed no drop in stature and remained consistent at 63 inches (160 cm). This may be due to canalization as other studies also found this average stature under similar circumstances. It is also

possible that this is due to cultural practices and biases that allowed better nutrition – and therefore increased catch-up growth – for males. While the results are mixed, they are not surprising based on what is known from previous research, which has found strong evidence of female resistance to nutritional change.

While other studies have not found results that match this study, it is important to recognize that other studies have not asked this same question. Those studies where data disagree with this one were intended to ask significantly different questions and used different sample sets. This study helps to shed light on one of the great events in slave history through the lives of those who felt it on the ground and whose lives were most affected.

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CHAPTER I

INTRODUCTION

In the very early morning hours of August 22, 1831 a group of eight slaves led by Nat Turner (1800-1831), initially armed with little more than farming implements, began a brief insurrection that would shock the country and have enduring and far reaching consequences. The revolt itself was short lived, lasting little more than a day, involving no more than 60 to 80 active rebels, and posing no threat to anyone outside of Southampton County, Virginia. Despite the limited nature of this uprising, it had wider ranging implications that struck a chord of fear that larger earlier rebellions had failed to do. In a Federal Writers Project interview, former slave Fannie Berry of Petersburg, VA recalled the panic after the Nat Turner revolt as one her first memories, saying, "Back 'fore the sixties, I can 'member my Mistress, Miss Sara Ann, coming' to de window an' hollerin', 'De niggers is arisin'! De niggers is arisin'! De niggers is killin' all the White folks, killin' all de babies in de cradle!' It must have been Nat Turner's Insurrection" (Works Progress Administration, 1936: p. 1). Turner, guided by heavenly visions and divine voices, believed that it was his destiny to bring freedom through revolt (Greenberg, 2003). He believed that this act of defiance would gain momentum and lead to full scale revolution, and while it did gain momentum, its lack of focus and organization doomed it almost from the outset (Parramore, 2003). The major consequences of the revolt were not to inspire other revolutionaries and bring freedom as Turner had hoped, but rather it may have had the effect of making slaves' lives more difficult.

There is a long history of slave revolts in this country from our earliest colonial days. Some of the larger revolts, such as the 1811 revolt in New Orleans, had nearly 500 participants, some of whom were free (Rasmussen, 2011). This is important because while there were other slave revolts both before and after Nat Turner's revolt, none of the previous revolts had the same level of impact, and the later revolts –John Brown's included – had effects that would be short lived due to the onset of the Civil War and the even greater changes that ensued. The consequences of Turner's revolt and the abject fear that it inspired in the White populous was something that had not been seen previously (Cromwell, 1920; Egerton, 2003; Higgenson, 1889).

The obvious effects of a slave rebellion are crackdowns on slaves such as the widespread violent reprisals that led to hundreds of deaths of both slaves and free people of color following the Nat Turner Revolt (Higginson, 1889), but there may be some less obvious results. The Nat Turner Revolt may have led to dramatic long-term effects on the health of slaves. This was because the small freedoms that the slaves had previously enjoyed were taken away. Early writings refer, often off-handedly, to slaves being allowed to walk about in town freely and gather at will (Higgenson, 1889), but as Cromwell (1920) discusses, most states passed laws preventing slave gatherings and even enacted new strong laws against free people of color.

These strict new laws had consequenceson many aspects of slave life, especially their ability to carry out subsistence activities independent of the master. These consequences included loss of the ability to carry guns for hunting and keep tools for farming and, even more importantly, the banning of slaves from carrying on commerce and earning their own money (Guild, 1969). This study will explore the effects of this

change, especially the loss of the ability to carry out subsistence practices independent of those of the masters. These restrictions had the potential to make life for slaves even more difficult by forcing slaves to rely almost entirely on the meager rations provided to them.

This added stress to the slave's nutritional health could manifest in several ways, the easiest of which to measure is stature. Importantly, this study focuses on the Virginia counties that surround the site of the Nat Turner rebellion and will be geographically specific. The primary research question is whether or not there was a drop in slave stature due to greater nutritional stress or were the slaves able to, by some means, compensate for this loss – the former being more likely than the latter. Stature will be assessed using living stature records taken from County Registers of Free Negroes and Mulattos from the counties of Southampton, Norfolk, Sussex, and Chesapeake. These data will be divided into two groups – one for those having grown up pre-rebellion and one post-rebellion – and statistically analyzed for differences. It is believed that there will be a loss in stature, although it is unclear whether that loss will constitute a statistically significant one.

Hypothesis

In short, this study hypothesizes that the loss of freedoms incurred by the slaves in the wake of the Nat Turner revolt would reduce their nutritional intake so as to have a noticeable effect on the health of those living nearby. Those slaves' decline in nutrition would be expected to result in a corresponding decline in the stature of the individuals. The post-Nat Turner group should have a lower mean stature than the group born and raised in the pre-Nat Turner world. Additionally, it is likely that the second group would

display a greater range of heights than the earlier group as well as a greater standard deviation. This would indicate a greater disparity between the relative have- and have-nots of slave society. The relative disparities in health will be examined by looking at the range – the difference between the tallest and the shortest individuals in each group – as well as the standard deviations – which examines, on average, how far away each individual is from the mean. While it is unclear if a sample of this size can produce statistically significant results, it is overwhelmingly likely that the results will be at least noticeable in all of the categories tested. Additionally, it is difficult to predict the outcome as this study is the first to ask this question and any results positive or negative will shed new light on this subject.

CHAPTER II

SLAVERY AND HEALTH IN 19th-CENTURY VIRGINIA

The 19_{th} century was among the most tumultuous times in American history and was so in no small part because of the issue of slavery. From questions of slavery's expansion and sectional tensions to slavery's bloody end, this one issue so dominated the American political and social landscape as to still reverberate today. Only by examining the idea of slavery, in particular as it relates to Virginia, can we begin to place the events of the Nat Turner Revolt into their proper context.

Slavery In America

In order to understand the revolt led by Nat Turner in 1831, it is important to examine the history of slave revolts and the context within which the Nat Turner Revolt took place as both Higginson (1889) and Egerton (2003) have done. Additionally, the institution of slavery in the New World as a whole and the institution's history in America must be taken into account. It is also important to examine slavery and slave revolts in America and the greater Americas in part to see the differences.

Slavery began in the New World, includingwhat would become the United States, as soon as Europeans arrived to colonize. Slaves were brought by the British, Spanish, Portuguese, Dutch, and French to populate and develop their holdings.[1] In other words, if a European power wanted to establish New World colonies, especially in the Caribbean, they acquired slaves to do the work. Up until the about 1820, four out of every five people who came to the Americas were African slaves, most of them going to

[1] It was necessary to bring labor from Africa because between the time of contact and colonization, between 90 and 95% of the indigenous population of the New World was wiped out by disease and social unrest (Berlin, 2000). This is not to say that there were not attempts to enslave Native Americans; however, by the early 1700's Virginia had abolished Native American slavery in favor of African slaves.

South America and the Caribbean. For every slave that went to one of Britain's North American holdings, approximately 12 went to Brazil. The work for slaves throughout the New World was exceedingly brutal with between one third and one half of the slaves brought to Brazil dying within the first five years (Mann & Hecht, 2012). Rasmussen (2011, p. 41) quotes the master of the Gallifet Plantation on Saint Dominigue (modern day Haiti), saying that he was able to produce so much sugar by "consuming men and animals." As will be discussed later, this sheer volume of slaves being brought to South America and the Caribbean may account for the more frequent and more successful nature of the slave revolts in these regions as could the wholesale movement of societies (Berlin, 2000).

Slavery in Virginia

Slavery in Virginia dates back almost as far as Virginia itself. The earliest known African slaves to be brought to the Old Dominion arrived in 1619 on a Dutch trading vessel. For the next nearly forty years the level of importation of slaves was fairly moderate with most arriving in the colony individually as servants. By 1625 there were a mere 23 Blacks (slave and indentured), and by 1650 the number had grown to the still modest number of 300. This increase in population was due to both the occasional importation and births (Ballagh, 1902; Bodenhorn, 2002).

Slavery in Virginia began to change in 1662 with the establishment of a company specifically for the importation of slaves. It took a couple of years for the slave trade to really pick up, but between 1664 and 1671 the Virginia slave trade took form. By the 1680s the number of slaves was rapidly overtaking that of servants in the ranks of Virginia's unfree peoples. It was during the 1700s that slavery truly boomed with 12,000

recorded in 1708, some 23,000 in 1715, and by 1756 more than 120,000. It was also in 1715 that the practice of Native American slavery ended. The number of slaves increased not just in absolute numbers, but also as a percentage of the population (Ballagh, 1902). By 1790, the first year in which there was a census, slaves represented nearly 40% of the state's total population (Historical Census Browser, 2004).

The laws of this time show the level to which slavery was integrated into the culture of Virginia. Over time there was a steady increase in laws and duties intended to discourage the importation of slaves; these efforts culminated in the first law passed by the newly sovereign Commonwealth of Virginia in 1778, which was a ban on the importation of slaves (Guild, 1969). In fact Virginia has so many slaves that by 1831 Virginia exported as many as 600 slaves a year to other states through the still legal interstate slave trade (Ballagh, 1902).

The slave trade was not the only element of slavery that needed to be addressed through new laws. The place of children of mixed heritage also had to be considered. Holding true to English law, the status of a child was determined by the legal status of the mother. What this meant was that the child of a Black slave and a free White woman (often an indentured servant) would therefore be free. This law was amended to ensure that the children of slaves would themselves remain enslaved for 25 years at which point they were to be freed (Bodenhorn, 1999, 2002). Later the law was amended so that so called octoroons, or those with only 1/8of their ancestry being Black were no longer considered Black and were therefore free (Guild, 1969). This increasing strength of laws against those of mixed heritage ended with the one-drop rule. The one-drop rule stated that if an individual could trace back any African ancestry – therefore having even one

drop of Black blood – they were considered Black (Auerbach 2013; Bodenhorn, 1999, 2002).

By the time of the Nat Turner Revolt in 1831, there were 469,757 slaves out of a total population of 1,211,405 for the state. This was by far the largest number of slaves in any state, beating out South Carolina by nearly 150,000. Interestingly, while Virginia has the largest number of slaves in absolute terms, Alabama, Georgia, Louisiana, Mississippi, North Carolina, and South Carolina (which had the highest percentage) all had higher percentages of their populations in bondage (Historical Census Browser, 2004). As with the rest of the country, slavery in Virginia died in Virginia with Lee's surrender at Appomattox in 1865.

Slave Revolts

Slave revolts were ubiquitous in the New World and, as Genovese (1979) argues, a logical assertion of the enslaved's basic human dignity. From the very beginnings of the institution, those subjected to it were inclined to revolt and in some cases (primarily in the Caribbean and South America), these revolts ended in independent free communities typically known as maroons. Although two of the most famous instances were the maroons of Jamaica and the maroons of Suriname (Higginson, 1889), the largest of these maroon communities were, and some still are, located in Brazil (Mann & Hecht, 2012). Many of the South American maroon communities were built upon existing ties from Africa. Mann and Hecht (2012) recount the story of the maroon community of Palmares which was reported to be founded by an Angolan princess soon after she was captured in 1605 and shipped to Brazil. Importantly, she was not captured by the Portuguese, but rather by other Africans in one of the Congolese Wars and sold or traded to the

Portuguese. The community grew to an estimated population of 30,000 Black, Indian, and European individuals living entirely outside the jurisdiction of the Portuguese Crown and local Governor. Palmares fought several direct conflicts with the Portuguese, but remained independent until the Portuguese were finally able break the colony with a prolonged siege in 1694.

Although South America and the Caribbean faced a near constant stream of revolt from enslaved populations, North America did not have the same problems for most of its history. This is not to say that there were not revolts, as will be discussed later, but that they did not happen with the same regularity as in other areas. Among the early speculations for the reason behind the low number of slave revolts was Phillip's (1918) assertion that slavery was a benign institution in the United States. This idea was by no means isolated. The general idea of North American slavery as being if not benevolent then at least benign was and still is pervasive, although not among historians. On a visit to any number of antebellum plantation homes today, you will still encounter the idea of the faithful servant and loyal mammy in the moonlight and magnolias sense.

Conversely, Stanley Elkins (1959) claimed in *Slavery: A Problem in American Institutional and Intellectual Life* that American slaves did not have the same history of revolt as Latin American slaves because American slavery was less personal and more brutal and dehumanizing. Furthermore, he argues that the Latin American slavery allowed for more freedom, while North American slavery kept the slaves in a child-like state. Working against this notion is that slaves were often trained in skilled labor (both agricultural and domestic, such as cooking and barbering) and were also often given the freedom to meet in groups, visit spouses and family members on other plantations, attend

– and even hold – independent religious services (Greenberg, 2003), and use their skilled labor on other plantation and in town (Berlin, 2000).

Both of these explanations fail to hold up under scrutiny, and both take a relatively racist position with slaves being either best suited to servitude – as Phillips's (1918) suggestion of a benign institution would have us believe – or too child-like to be unhappy with their circumstances – as Elkins (1959) would claim. More modern scholars such Genovese (1979) and Berlin (2000) take a much more practical view. Genovese (1979) argues the lower rate of insurrection in British North America may be due to the fact that the odds of success were more strongly against North American slaves. The population density of slaves was dramatically less than in the Caribbean and South America, which made it more difficult to raise an army due to numbers and distance. In Virginia this was especially true due to the requirements that tobacco farming have dispersed labor force unlike the denser and more revolt prone sugar plantations of Louisiana. In South America and the Caribbean slaves represented a majority and in some cases a 10 or 12 to one majority whereas only two states in the U.S. had majority slave populations. Additionally, as many have suggested (see Rasmussen, 2011; Thornton 2005; Wood, 2005), where people were born may have also played a role. The United States, and what would eventually become the United States, had a much more creolized population than those of its southern neighbors (Berlin, 2000; Genovese, 1979). Those who were born in the New World were less likely to revolt knowing nothing of any other life as well as the fact that, unlike many imported Africans, they were not soldiers defeated in battle and sold into slavery (Berlin, 2000; Genovese, 1979; Rasmussen, 2011; Thornton, 2005).

One further reason for fewer slave revolts in the United States may be because, as previously mentioned, for every slave that went to British North America, 12 went to Brazil. This simple fact that there were far more African slaves in Latin America and entire societies were relocated may account for some of the differences.The other reason may be that in the large numbers of slaves going to South America were whole societies who had been defeated in war were enslaved, sold to Europeans, and shipped to the New World (Mann & Hecht, 2012; Thornton, 2005). They were thus able to retain their culture, history, and separateness and strive to rebuild their world in the New World. This idea of fewer revolts due to a more benevolent and refined slavery was not reserved to the way Americans – including colonial Americans – viewed themselves in relation to other countries, but the way those in various states and colonies viewed themselves in relation to other states and colonies. This idea will be addressed in the next section.

Slave Revolts in the South

Nat Turner's Insurrection in Southampton was not the first slave revolt with which the South had dealt, nor would it be the last. From Stono, South Carolina to John Brown's stand-off at Harper's Ferry, slave revolts in the U.S. South were distinct from their Latin American counterparts in many ways. There were also differences among slave revolts that took place within America since each revolt was a product of its particular time and must be interpreted within the social and political context in which it took place, butthey can also to some degree inform one another.

The most important slave revolt in relation to the Southampton Uprising is likely the Stono River Revolt. This revolt took place in 1739 in Stono, South Carolina. As with the Turner Revolt, not only are many of the exact facts surrounding the revolt fuzzy, but

it also took place in the context of larger regional tension (Smith, 2005). The Stono Revolt was in many ways a turning point for slavery in South Carolina, leaving more than 60 dead, including 25 slaves, and ushering in sweeping new laws (Wood, 2005), just as happened after the Nat Turner Revolt (Guild, 1969).

The Stono River Revolt was planned in secret among a few slaves, who likely were veterans of the Kongo Civil Wars[2] andwas carried out with precision and preparation on September 9, 1739 (Thornton, 2005). On that Sunday morning the group of slaves heralded by drums and banners set out on a steady march south from plantation to plantation, killing and burning their way towards Georgia and then to the Spanish colony of Florida where they could be free. One week and 30 miles later the revolt came to an end, although it would be another three years before the last of the leaders was captured. The militia force which stopped the Stono rebels was made up of local volunteer Whites who spent most of the week drunk and amassed a 90£ alcohol tab which they charged to the colonial government.Despite the clear preparation, the Stono rebels were still forced to conscript reluctant slaves from the plantations they went to. Furthermore, the date for their revolt was chosen with great purpose as it was mere weeks before the implementation of the Security Act, requiring men to carry guns to church on Sundays, went into effect (Wood, 2005). This revolt can easily be contrasted to the Nat Turner Revolt with its execution although the responses were in many ways similar.

The Stono revolt took place in the context of a larger regional conflict. The Stono Revolt happened during a time of high tensions between the British – including their American colonies – and the Spanish (Smith, 2005), just as the Nat Turner Revolt was

[2] It is likely that the participants of the 1811 slave revolt in New Orleans where nearly 500 slaves may have participated were also veterans of the Kongo Civil Wars (Rasmussen, 2011). This is strengthened by the fact that tactics described in both revolts show a fair amount of similarity.

carried out during the heat of the Sectional Crisis in the United States (Masur, 2003) and the Virginia Slavery Debates. The British and Spanish tensions were longstanding and imperial in nature, but many of the American colonialists had the much more tangible complaint that slaves were running to freedom in Spanish Florida. There were even rumors (likely true) that Spain was encouraging slaves to not just flee to Florida but may have been attempting to foment insurrection among slaves. Additionally, the Stono revolt took place as a time when newspapers were full of accounts of slave revolts, including in the British colony of Jamaica (Wood, 2005). All of these factors combined to create a very tense situation ripe for conflict.

After the Stono Rebellion, the Security Act went into effect, as was already planned, and was uniformly enforced. Those who may have thought such an act was unnecessary quickly saw the wisdom. In addition, moves were made to correct the demographic imbalance in the colony. A heavy duty was placed on the importation of slaves to the colony as well as a law was passed requiring one White for every ten slaves (Wood, 2005). While the lessons were heeded at the time, it seems that by the time of the Southampton Insurrection many had been forgotten for several reasons. Not only did the revolt take place 90 years before Turner's, in what was at that time a different country, but also Virginia slaveholders believed themselves to be superior to those of the Deep South (Freehling, 1982). Much in the same way that American slaveholders convinced themselves that they were more benevolent and paternalistic than their Caribbean and South American counterparts (Phillips, 1918; Thornton, 2005), slaveholders in Virginia thought that they represented the pinnacle of the White civilizing force and that slave

revolts could never take place there. This air of benevolence was shattered by the Turner Revolt and made the crumbling of the façade even more devastating.

Nat Turner's Brief Revolt

The Inspiration and Its Context

To call Nat Turner's Revolt a rebellion, or a revolution, or even a revolt, may be a bit of an overstatement. The event itself lasted just over 24 hours, although he would not be caught for another six weeks, no ground was ever held by the rebels, and the preparation[3] for the insurrection was limited at best (Greenberg, 2003; Higgenson, 1889). Although the rebellion itself was highly confined, the importance cannot be overstated.

The revolt took place not just in the context of the Sectional Crisis (Masur, 2003), but also within the context of the Virginia Slavery Debates of 1831-1832. It was at this time, that The Commonwealth of Virginia was having a debate within itself on the rightness of slavery. Just as the slave debates drew geographic lines within Virginia. The more populous and slave heavy tidewater and central Virginia being in favor of continuing the practice, while the western and mountainous portions believed it allowed power to be more strongly concentrated among planter elites (Freehling, 1982).

There have been many claims made about Nat Turner's reason for rebelling. Specifically, speculation has gone into what events and ideas would have caused him to take up arms and revolt. At the time, many, including Virginia Governor John Floyd, argued that Turner had been inspired to rebel by the work of Radical Republicans and Northern abolitionists (Aptheker, 1937). This claim of course must be taken in the

[3] At this point I would like to make a distinction between planning and preparation. By preparation I mean actual activities to lay the groundwork for and move toward accomplishing their goal. I contrast this with planning which is simply discussing what you would like to do. It is possible to spend a significant amount of time planning and still be wildly unprepared.

context of the Sectional Crisis that was gripping America and would lead to the Civil War (Masur, 2003). Despite the ease of blaming Northern agitators, which fit neatly into the established narrative and promoted the worldview of a lifestyle under attack (which in many ways it was), there is no evidence that Nat Turner ever had any contact with abolitionist pamphlets (Aptheker, 1937). In his confessions, Nat Turner did not mention exposure to abolitionist literature (Gray, 1832), although there were abolitionist tracts and pamphlets circulating in the area at this time. They had been smuggled in in the hopes of sparking change. These pamphlets prompted the passage of the April 7, 1831 law banning the teaching of slaves or free Blacks to read. While they did not actually inspire Turner, the literature would have been fresh in the minds of Virginians when Turner set upon his bloody business (Freehling, 1982). Turner did have notions that his rebellion would spread like a fire, feeling inspired to act by much higher powers (Gray, 1832).

A great deal is made on the fact that Nat Turner was moved to rebellion by divine revelations, but this must be taken in the context of the time and the prevailing religious ideas. Nat Turner claimed to have been inspired by nine separate revelations in whichangels and visions appeared before him, often while in the fields, and compelled him to act[4] (Aptheker, 1937; Gray, 1832; Greenberg, 2003). To the modern reader this idea is outside of the mainstream and supports the portrayals of Turner as a "wild fanatical Baptist preacher" as Drewery (1900, p. 26) would argue, but it is important to take this in the context of the Second Great Awakening. At this time, the rationalism of the Enlightenment that guided many of the Founding Fathers was giving way to a more

[4] In Greenberg's (2003) discussion of what happened to the body of Turner, he mentions that some who claim to have handled the skull noted that in places it was as much as 0.75 inches thick. This pathology is not noted in many other places but could provide a moment for possible retrodiagnosis. This porotic hyperostosis could be an example of some form of anemia (Ortner, 2003).

ecstatic and emotional religion. It is during the Second Great Awakening that American Protestantism shifted from the Calvinist view of hellfire and damnation to a greater emphasis on salvation and rebirth. Furthermore, the evangelical movement also largely rejected the Calvinist notion of predestination in favor of the concept of universalism. This meant that heaven was no longer the exclusive domain of a few who had already been selected, but rather was open to anyone who accepted God and salvation. It is from this time period that we get much of the modern evangelical movement's strong emphasis on a personal and intimate connection with God, which forms the basis of Southern Baptism as a whole (Scott, 2000).

Turner was himself a part of this world and was baptized, reportedly by a White preacher, and born again (Egerton, 2003). Because of the emphasis on a personal connection with God, the idea of an individual receiving personal revelation was by no means considered outside of the mainstream. In meetings and revivals people opened themselves up to visions and to having the Holy Spirit enter them to give them divine revelation (Scott, 2000). The idea of a very personal connection with God made the acceptance of Nat Turner's revelations easy for the other slaves. The idea would have been less palatable to local Whites at the time, but that is more because they were confident that God supported their peculiar institution than the fact that it was divine revelation.

The Act

The plans for the revolt had been discussed for several weeks prior to the revolt by Nat Turner and his fellow rebels. The rebels – who lived on various plantations in the area – had often met to picnic and talk at a location known as Cabin Pond in

Southampton County, Virginia, not far from the home of Joseph Travis, where Turner was a slave. For months the talk had turned to insurrection and plans had been made. On the night of August 21, 1831, the conspirators finished their final meeting at about 10:30 pm. They had decided to act. They intended to begin their revolt by killing the Travis family while they slept and then movefrom plantation to plantation killing every White person they could find. The idea was to gain momentum both in persons and materials as they traveled and to work their way to the county seat of Jerusalem. In Jerusalem they would be able to take the local armory and hold the town. If they failed, the plan was to proceed southeast to the Dismal Swamp where they could hide out for an extended area of time and possibly even create a free society like the maroons or the Gullah (Aptheker, 1937; Gray, 1832; Higgenson, 1889; Parramore, 2003).

This was the totality of the planning in which the insurrectionists had engaged. No plans for which plantations should be hit first had been drawn up, and no contact had been made at these plantations; they simply planned on setting out and hoping people joined them. This complete lack of planning both doomed them and may have possibly allowed the revolt to take place. In previous revolts, notably the highly planned Denmark Vessey revolt, the conspiracies were detected and quashed before the revolts ever took place due to the fact that many people were involved in the planning and had information (Greenberg, 2003). On the other hand, the utter lack of preparation displayed from the very beginning of the Nat Turner also doomed it to failure.

Soon after the final planning meeting concluded and action had been decided upon, the band set out for the Travis Plantation. The first act for the group once they arrived was not to acquire supplies, but rather they headed straight for the Travis' cider presses

and drank until approximately 3 am (Parramore, 2003). Once they had sufficiently fortified themselves for the grisly work ahead of them, they sneaked into the house with a ladder and killed the four sleeping inhabitants. The killing continued as they moved from farm to farm, but they faced several setbacks. When the rebels arrived at Wiley Francis' farm, they found that the Francis family had been warned and the family and slaves stood armed and ready to fight them if they attacked. This was not the only act of slaves resisting Turner. At the Whitehead home, Nat's deputy, Will, found and killed seven leaving only a daughter who a slave had hidden and taken to safety. Additionally, at the Whitehead home all but two of the slaves dissolved into the woods and the two who were forced into joining the rebellion escaped the first chance that they got.

By mid-afternoon on Monday August, 22, the whole of Southampton County was on high alert and although gripped by fear, the residents had organized a resistance that was preparing for a counterassault on the insurrectionists. It was soon thereafter – while Turner and his band were making their way toward Jerusalem – that they met their first resistance in the form of Captain Alexander Pete and a group of local recruits armed with small fowling guns. Initially, the rebels were able to mount a defense to the Whites counterassault and repel the force, but this success did not last long. Soon after the gunfire broke out a second group of Whites arrived to bolster the first group; Turner's rebels quickly found themselves outgunned and were forced to beat a hasty retreat. By the time the morning of August 23 arrived, the rebels were reduced to no more than twenty, and most could see that the end was near. The rebels made their final stand that day at the Blunt House and disbanded; many fled into the woods or returned to their home plantations (Parramore, 2003). It is difficult to put a date to the end of the revolt.

The insurrectionists never held a formal surrender and Nat Turner was not captured until October 30, but for all intents and purposes, the revolt ended at the Blunt house. By the end of August 23, between 57 and 60 Whites (all residents of Southampton County) had been killed by Nat Turner's band (Greenberg, 2003), and no fewer than 38 Blacks had been killed by the local militias (Parramore, 2003). Some of the Blacks had been involved in the revolt, while others simply had the misfortune of being Black and in Suffolk County (Higgenson, 1889).

The Aftermath of Insurrection

The aftermath of the Nat Turner Rebellion was felt far beyond Suffolk County. Every slave holding state was affected and rumors spread like wildfire of vast conspiracies and approaching slave armies. The stories were printed and reprinted and etchings, such as the one below, were published across the country. The governments of various municipalities did what they could to stop these rumors and put the fears and wild speculation to rest, but with little success. For the first time, White America was shaken awake and the notions of slavery as benevolent and slaves as docile were cast aside and never recovered. As this study focuses on Virginia, the changes made to slave administration will be examined in detail.

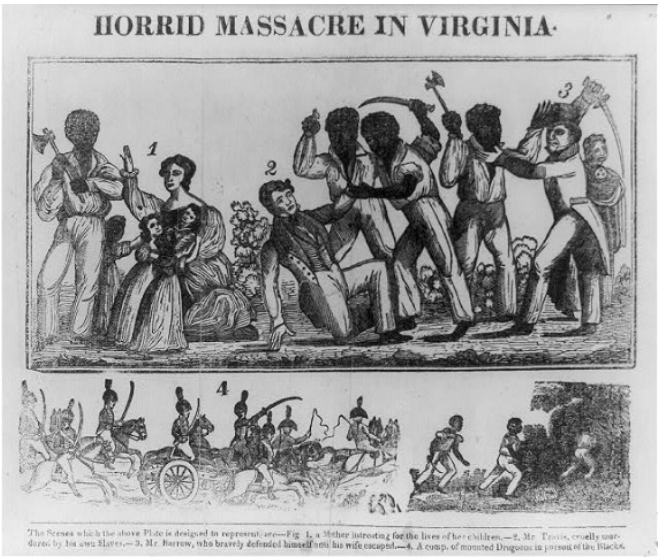

Figure 1. "Horrid Massacre in Virginia, Nat Turner's Rebellion," by Samuel Warner, In *Authentic and Impartial Narrative of the Tragical Scene*. p. 1. 1831. Public Domain. Accession F232.S7 W2, Library of Virginia, Richmond, Virginia.

It is important not to focus too heavily on the specific laws that governed slaves as, on plantations, away from the prying eyes of the law, the enforcement of these rules could be spotty. This being said, laws provide a glimpse into the zeitgeist of a people by exposing the fears, concerns, and societal norms that they believed to be important enough to codify into law. Fears and concerns are especially laid bare when examining reactive laws put in place after an event or to combat a specific epidemic threat – real or perceived. This is certainly true for the history of Virginia's Black Codes. Throughout the history of Virginia, laws had been required to clarify the place of slaves, the place of those of mixed ancestry, and the place of the state's ever growing population of free people of color. Guild's (1969) *Black Laws of Virginia*shows a trend of increasing regulation and restrictions on both slaves and free people of color, butthey also clarified and codified that free people of color were entitled to certain rights – primarily in terms of when they were granted freedom.

Even in the lead up to the Nat Turner revolt, the increasing restrictions could be seen in legislationsuch as the April 1831 law which decreed “that all meetings of free negroes or mulattoes, at any school-house, church, meeting-house or other place for teaching them reading or writing, either in the day or night, under whatsoever pretext, shall be deemed and considered as an unlawful assembly” with a punishment “not exceeding twenty lashes.” Additionally, it stated that “if any White person or persons assemble with free negroes or mulattoes… for the purpose of instructing such free negroes or mulattoes to read or write, such person or persons shall, on conviction thereof, be fined in a sum not exceeding fifty dollars, and moreover may be imprisoned at the discretion of a jury, not exceeding two months.” This law went so far as to regulate how Whites were allowed to interact with Blacks both free and in bondage (Guild, 1969, p. 50).

The laws put into place in the nearly 200 years of slavery before the Nat Turner Revolt show a slow and steady increase of restrictions and clarifications meant to ensure that Blacks were kept in a certain social and economic position. With the failure of the Southampton Insurrection, what had been a steady trickle became a sudden rush, and in 1832 the Virginia Legislature passed 1832 Chapter XXII. This act “amending an act entitled ‘an act reducing in one the several acts concerning slaves, free Negros, and mulattos and for other purposes,” did just that and added on to previous laws regarding Blacks. This highly restrictive law states that

> It is enacted that no slave, free Negro or mulatto shall preach, or hold any meeting for religious purposes either day or night.... Slaves and free Negros who attend and religious meeting conducted by any free slave or Negro preacher,

> ordained or otherwise, and slaves who attend any preaching at night, although conducted by a white minister, without the permission of the master, shall be punished….
>
> The slaves of any one master may assemble together for religious devotion,
>
> No free Negro shall hereafter be capable of acquiring ownership, except by descent, to any slave other than his or her husband, wife, or children.
>
> Free Negros are not to carry firelocks of any kind…. Permission heretofore granted authorizing justices to permit slaves and free Negros to carry firearms in some cases is repealed.
>
> Slaves and free Negros are not permitted to sell or give away ardent or spiritous liquor….
>
> If a slave or free Negro write or print anything advising persons of color to commit insurrection or rebellion, he is to be punished by thirty-nine lashes; if the person offending be white, he is to be fined from $10.00 to $100.00.
>
> Riots and unlawful assembly, trespasses and seditious speeches by free Negros shall hereafter be punished with stripes as directed for slaves.
>
> If any white person or free Negro shall knowingly receive from any slave or free Negro any stolen goods, he shall be punished in the same manner as if he had actually stolen the goods.
>
> Free Negros hereafter shall be tried and punished for felony in the same manner as slaves…. (Guild, 1969, p. 54)

This massive set of limitations on the behavior of both slaves and free Blacks was meant to strike at the perceived causes of the Nat Turner uprising (Guild, 1969). More

importantly though, these laws display a loss of the trust that the white masters had in their slaves and a breakdown in the paternalistic worldview of slaves as happy and submissive and slavery as a benevolent, if peculiar, institution.

Reactive laws like those put in place after the Nat Turner Revolt are important less because of how the laws themselves would have affected plantation administration and more because they display the way people believed they should be reacting to the revolt and what measures they believed they should be taking. The 1832 laws help to reflectthe prevailing mentality where all Blacks – slave and free – were to be feared. These laws were meant to directly target not just the perceived causes of the Nat Turner Revolt, such as liquor and Black preachers, but also those things which had been more persistent problems such as slave theft. It is not just these laws specifically, but rather the larger environment that spawned these laws that would have made life more difficult for slave and free Black alike. These changes would have had an impact on the ways that slaves provided for themselves and supplemented the basic rations that were provided by the masters and overseers.

Slave Subsistence

A great deal of research has been conducted about the influences of slave foodways and slavery in general on the diet of Americans, in particular on the traditional foodways of the South (Carney & Rosomoff, 2009; Edge, 2007; Harris, 2011). Much of the recent work has emphasized the exchanges and trades that were made and the role of African slaves in the preparation and evolution of American cuisine (see Craughwell, 2012; Harris, 2011). There is no doubt that the botanical exchanges of the Colombian Trade have been among the most significant factors in shaping the foodways of the

modern world. In this system peaches, apples, and wheat left Europe to become American staples; Africa gave okra, black-eyed peas, and peanuts; and American foods like maize, tomatoes, and potatoes became so engrained in African and European foodways that many believe that they are indigenous to those places. All of these elements were instrumental in the diet of the enslaved population of this country (Carney & Rosomoff, 2009; Edge, 2007; Harris, 2011).

While the trade between American colonies, Africa, and Europe was extremely important, it makes the relationship appear to be more symbiotic than it truly was. In truth, from the moment most Europeans came the New World, they were largely dependent on those who came here in bondage (both slaves and indentured servants). This was due to the fact that most of the free people who came arrived in the early colonial period were tradesmen and city dwellers. The first waves of immigrants had little in the way of knowledge of food preparation and were woefully unprepared to farm for themselves in this brave new world. In fact, when slavers loaded their human cargo in Africa, there was often a strong preference for those with farming backgrounds and knowledge often from the interior of the continent. This was lucky for the coastal peoples doing the slave raiding, but unlucky for those inland (Carney & Rosomoff, 2009). This lack of farming knowledge of the early colonists can even be seen in the story that every child knows about Thanksgiving. Had the local Wampanoag not taken pity on the colonists and shown them how to farm, they would surely have starved.

This narrative of those in bondage being the providers can be seen not just in New England but in the South as well. The Carolina Colony was established by wealthy planters and gentlemen many of whom had already made their fortunes in Britain's

Caribbean holdings and were now looking for "more civilized" places to conquer. Fortunately for them, when the founding planters arrived in Carolina, they brought with them Barbadian slaves who were experienced in farming. These slaves in turn brought with them rice, cowpeas, and knowledge of cattle, all of which are African staples. In fact, rice took such a strong hold in Carolina that slaves were chosen to be imported into the colony because of their knowledge of rice cultivation, and Carolina became the largest supplier of rice in the Atlantic world including feeding many of the Caribbean sugar islands (Carney & Rosomoff, 2009).

It is often generally believed that slaves brought these African staples with them on the ships, that they had black-eyed peas tucked in their hair, sorghum and rice placed in the folds of their clothing, and okra seeds hidden in their cheeks (Harris, 2011). While this myth does allow a great deal of agency on the part of the slaves and makes them more active participants, it overlooks more obvious explanations of how these African staples crossed the Atlantic. When the slave ships arrived in Africa, they found themselves in need of provisions for both the human cargo and themselves and the most obvious place for them to stock up was in Africa. There were several reasons why it was better for them to provision in Africa. First of all, they were able to take on fresh food to use on the next leg of their voyage as opposed to eating old European food. Additionally, they learned that the captives were more likely to eat foods that were familiar. This was important, because when they arrived in the New World, healthy slaves would command a higher price and African staples were able to help accomplish this better and more cheaply. Additionally, the Europeans found that the African staples were cheaper and far less perishable than the European staples in the humid climate of both Africa and the

tropical Atlantic. The slavers also found the cowpeas, cassava bread, rice, and okra to be quite delicious, and many developed a taste for it that they kept even after they were no longer active in the slave trade (Carney & Rosomoff, 2009).

Slave Subsistence in Virginia

Once the slaves arrived in the New World, their diets varied depending upon where they were taken. The crops commonly grown in the region would have dictated what they were given, but there were some general staples typically given to slaves. James W. C. Pennington (1849), the former slave a wheat farmer of Maryland's western shore, wrote in *The Fugitive Blacksmith* of his rations that

> The slaves are generally fed upon salt pork, herrings, and Indian corn.
>
> The manner of dealing it out to them is as follows – Each working man, on Monday morning goes to the cellar of the master where the provisions are kept, and where the overseer takes this stand with someone to assist him, when he, with a pair of steel yards, weighs out to every man the amount of three-and-a-half pounds to last him till the ensuing Monday – allowing him just half a pound per day. Once in a few weeks, a change is made, by which, instead of the three-and-a-half pounds of pork, each man receives twelve herrings allowing two a day… .
>
> The slaves have no butter, coffee, tea, or sugar; occasionally they are allowed milk, but not statedly; the only exception to this statement was the "harvest provisions." In harvest… they were allowed some fresh meat, sugar, and coffee; also their allowance of whiskey. (p. 65)

Despite this being across the Chesapeake from the site of the Southampton County Insurrection, slaves in Maryland's Western Shore area were likely to have had a very similar diet to those in Chesapeake Virginia. Furthermore, Pennington's description of Maryland slave provisions is similar to Louisiana slave Solomon Northup's (1853) recollection in his book *12 Years a Slave* that slaves were fed:

> corn and bacon, which is given out at the corn-crib and smoke-house every Sunday morning. Each one receives, as his weekly allowance, three and a half pounds of bacon, and corn enough to make a peck of meal. (p. 168)

Although these specific cases are not from Virginia, the Virginia diet would have been quite similar due to the fact that the cheapest way to feed slaves would have been corn and cured pork (Kahn, 1983). The slaves would have been given little besides the cured pork and maize, but it is by no means the only food that they would have eaten. The rest of the diet would have been supplemented by the slaves' own gardens.

The laws and practices regarding slave farming varied among countries, regions, and even among plantations. In most of the New World there were laws that specifically set out how slave gardens were to be administered. These laws identified how much land, how much time, and even often went so far as to set out which days should be given to slaves to farm. The enforcement of these laws was, of course, patchy with planters and elites often disregarding the laws. The slaves did have a defender in the Catholic Church whose priests were often the only people pushing to make sure that the laws were enforced (Carney & Rosomoff, 2009; Savitt, 1984).

In the United States, there were not formalized laws governing slave treatment as there were in the rest of the New World. The exception to this was Louisiana which, due to its French heritage, retained the Code Noir even after it was accepted into the Union. While it was not law, it was still common practice in many states for specific land to be set aside often near the slave quarters for the sole purpose of independent subsistence and production. It was typical for slaves to be given what were known as Negro Plantations to work in their off time, and as Johann Martin Bolzius noted, "if the Negros are Skilful[sic] and industrious they plan something for themselves after a day's work" (Carney & Rosomoff, 2009, p. 54) . This independent production both freed the owners from responsibility for much of the slaves' subsistence as well as allowed the slaves to plant foods that were familiar to them, more nutritious, allowing them, on a small but very important level, to maintain a sense of culture, heritage, and agency that they would have otherwise lost (Berlin, 2000; Carney & Rosomoff, 2009). Additionally, it has been argued that this permitted for a break in the master-slave relationship that gave the slaves a sense of control over a portion of their lives, while still remaining firmly under White hegemony (Mintz, 1979).

Savitt (1984) makes note of the fact that slaves in Virginia also engaged in independent subsistence activities that could have had significant effect on their nutritional health. Much of the work of outside subsistence was performed by those who would not otherwise be engaged in plantation work. It was often the old and the young who were able to use their free time to fish and tend the garden. Both of these are activities that required significantly less physical stress than the process of tobacco cultivation and allowed a group of people to become providers who would otherwise be a

drain on resources. The only real caveat to the health benefits of the gardens is the fact that the gardens were typically fertilized with what is known as *night soils* also known as human fecal matter. The close contact with this fecal matter along with poor sanitation were major factors in perpetuating the cycle of human borne parasites, and this will be discussed in later sections.

Some of the best records of what crops slaves produced in their own gardens come from the account books and business ledgers of the main houses. It was not uncommon for plantations to supplement what was grown in the plantation gardens with food grown in the gardens of the enslaved. Stanton (1993, p. 38) reports in *Slavery at Monticello* that the estate purchased "skins [likely possum, raccoon, or squirrels trapped in the surrounding forest], fish, duck, hops, timothy seed, watermelons, cucumbers, and cymlin squash." Some of the purchases recorded in Monticello's books were as large as 20 chickens and some as small as one dozen eggs. No matter their size, it is clear that purchases seemed to happen with some frequency and primarily on Sundays. It is important to keep in mind that more products were likely sold in Charlottesville making the yield even larger. Monticello is not the only place where this was common. Savitt (1984) notes slaves in other parts of Virginia also soldproduce from their garden to both the plantation houses as well as to other people in the area. Mr. Jefferson's place in history, however, afforded his record books special care that most household ledgers did not receive.

The general diet found among adult slaves would have likely been quite similar to that of children older than a couple of years. Although they would not have received rations as great as those for working adults, parents would likely have diverted food to

the children (Savitt, 1984). Slave children would likely have been breast fed for less than one year and supplementation of breast milk would have begun after two or three months. Pap and gruel were used to supplement the breast milk, but these were both very nutritionally poor. This reduced breastfeeding time and early supplementation would have allowed to mother to more quickly resume work (Steckel, 1992).

Slave Health and Welfare

Nutrition

Slaves began their lives with an enormous nutritional disadvantage. Records indicate that nutrition for slave children was incredibly poor. This poor nutrition can be seen in many ways including the fact that slaves had an infant mortality rate 17 points higher than that of the population as a whole (Steckel, 1992) and between 1830 and 1860 overall slave mortality was double that of the White population (Steckel, 1992). Both Savitt (1984) and Kiple and Kiple (1977a) report that slave owners had such little knowledge about childhood health that they believed that the shiny ribs and distended bellies of kwashiorkor to be signs of health. As mentioned above, children would have been weaned too early by modern standards and would have received poor nutrition from the pap and gruel they would have been fed after weaning (Steckel, 1992).

There is tragically little data on the specific nutritional deficiencies among slaves due to both the fact that most of these deficiencies and diseases were unknown and to the fact that elaborate data on conditions that would allow for retro-diagnose were not kept. The primary reason for difficulty in retro-diagnosis is that the records of this time were so vague that most cases could have been one of any number of deficiencies or infectious diseases (Savitt, 1984). That being said, there are nutritional deficiencies that would have

had a real and dangerous presence in the lives of slaves (and poor free people) at this time. These nutritional deficiencies may not have appeared alone but could have worked synergistically. Among them would have been the previously mentioned kwashiorkor, which is an acute protein malnutrition found among children. This condition is easy to diagnose based upon the shiny ribs and bloated bellies that are the hallmark of this disease and which slave owners often took as signs of health (Kiple & Kiple, 1977b). Furthermore, both Savitt (1984) and Kiple and Kiple (1977b) argue that disease described by multiple antebellum physicians can now be diagnosed as either beriberi or pellagra – thiamine and niacin deficiencies, respectively. Savitt (1984) also claims that these deficiencies were more likely to occur during the winter when rations would likely have been shorter. It is also possible that winter could exacerbate nutritional problems as the slaves would not be able to supplement from their own gardens, a factor that Savitt does not consider.

Disease Patterns

Slave health has typically been studied as a subject apart from the health of Whites. During the time of slavery there was a great deal of information available, including numerous books, that described the best ways to care for slaves as it was believed that they required different medical care from Whites. For example it was claimed that Blacks should not be bled as they were unable to handle it (Savitt, 1984). However, this may not have been a bad thing since bloodletting more often exacerbated problems and the poor sanitation in slave quarters would not likely have been good for open wounds. It is important to note that while there were books and standards on the treatment of slaves, in the end the healthcare of slaves came down to the master as slaves

were barred from preparing and administering their own medicine and folk remedies. In fact, a 1748 Virginia law specifically prohibited themfrom doing so (Bodenhorn, 2002).

These racial differences were not just in treatment, but were also found in susceptibility to disease. One example of this is malaria, which was endemic in the Tidewater area. Early physicians found that the slaves were less susceptible to malaria, and some even used this as a justification that Blacks were meant to perform work in these conditions and therefore designed for a life of hard labor. Early physicians also found that Blacks were more susceptible to both frostbite and to tuberculosis. It is likely that the greater susceptibility to tuberculosis was a function of poor living conditions (Savitt, 1984); however, darker skin has been shown to have a greater susceptibility to frostbite and this resistance to cold may in fact be one of the reasons that lighter skin evolved (Post et al., 1975).

For Virginia slaves, life would have been filled with endemic disease, parasites, and heavy labor, all creating an environment that is almost perfectly designed for poor health. The presence of disease would have been constant, but diseases came in seasons. In Virginia, the winter months were the time for respiratory illness brought on by close quarters, poor indoor air quality, and byproducts of drying tobacco (Savitt, 1984). Although they were far from disease free, these months did have much lower deaths – especially in January and February – even though these would have been nutritionally leaner months (Steckel, 1992). Importantly, this was not true for all areas.

The summer months came with insects and parasites and other diseases. These months were sometimes known as the "sickly months" due to the fact that June, July, and August saw more than one third of all deaths for 15-49 year olds. Given an even

distribution this number should be nearly ten points lower. Savitt (1984) estimates that 50% of slaves were infested with parasites at some point in their lives, and many were likely to have been chronically afflicted. Parasites and insect borne diseases were not the only diseases endemic to slave populations. Other diseases of poor sanitation such as typhoid, dysentery, and cholera were both endemic and epidemic, with cholera being especially prevalent among those in urban areas, especially along waterways. These parasites and diseases were spread not just through general poor sanitation but through the practice of geophagy as well. This gave the parasite eggs which had been excreted a direct path back into the human system. To make matters worse, zoonotic disease would also have been present due to working closely with animals (Savitt, 1984). The disease burden would have been very high for a slave in Virginia and would have included things such as intestinal parasites, which can have a serious toll on nutritional health, and diseases such as cholera to which they would have had little resistance.

The presence of epidemics in antebellum Virginia cannot be ignored. The South faced the same epidemic diseases that would have been faced in other parts of the county such as yellow fever (Kiple & Kiple, 1977b) and cholera (Savitt, 1984). However, unlike in other parts of the country, the low population density of much of the South meant that outbreaks such as yellow fever would have been reserved to a handful of cities (Kiple & Kiple, 1977b) and that disease such as cholera would have been more endemic than epidemic. Additionally, the fact that tobacco required dispersed labor (Walsh, 1993) meant that the likelihood of epidemic spreading was reduced.

While all diseases would have taken a toll on the nutritional health of the individuals in many ways, Steckel (1992) argues that the relatively poor health of slaves

as compared to local Whites cannot be primarily attributed to the harsh disease environment. He suggests that Southern Whites would have been exposed to the same disease environment and similar conditions. The flaw with this argument is that the living conditions for slaves are likely to have been poorer that those of all but the most disenfranchised Whites. The use of night soils by Blacks also may have contributed to a higher parasite load as the dropping would be filled with parasites that thrive in a human environment. Additionally, the parasitic burden also would likely have taken its toll in many ways. Parasites have the ability to not just sicken and kill those whom they infest, but to feed off of the host for long periods. It is this ability to sap vital nutrients from the host that would have had the largest effect on nutritional health. The diseases and malnutrition would have feed off of one another with weakness causing loss of appetite and malnutrition causing further weakness in a vicious feedback cycle (Drisdelle, 2010).

Labor Activities

In Virginia life largely revolved around tobacco, and slave life almost entirely (Berlin & Morgan, 1993; Walsh, 1993). Although the jobs that slaves performed varied greatly with smaller plantations often having fairly fluid labor divisions, the work would have centered on the production of tobacco (Berlin & Morgan, 1993). Indeed, the main reason for slaves to have arrived in Virginia in the first places was for the cultivation of tobacco, although most planters were only able to buy one or two slaves a year (Walsh, 1993).

Tobacco, by its nature is alabor-intensive crop. Aside from being back-breakingly close to the ground, the plant requires near constant tending. The cultivation of tobacco is tedious, monotonous and continues throughout the year with few breaks due

to the fact that after it is harvested, the leaves still must be dried, cured, and processed (Berlin & Morgan, 1993). The possible upside to the cultivation of tobacco for the slaves was the fact that it required that labor be dispersed over fairly large tracts of land and therefore maintained fairly low population density (Walsh, 1993), which, as was previously discussed, is likely to have had positive health consequences.

There were specific problems that came with the cultivation of tobacco. The primary reason for these problems was the curing and preparation of the tobacco leaves. The drying and curing of tobacco is a hot and dusty process conducted year round in closed, poorly ventilated rooms. The dust from the tobacco curing process carried not just the typical respiratory hazards of dust but also the dangerous nicotine of tobacco. This persistent exposure to high levels of nicotine can cause chronic nicotine exposure (Bodenhorn, 2002; Savitt, 1984). The effects of chronic exposure to nicotine through tobacco dust have been studied in modern occupational settings, and there have been serious problems reported. Chief among the concerns is that respiratory issues can occur such as asthma, chronic obstructive pulmonary disorder (COPD), and rhinitis (Veigi et al., 1986). These problems would almost certainly have taken a toll on health, although it is not clear exactly to what degree and whether this could cause decreased stature.

In other parts of the South, mortality was high during periods when cotton prices were low. It is a logical extension that the same thing would likely be true of tobacco prices in Virginia (Steckel, 1992). This may be because as commodity prices fell, slaves were forced to labor for increased hours and may have been more likely to be worked to death as happened on sugar plantations (Berlin & Morgan, 1993).

Added to the labor of the tobacco growth for the plantation was the additional labor of working on the slaves' own subsistence plots. Much of this work would have been conducted by the old and the young. The young would have begun helping in the subsistence plots years before they would have been introduced into the formal labor force. This labor could have had an effect on childhood health, as the demands of any labor could, but the work in the plots would have been significantly less intense than field work. Therefore, the work in subsistence plots was resigned to the old, young, and disabled (Carney & Rosomoff, 2009). This labor was required after having already put in a full day's work on the plantation and could include the production of tobacco independently for the slaves personal use as well as to be sold in local markets (Berlin, 2000).

Stature as a Measure of Health

One of the most commonly evaluated and widely debated health indicators is stature. Stature is viewed as the summation of childhood nutrition minus the demands of labor and disease. Using stature as a method for examining the nutritional health of a population and comparing one population's status to that of another population is one of the primary uses of stature in anthropology (Auerbach & Ruff, 2010; Bodenhorn, 1999, 2002; Genoves, 1967; Komlos, 1992, 1994; Margo & Steckel, 1992; Scuilli & Geisen, 1993; Steckel, 1992, 1994b, 1999; Tanner, 1994; Prince & Steckel, 2003; Wiley, 2004). Importantly, stature can be used not simply to compare nutritional well-being across space, but across time as well. There are, however, a number of environmental and hereditary factors that can cause variations in body size, and "the biological development

of a human being is always due to the interaction of both genes and the environment" (Bogin, 1999, p. 35).

The most important of the environmental factors in determining stature is nutritional health. Because stature directly assesses the health of the population to see how well they are living, it can be used in instances where currency was not used or other means of determining nutrition may fall short. Komlos (1992) argues that methods such as measuring agricultural output can fall short because it shows only what was recorded officially; at its best it can only show what was consumed in theory. The best way to overcome this limitation is by directly measuring the individual through anthropometrysince nutritional status is reflected in growth.

Two of the major reasons for growth retardation are disease and undernutrition – meaning an individual is not malnourished, but is not sufficiently nourished to achieve their full genetic height potential. This means not just getting enough calories, but getting all of the requisite nutrients that a diverse diet has to offer (Bogin, 1999). The most often looked at and arguably most important nutritional factor (cf. Bogin, 1999) is the amount and quality of protein in the diet. In general the more protein in the diet, the taller the individual is likely to be and the greater ease the individual has at living up their genetic potential (Bodenhorn, 2002; Prince & Steckel, 2003).

It is important to note that while protein quantity is highly important, the quality is also crucial. There are seven proteins that are crucial for humans to survive and thrive. While many other animals can synthesize proteins to be able to live off of a single plant, humans cannot, and therefore must get the full contingency of proteins from their diet. As was discussed earlier, when there is a deficiency of a single protein – most often

niacin or thiamin – a nutritional disease can result. The only readily available source of complete proteins (meaning that it contains all the proteins humans require) is meat. This is not to say that people are unable to get complete protein without meat but that it just must be pieced together from the incomplete protein in plant sources. Human growth, and therefore stature, is a hugely complex process that requires the proper interaction of a large number of nutrients most of which must come from our food (Bogin, 1999).

Bogin (1999) goes so far as to argue that much of the difference in heights between populations is not due to differing genetic potential but can be explained through variations in diet. While Steckel (1994) found that wealthy Japanese children were on average shorter than equally well off British children, others have pointed out that Chinese children have become taller over the past more than sixty years and that this can be largely attributed to the increasing quality of the Chinese diet with a greater emphasis on meat consumption (Ji & Chen, 2008). While there is a great deal of debate about many aspects of stature, it is widely agreed that proper nutrition, especially in terms of adequate protein, is essential for individuals to live up to their genetic potential.

On the genetic side, different populations have different growth rates (Bogin, 1999). This fact, however, should not affect this study significantly for two reasons. Firstly, this study is based on a single population. And secondly, while the Commonwealth of Virginia did report significant amounts of genetic admixture between Whites and Blacks, the short time period of the study should add to the genetic stability. Additionally, studies by Ashcroft and Lovell (1964) and Ashcroft et al. (1966) among White, Black, and African high socio-economic status children in a Jamaican public school found that there were no significant differences in height due to their backgrounds.

The population being studied for this project was also stable in that there were not slaves coming into the state. The state's first laws after independence were to outlaw the importation of new slaves to the state and Virginia was a net exporter of slaves (Guild, 1969).

Another issue affecting application of stature data to interpret health status is the phenomenonof catch-up growth. Catch-up growth is the ability of a growing individual to make up for periods of inadequate nutrition when adequate nutrition returns (Bogin, 1999; Steckel, 1994). It is both a source of strength and weakness for a study of stature. As stated earlier, stature is a measure of nutritional input minus the demands of labor and disease from the point of conception until the bones fully fuse when growth stops. Bodenhorn (1999) found that slaves finished growing at a later age than Whites – about 19-20 years of age – likely due to making up for poor early nutrition. What this means is that, unlike other skeletal health measures, stature does not record particular event in an individual's life, but rather is a summation of the individual's nutritional history (Bodenhorn, 1999; Bogin, 1999; Komlos, 1992; Margo & Steckel, 1992; Komlos, 1994; Steckel, 1992, 1994, 1999; Tanner, 1994; Wiley, 2009). Early childhood malnutrition can be, and with slaves was, made up for when adequate nutrition returned (Steckel, 1994). With studies such as the present one, catch-up growth is actually an advantage. It insures that the individual's stature is not thrown off by a single bout with parasites, poor harvest, or a year of low tobacco prices, but rather the final height is a representation of nearly 20 years of nutrition. Importantly, catch-up growth does not erase all differences in health between populations. Populations with differing overall health will still show differences in stature. Steckel (1999) observed differences between Europeans and

Colonial Americans, and Margo and Steckel (1992) found variation when comparing Northern and Southern Whites. In both cases, the second group was taller due to better nutritional and health environments.

Importantly, the catch up growth that Steckeland others have observed in slaves is echoed in runaway White apprentices (Komlos, 1994), making it likely that it is not population specific, but rather all humans have the potential for catch-up growth. Steckel (1992) argues that this catch-up growth would have started around age ten when slaves would have begun work and consequently received increased rations. Steckel suggests that rations must have increased because, all other factors being equal, an increase in output must be coupled with an increase in input that more than makes up for it. Komlos (1992) does point out the weakness in Steckel's (1986) argument that slaves began catch-up growth when they became of use for labor by pointing out that between ages 10 and 11, when most slaves would enter the work force, there was little change in stature. This, however, may be related to a possible delay between receiving better nutrition and the visible signs of its benefits or due to slaves experiencing a later growth spurt (Bodenhorn, 2002). Additionally, if Komlos (1992) is correct and there is no increase in growth trajectory at the time a slave entered the workforce, the fact that there is also not a decrease indicates that the nutrition must have been able to meet the increased needs of labor.

Steckel (1986) also notes that the rate of catch-up growth for American slaves exceeded that of their Caribbean counterparts. This is supported by Komlos' (1994) finding that U.S. born slaves were taller than both their Caribbean and African counterparts. This slow start and incredible catch-up may be due to the fact that slaves

did not receive full rations until they became productive workers on the plantation as well as the fact that, as mentioned above, masters often misunderstood basic issues of health.

Previous Studies of Slave Stature

Stature studies are not uncommon and have been used to compare the health of the nutritional health of various populations across space, time, and social class (Bodenhorn, 1999, 2002; Kiple & Kiple, 1977a; Komlos, 1994; Margo & Steckel, 1992; Rathbun & Steckel, 2002; Steckel, 1986, 1992, 1994; Tanner, 1994). It provides one of the very few methods for examining nutritional health among slaves. This question requires a large and diverse sample that can only be acquired through using published data from the time period. The use of primary sources for stature also eliminates the error that comes with estimating stature from skeletal data. When calculating stature from a skeletal sample, there is always a margin of error that can affect the quality of data and the accuracy of results (Shuler, Danforth, & Auerbach, 2011). Furthermore, the skeletal samples from slave populations are much more limited than the written records and do not readily allow for controlling for date and place of birth.

Many of these studies that have focused on stature as a measure of nutritional health among slave populations have also compared regional, temporal, and social classifications within the slave community as a whole(e.g., Kiple & Kiple, 1977a; Rathbun & Steckel, 2002; Steckel, 1986). The challenge faced by these studies is that it is often hard to find stature information for those in bondage. The largest sources of information are the Registers of Free Negros and Mulattos (Bodenhorn, 1999, 2002; Komlos, 1992), the manifests of slave ships that were required to be kept on ships transporting slaves within the United States after 1807 (Komlos, 1992; Steckel, 1986),

and Civil War muster rolls (Komlos, 1992). The Registers of Free Negros, however, provides the largest sample and least bias of the previously mentioned sources. As will be discussed at greater length later, Virginia law required that all free Blacks register at the county courthouse either as a child or at the time of their manumission. The registers recorded the name, age, date, height, and any distinguishing characteristics. This provides one of the most accurate and thorough data sources available. In terms of biases, it should be noted that manumitted slaves were reported as being darker than those who were born free. Although possibly biased, these other studies have provided crucial information.

Slaves would have had their heights measured several times in their lives for the purposes of record keeping. Each time a slave was sold or transferred, various descriptive notes would be made including height, build, skin color, and scars or distinguishing marks. This means that throughout a slave's life, they would likely have their height measured several times and at the very least would have their height taken when they reached adulthood (Steckel, 1986).

By the modern standards of the National Center for Health Statistics (NCHS), the slave children would have had an average stature below the first percentile. This provides a perfect example of catch up growth, as by the time a slave reached adulthood, they had reached the 28th percentile based on modern NCHS statistics. This is higher than many, if not most, of the working class populations with whom Steckel (1986) compared them and even exceeds many upper class populations including Russian aristocracy. This nutritional superiority is echoed by the agricultural data which indicates

that the average slave consumed nearly 1000 more calories than the average European peasant (Komlos, 1992).

Margo and Steckel's (1992) study of Civil War muster rolls and amnesty records showed that ex-slaves recruited into the Union Army reached full height at the age of 19 and were a full two inches shorter than Southern Whites. This age at full height fits with Bodenhorn's (2002) study of Registers of Free Negros where he found an adolescent growth spurt for Black males in Virginia that was relatively late for modern populations. It should be noted that Southerners were taller than Northerners even as late as World War II, possibly due to lower population density (Steckel, 1992). Additionally, they found that despite the tougher working conditions, field slaves tended to be taller than the house servants, which is counterintuitive – unless the slaves were chosen for field work due to their larger size. More intuitively, they found that the slaves on larger plantations were shorter than those on small plantations (Margo & Steckel, 1992). These studies show how stature can be used to great effect in assessing the health of various populations. Importantly, these studies both are bolstered by and bolster data from other sources and other fields; however, the stature data provides insight that would not be otherwise available. In studies such as these, stature can provide insight into a question in a way that no other method can.

CHAPTER III

MATERIALS AND METHODS

This chapter will cover the materials that were used in this investigation.The methods that were used to both collect the data and analyze the data will be covered as well. The parameters used to include and exclude individuals from the study are also included as well.

Materials

This study used stature data in records from southern Virginia. It focuses on the counties of Southampton, Norfolk, Chesapeake, Nansemond, and Sussex. These counties are highlighted in the red rectangle. Southampton County is where the Nat Turner Revolt took place. The other counties are adjacent or near to Southampton and would have suffered from the full burden of the hysteria of the Nat Turner aftermath. It will address whether the effects of the rebellion had a negative impact on the ability of slaves to participate in subsistence activities that supplemented the rations they were provided by their owners.

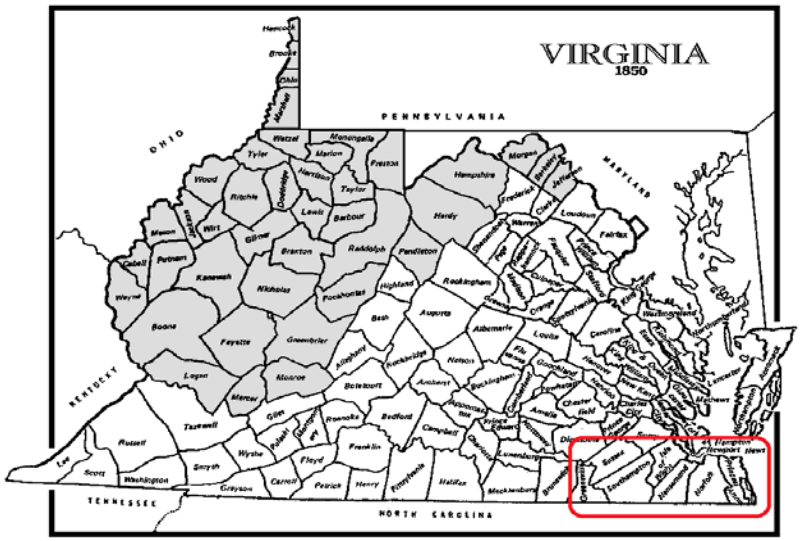

Figure 2. "Map of Virginia- 1850" With the Area of Study in Red. Library of Virginia Online Archive. http://www.lva.virginia.gov/public/wv/map.htm

This projectused the Registers of Free Negroes for the many reasons stated above as well as because of the ease of access and high degree of preservation that allows these Registers to be readily accessed. The records are currently housed at the Library of Virginia in Richmond where the originals can be retrieved. The Registers are also available in microfilm and can be loaned to researchers throughout the country. While a few of the Registers are available online through digital collections, most must be requested on microfilm. The microfilms are currently housed at the Library of Virginia in Richmond, VA.

The Registers of Free Negroes are believed to be accurate because it was in the freed person's best interest to accurately report their own height in order to be identified should there be a question. Furthermore, the accuracy of the reported statures was tested in that some people were measured multiple times and recorded in the Register. These multiple measurements tend to be very consistent. This is not to say that the records will be free of bias. Steckel (1994) argues that all samples have biases, especially when

looking at stature, and that the biases must be taken into account. The most likely place for bias in a study based on Registers is that the registration was not universal. Although it was required for all free people of color to register, this was not fully enforced nor complied with. Many people only registered if they were looking for work (Bodenhorn, 1999). It is for this reason that the register may be skewed towards able bodied men. This bias should not greatly affect the study because it is consistent. It would be comparing two groups of able bodied men to see which fairs better.

This study collected data from 117 adult individuals born between 1780 and 1839. All of the individuals were required to be born in slavery and manumitted after the age of 18 in one of the above stated counties. Of these individuals, 74 are male and 43 are female. For the males,there were 52 individuals born before the Nat Turner Revolt and 24 born after. For females, the numbers were smaller and more even with 21 individuals born before the revolt and 20 born after. For each individual, the entry number, name, age, height, and registration date were taken. The name was taken in large part to insure that individuals who were registered multiple times were not counted more than once.The dates for the pre-Nat Turner groups were those born no earlier than 1780 and no later than 1810. The post-Nat Turner group was comprised of individuals who were born after 1820 and had reached maturity by the time they were measured; in this case the latest is 1839. These rather narrow restrictions meant that of the more than 243 individuals with the needed information, only the aforementioned 117 qualified. Many of the rejected individuals were eliminated due to being born too early, while some fell in the 1810-1820 gap. Those born between 1810 and 1820 would have been too old to grow up enough

under the new system but were too young to have come of age before the revolt took place.

Methods

The four groups – male pre-revolt, male post-revolt, female pre-revolt and female post-revolt – were analyzed in SPSS for basic descriptives. The means, ranges, and standard deviations were the most valuable pieces of information for this study. The means allow exploration of the general trends of stature before and after the revolt. Examinationof the ranges and standard deviations for the groups make it possible to see if there was increasing or decreasing disparity between the slaves as well, which would suggestwhether there was a widening gap between the more and less privileged slaves.

The meanswere also tested for statistical significance using ANOVA. For a study of this nature the α-level was set at .10. Furthermore, since sample sizes are small, the goal of the statistical analysis was to identify patterns within the data. In other words, if there is a less than 10% likelihood that the results could have occurred by chance alone, the results will be deemed significant.

It is important that both the methods and materials conform to the rigorous standards used in this study. In a study such as this, there are many places where slapdash methodology could diminish the quality of the results. By adhering to narrow standards, the results may be less likely to be significant; however, significant results will have added weight. Even if results are not statistically significant, they can be highly important and give strong indications for future research.

CHAPTER IV

RESULTS

Using stature as a measure of health presents unique problems but also has the ability to shed light through results being both statistically significant and insignificant. Statistically significant results show that the massive crackdowns and losses of freedom in the wake of Nat Turner's Revolt took an effect on the health and wellbeing of the slaves in the area. Statistically insignificant resultscould show that either there was not a major effect on the health of slaves or that the sample was not adequate to show statistical significance. The first of these options would indicate that the slaves were able to make up for the loss of independent subsistence in some way, or that the master's provisions were full and adequate – something we know to be dubious at best.

In analyzing the stature seen among males, the mean for the pre-Nat Turner group was 67.44 inches tall, or approximately 171 cm. The tallest of the measured males stood a full 72 inches (~183 cm) and the smallest at a rather diminutive 64.25 inches[5] (~163 cm). This is a range of 7.75 (~20 cm) inches. The post-Nat Turner Revolt group averages 65.76 inches, or approximately 167 cm. Among the second group, the range between the tallest and shortest is more pronounced with the largest individual standing 71 inches (~180 cm) and the shortest a mere 60.5 inches (~154 cm). This is a range of 10.5 inches (~27 cm), which is 2.75 inches (~7 cm) larger than that of the first group.

The statistical analysis of the means for the males in the two time groups proved to be highly significant. While the alpha level was originally set to .10, the analysis showed a statistical significance far exceeding this. The significance level was shown to be .006.

[5] The same height as James Madison.

Table 1

Male Descriptives and T-Test Results for Stature Differences Before and After the Nat Turner Revolt

Group Statistics

Time Period	N	Mean	Std. Deviation	Std. Error Mean
Pre-NT	51	67.4355	2.10010	.29407
Post-NT	24	65.7604	2.86611	.58504

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	T	Df	Sig. (2-tailed)	Std. Error Difference	Lower	Upper
Equal variance assumed	2.186	.144	2.857	73	.006	.58625	.69835	2.65172
Equal variance assumed			2.558	35.061	.015	.65479	.56877	2.78130

In other words, there was a .6% chance of these results being attained through chance alone. The test was also run using a Mann-Whitney U nonparametric test to account for the possibility of non-equal distributions. In this test the null hypothesis was rejected, meaning there is a statistically significant difference between the two means, and the significance was also placed at less than 1%. This means that the group that came of age after the Nat Turner Revolt is, statistically speaking, shorter than their earlier counterparts. This is counter to the general trend of increasing height over time among

people globally (Steckel & Rose, 2002) as well as within the United States (Steckel & Floud, 1997) but consistent with the hypothesis of this study.

Although it is not possible to statistically analyze the ranges due to the lack of sample size, it is clear that the pre-Nat Tuner group has a smaller range between the tallest and the shortest. It is difficult to say with any high degree of certainty, but this does indicate that there was less disparity in stature before the revolt than after. This is reinforced by the fact that the pre-Nat Turner revolt group also has a smaller standard deviation than that of the post-Nat Turner group. What this means is that on average the individuals before the revolt were closer to the median height than after – 2.1 inches and 2.8 inches respectively – and therefore formed a tighter grouping with a lesser degree of disparity.

The results for the females stand in stark contrast to those of the males. Not only were the differences not statistically significant, but they were virtually negligible. The mean stature for females born and raised before the Nat Turner Revolt is 63.1inches (~160 cm) while the mean for the group after the revolt was nearly identical at 62.9 inches (~160 cm).

Table 2

Female Descriptives and T-Test for Stature Differences Before and After the Nat Turner Revolt

Group Statistics

Time Period	N	Mean	Std. Deviation	Std. Error Mean
Pre-NT	21	63.0774	2.61918	.57155
Post-NT	20	62.9000	2.60995	.58360

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	T	Df	Sig. (2-tailed)	Std. Error Difference	Lower	Upper
Equal variance assumed	.270	.606	.217	39	.829	.81693	-1.4750	1.82979
Equal variance assumed			2.558	35.061	.015	.65479	.56877	1.82976

Just as with the means, the standard deviations and ranges were nearly identical. The standard deviations for the pre-Nat Turner and post-Nat Turner groups were both 2.6 inches and the ranges were 10.5 inches and 10.25 inches respectively. Interestingly, the pre-Nat Turner group had higher minimum and maximum individual heights than the

post-Nat Turner group. No matter how the data for females is parsed, the data for females is not significant

Even further insight into these stature values can be gained by comparing them to those found at other slave and free Black sites. As can be seen in Table 3, there is also a rich canon of literature on this subject from skeletal stature estimations. While it is always preferable to use living stature to skeletal stature, it is often necessary to use skeletal stature, although caveats must be added. One of the most important caveats is to know what method was used to derive the stature. The method used can make a fairly significant difference in terms of the estimate arrived at although most studies fail to cite the method that they use for stature estimation (Shuler, Danforth, & Auerbach, 2011). That being said, the formulae developed for Black and White individuals (Trotter, 1970) have a significant level of accuracy.

Table 3

Mean Stature Values by Sex for Selected Slave and Free Populations in the U.S.

Location	Time Span	Mean MaleStature	Mean Male Stature
Bellview, SC[a]	1738-1759	64.6	63.8
Pre-Nat Turner	1780-1810	67.4	63
First African Baptist Cemetery, Philadelphia[b]	1810-1822	67.2	62.2
Post-Nat Turner	1820-1839	65.8	63
Paul Remly Plantation[c]	1840-1860	66.1	62.2
Canadian Middle Class[d]	19th Century	67.2	63

[a]Rathbun & Scarry, 1991; [b]Crist et al., 1995; [c]Rathbun, 1987; [d]Rathbun & Steckel, 2002

The pre-Nat Turner group had an average stature of 67.4 inches for males. This is taller than what was seen at Bellview, SC (Rathbun & Scarry, 1991), Paul Remley Plantation, SC (Rathbun, 1987), and is even taller than was found among northern free Blacks at The First African Baptist Cemetery in Philadelphia (Crist et al., 1995), and even slightly taller than middle class Canadians from around that same time (Rathbun & Steckel, 2002). In the post-Nat Turner system and world, the males in this study were shorter than all but the slaves at Paul Remley Plantation (Rathbun, 1987).

While the results for males and females are strongly contrasting, both sets of results shed a great deal of light on the question. The results for males showed significant differences before and after the Nat Turner Revolt in just about every way from varying means to standard deviations. The females, on the other hand, were nearly identical both before and after the Nat Turner Revolt. The next discussion will explore this in greater depth.

CHAPTER V

DISCUSSION AND CONCLUSIONS

This chapter will review the findings presented in the previous chapter as well as attempt to place those findings within a larger context. Only by examining this event in the greater context of the times can we draw meaningful conclusions. These conclusions can help provide an interpretive stance towards the events and the aftermath and significance of the events on future generations.

Discussion

The primary hypothesis tested in this study was that enslaved individuals born and raised after the 1831 Nat Turner Revolt would be shorter than those who were born and raised under the old regime which was in place before the revolt. Additionally, it was hypothesized that there would be an increase in the health disparity within the groups of slaves as measured by standard deviation and range, and that this would hold true for both the males and the females.

The results in this study were mixed with the results for male and female stature standing in stark contrast to each other. As presented in the previous chapter, the males showed statistically significant changes while the females showed no change at all. This loss of height among men beginning in the 1820s is similar to what was found by Steckel in Civil War muster roles (Steckel personal communication, 2011); however, Steckel has argued that this change was reversed in later decades and was a largely White phenomenon. The source of this decline is believed to be multivariate with increased immigration and increased urbanization both playing a role. It is difficult if not impossible to determine which of these factors might be in operation in a group as large

and diverse as America's White population (Steckel personal communication, 2011). This does not seem to be the case in this study given the sample size involved. Additionally, this bucks the general trend of increasing stature over time for all people as countries develop technologically and become wealthier (Steckel & Floud, 2002).

The hypotheses in this study postulated that females would also be affected after the revolt was not shown to be true. In fact, while it was assumed that there would be a high likelihood that any changesin stature for females would not be statistically significant due to small sample size, it was still hypothesized that there would be a measurable decrease between the pre-Nat Turner and post-Nat Turner groups. However, there is no measurable difference at all; any difference present is eliminated simply through conservative rounding. This near complete lack of difference is quite interesting especially when in light of the highly significant results attained for the men. For some reason, the females were either not affected by the Nat Turner Revoltin the same way that the men were, or they simply do not show it.

There are several possible explanations for this lack of difference. Were women impacted biologically by the changes in slave life that followed the revolt? Were women more likely to be in domestic jobs where they had easier access to the master's favor and possibly food stolen from the kitchen? Or was this in fact due to the small sample size? It is extremely difficult, if not impossible, to prove or disprove many of these ideas. However, some of the biological explanations might be explored further.

One possibility is that because women tend to have their growth spurt earlier (Bogin, 1999), they may have had fewer years for catch-up growth to take effect.An even more compelling explanation for the lack of difference in female stature, however, is

provided by Stinson (1985). Stinson (1985) argues that females are less likely to show stunting due to having a greater degree of buffering, which is possibly due to their requirements for maintaining a functioning reproductive system. The idea of females having been selected for greater buffering based on a need to support pregnancy and lactation is also supported by Stini (1969) and others. Much of the research on this subject has been prenatal studies, which found female fetuses were more resistant to environmental factors. It is suggested that what holds true in the womb also hold true in the world outside.

Bogin (1999) also argues for a prenatal root of canalization with female children being on the whole healthier with greater immunities. Canalization is the tendency of an individual to maintain a genotypic tendency despite environmental factors that would otherwise affect it. The reason for the greater health is that females are born about two weeks more developed than males. These last few weeks of development are highly important to the development of both the respiratory and immune systems. This increased development provides an additional buffer for females that males do not enjoy.

Additionally, the greater canalization could be due to the fact that after birth there are often cultural biases towards male children that may allow some of them to experience greater catch-up growth. Not only does this study add further evidence for female canalization, but the canalization is borne out when this study is added into greater context. As is seen in Table 3, the average stature for females in various locations and at various times is all within .8 inches of 63 inches (the mean female height found in this study). While it might not be possible to conclusively determine the causes and reasons for canalization, the evidence for it is plentiful.

While there are no direct analogues for this study, it is possible to add context by looking at studies of various slave and free Black populations. The best analogues for this study are the studies of free Blacks in Virginia conducted by Bodenhorn (1999, 2002). These investigationssimilarly use living stature data to demonstrate how growth can be dependent on environmental factors and a stand-in for general nutritional wellbeing. These examinations also used the County Registers of Free Negroes and Mullatoes. Bodenhorn's results differ in some important ways from those of this study, but, importantly, they are not intended to test the question asked in this study. Bodenhorn's (2002) inquiry comparing free Blacks with recorded light skin to those of recorded dark skin can provide important information. This study examined males and females who registered throughout the entire existence of the registers from 1793 through the outbreak of the Civil War in 1860. This investigation found an average stature for full grown males of light skin to be 68.5 inches and 67.1 inches for those of dark skin. This study's pre-Nat Turner average stature for men was 67.4 inches; falling above the average for free born men of dark skin, but below that of free born men of light skin. This examination, however, did not take skin color into effect. The light-skinned women in Bodenhorn's (2002) inquiry have a nearly identical stature to that found in this study, reporting an average of 62.9 inches, while this study an average stature of 63 inches was found in both the pre- and post-Nat Turner groups. Dark skinned women in his investigation were found to have an average stature of 60.8 inches. This is substantially shorter than what was found in this study for both groups. The presentanalysis is, of course, an imperfect analogue as this study does not account for secular change among

slaves. An earlier study conducted on the Registers examined them for temporal change based upon birth cohort.

Bodenhorn's (1999) study examined both those born into slavery and those born free in order to understand how those populations changed based upon birth cohort. He found dramatically different results from those achieved in this study, noting a consistent increase in stature throughout time for both those born free and those born in bondage. Additionally, Bodenhorn's (1999) study found an increase in stature among those born in the 1820s cohort. This is the birth cohort in which this study began to see a decrease in average stature, and he found that those born into slavery overtook those born free in stature. It must be noted that with increasing stature there was also a decreasing number of individuals in each sample, which is in direct contrast to the findings of this study. The earlier study, however, used individuals from all across the state, and while they were all born into slavery, it is unclear if they reached maturity in bondage.

As can be seen previously, the pre- and post-Nat Turner groups are both relatively obvious outliers. The pre-Nat Tuner group was taller than the other early groups, while the post-Nat Turner group was shorter. The overall range for males goes from 64.6 inches in the earliest group at Paul Remly Plantation to 67.4 inches in the pre-Nat Turner Revolt group. The next tallest are both 67.2 inches in Northern Blacks in Philadelphia and middle class Canadians; both of these are groups that most would guess to be better off than slaves anywhere. Removing the samples from this study, there can be seen a general trend of increasing stature, although the later groups are not slave groups and could be better nourished because of that.

The canalization for females continues to be evident in the skeletal samples in previously discussed tables. The comparative samples for females range from a low of 62.2 inches at both Paul Remley Plantation (SC) (Rathbun, 1987) and First African Baptist Cemetery (PA) to a high of 63.8 inches at Bellview, SC (Rathbun & Scarry, 1991) (the earliest sample). Both the pre- and post-Nat Turner samples fall exactly in the middle at 63 inches. This is the same average as temporal comparable middle class Canadians (Rathbun & Steckel, 2002). The addition of comparative samples echoes and reinforces the canalization found in this study.

It is clear from the t-test conducted on the difference in mean stature from before and after the rebellion that a significant and dramatic decline in stature, and therefore in health, took place among males after the revolt. While it is possible to detect a correlation, it is, unfortunately, impossible to claim a direct and indisputable causation. The number of factors can be significantly reduced, however, to increase the likelihood that the changes seen are in fact a result of the Southampton Insurrection. One factor that must be addressed is that of the price of the agricultural staple crop of the region. Importantly, this means not the primary food crop, but the primary cash crop of the region, which for this area, and greater Virginia, meant tobacco. Both Savitt (1984) and Bodenhorn (1999) argue that the health and welfare of slaves varied along with the price of the primary cash crop, be it sugar, tobacco, or cotton. This was due to the fact that in tough times the slaves were the first to feel the effects through masters cutting rations. While there were certainly times of depressed tobacco prices after the Nat Turner Revolt, there were also times of depressed prices before the revolt. With a study exploring stature, any one period of poor nutrition would be made up for later in life through catch-

up growth (Steckel, 1994) as was discussed earlier. This means that any period of undernutrition due to depressed tobacco prices would be made up for in times of higher prices. Additionally, because this study takes individuals from a broad range of time the risk of the study being thrown off by a bad year or two is even less likely. Although the findings in this study are similar to those found in studies of mean stature of Whites during the 19th century, their drop in stature was often attributed to increasing urbanization (Steckel & Floud, 1997 and this can be almost certainly ruled out in the case of this sample.

While it is not possible to say with certainty that the drop in stature is entirely attributable to consequences from the Nat Turner Revolt, there are few other major factors that could be responsible for the significant decrease. Depressed tobacco prices could play a role in exacerbating nutritional stress, but the lack of evidence of price drops and the temporary nature of price slumps could by no means account for this loss. This event and the ensuing break in the previous master-slave relationship were dramatic shifts that had lasting consequences. There is a severe shortage of explanations for the notable loss of stature among men other than as a consequence of the massive reorganization of slave life and subsistence practices that occurred when sweeping new laws and practices came into effect in the wake of the Southampton Insurrection.

Conclusions

The goal of this study was to examine one of the most significant shifts in slave life and culture through the direct measure of the lives of typical individuals. While it has been evident to historians for some time that the Nat Turner Revolt represented a turning point in the history of Southern slavery, it has been difficult to directly assess the

level of the impact. Previous discussions have focused on the shifts in laws and practices that governed the lives of slaves at this time. The laws, even when not strictly enforced, represent the zeitgeist of those who created them. The laws and practices represent people's fears, values, and deeply held beliefs and therefore must be examined and studied. That being said, it is also important to consider not just the laws, but what affects the laws, and possibly more importantly what consequences the shifting mentality had on lives.

This investigation explored the consequences of the massive new set of laws that went into effect in the aftermath of the 1831 Southampton Insurrection. These laws clamped down on the freedoms that slaves had enjoyed and, most relevantly for this study, made it more difficult for them to conduct the independent subsistence activities upon which they had so greatly relied. These independent subsistence activities were essential for slaves to be able to supplement the often meager and nutritionally inadequate rations provided by the masters. Additionally, they allowed for slaves to breach the master-slave relationship (Berlin, 1974) and earn money that could then be used to improve their condition.

This study focused specifically on the possible nutritional consequences of this crackdown and fundamental reorganization of slave life and subsistence patterns as they affected the lives of slaves in the area of southeastern Virginia near Southampton and the epicenter of the insurrection. The goal was to examine what, if any, changes there were to the health of slaves as a result of the Nat Turner Revolt. The possible effects were assessed through changes in the stature of the individuals, comparing those born and raised before the revolt to those born and raised entirely after the revolt.

The results were mixed to an unexpected degree. The males were not only significantly shorter after the revolt than before but also showed a greater level of disparity in health as indicated by both the range and the standard deviation. The results for mean height were statistically significant to a very high degree. The females on the other hand, showed virtually no changes, significant or otherwise in mean, range, or standard deviation. It was surprising that the results were so strongly divided between the genders, and while this makes drawing easy conclusions from this study more difficult, much may be the result of greater canalization in females.

On the whole, it is possible to conclude, although with reservations, that the health and welfare of slaves in Virginia, especially males, was seriously and negatively affected by the Nat Turner Revolt and the subsequent loss of right and privileges. Although the masters sought to make the lives of slaves more difficult after the revolt as well as to reduce the possibility that the slaves would be able to revolt again, it is unlikely that they understood that the loss of the ability for independent subsistence had additional consequences for the lives of slaves. Given the state of medical understanding, especially for slaves, being as crude as it was (Savitt, 1984), it is almost certain that this decline in health was entirely unintentional.

The mixed results do, quite importantly, leave a great deal of room open for future study. By increasing the sample size through an expansion of thegeographical region covered to include surrounding counties and states, it may be possible to gain a greater understanding of exactly how far reaching the backlash to the revolt was and how deep the changes went. Doing so could either confirm the results found in the Southampton

area thereby creating a level of consistency in the results that is not currently evident, or it could help explain the reasons for the inconsistency.

The fact that males had a significantly smaller mean stature after the Nat Turner Revolt as compared to before as well as greater range and standard deviations shows a measurable drop in health coinciding with the revolt. That being said, the fact that females showed no difference complicates these findings. Therefore, further research is required concerning this event that shattered the existing notions of the master-slave relationship and replaced it with an entirely new paradigm and regime. Furthermore, this study adds an important new page into the canon of slave studies. Even other studies using the Registers of Free Negroes and Mullatoes such as those by Bodenhorn (1999, 2002) do not focus on those born slaves. While this study does this, it is difficult to precisely place this study within a body of work. This makes the results even more valuable and makes this an even more promising area for future study.

The revolt did not simply impact the lives of those involved but changed the lives of slaves who had never even heard of Nat Turner. In just the counties surrounding the revolt there were more than 60,000 slaves. Expanding the area under consideration to southeastern Virginia and the number quickly tops 110,000, with more than 1.2 million slaves in the state as a whole (Historic Census Browser, 2004). For every slave involved there were a thousand in neighboring counties, two thousand in the region, and twenty thousand in the state. Life was changed for all of them. The misfortune of slavery was amplified by the misfortune of living in interesting times.

There is no one at that time, including Turner himself, who could have fully understood the consequences of the revolt. Rather than shatter the system of slavery, the

revolt shattered Whites' perceptions of slavery. This act of rebellion stood out as a turning point in how White society viewed slaves. No longer were slaves patronizingly and paternalistically thought of as part of the family, but they became potential enemies. This fracturing of the worldview was by far the most widespread and significant effect of the revolt.

No one understood the devastating consequences to health from one generation to the next, but they were real and serious. They were also unintended. The changes in nutritional health are merely a symptom of the larger fracturing of a society and its institutions. The economist Umair Haque argues that "if institutions are just instruments to fulfill social contracts, then ours are shattering because the social contracts at their heart have fractured" (Haque, 2011, Poeisis: paragraph 4).While the slaves may have been unwilling participants in the social contract, they were parties to it nonetheless. As the institution of slavery began to fracture, those with the least suffered the most. In the end, Nat Turner did change the world he lived in, although in ways he could never have expected. Instead of freedom, they found redoubled bondage. Instead of jubilee, greater sorrow.

APPENDIX

MALE STATURE VAULES TAKEN FROM COUNTY REGISTERS OF FREE NEGROS AND MULATTOES IN SOUTHEASTERN VIRGINIA 1794-1839

County	Name	Stature	Inches	Register year	Age	Birth year
Southampton	Henry Hicks	5' 8 1/4"	68.25	1794	32	1762
Southampton	Richard Blackskins	5' 6"	66	1796	32	1764
Southampton	Aaron Norfleet	5' 8 1/2"	68.5	1798	42	1756
Southampton	Jesse	5' 4-1/2"	64.5	1799	22	1777
Southampton	Mike Roberts			1800	30	1770
Southampton	Luke Archer	5' 8-1/4"	68.25	1802	55	1747
Southampton	Jack Cosby	5' 5"	65	1802	45	1757
Southampton	Peter Turner	5' 6"	66	1803	54	1749
Southampton	Josiah H.	5' 4-3/4"	64.75	1803	22	1781
Southampton	Daniel Hillard	5' 6-3/4"	66.75	1803	22	1781
Southampton	Peter Fagan	5' 5"	65	1804	37	1767
Southampton	Cuffee Coleman	5' 10"	70	1805	57	1748
Southampton	Abram Boon	5' 5-1/2"	65.5	1806	35	1771
Southampton	Jonas Cosby	5' 6-1/2"	66.5	1806	25	1781
Southampton	London William	5' 6-1/4"	66.25	1806	50	1756
Southampton	Anthony Green	5' 10"	70	1809	24	1785
Southampton	Edey Evans	5' 7"	67	1810	40	1770
Southampton	Isam Scott	4' 9-1/2"	575	1810	52	1758
Southampton	Avey Duncan	5' 2"	62	1810	43	1767
Southampton	Exum Green	5' 6"	66	1808	23	1785
Southampton	Willis Powell	5' 11-1/2"	71.5	1808	28	1780
Southampton	Judah Hines	5' 3-1/2"	63.5	1812	41	1771
Southampton	David Eley	5' 7"	67	1812	34	1778
Southampton	Issac Taylor	5' 4-1/4"	64.25	1815	62	1753
Southampton	NorbornArtis	5' 6"	66	1816	22	1794
Southampton	James Jackson	5' 6-1/4"	66.25	1819	67	1752
Southampton	Jesse Branch	5' 8-1/2"	68.5	1824	50	1774
Southampton	Willis Williams	5' 8-3/4"	68.75	1826	35	1791
Southampton	Charles Hamblin	5' 5-3/4"	65.75	1826	44	1782
Southampton	Howell Hunt	5' 11"	7	1828	30	1798
Southampton	Jerry Williams	5' 4-1/4"	64.25	1828	46	1782
Southampton	Sam Browne	5' 8'	68	1835	60	1775
Southampton	Amos Browne	5' 4 "	64	1835	64	1771

Southampton	Jonny	5' 8"	68	1835	61	1774
Southampton	Dick Warren	5' 8"	68	1835	65	1770
Southampton	James Jones Sr.	5' 7"	67	1837	56	1781
Southampton	Nathan Roberts	5' 8-1/2"	68.5	1837	24	1813
Southampton	Dick (son of Hannah)	5' 1/2"	60.5	1839	17	1822
Southampton	George	5' 6-3/4"	66.75	1848	46	1802
Southampton	John Wilkenson	5' 6"	66	1848	21	1827
Southampton	Edmund	5' 7"	67	1851	38	1813
Southampton	Sam	5' 6-1/2"	66.5	1853	28	1825
Southampton	Jonah Whitney	5' 8"	68	1854	39	1815
Southampton	Theophilius Evans	5' 5"	65	1854	21	1833
Southampton	Gilbert Evans	5' 7"	67	1854	40	1814
Southampton	Nicholas Bayley	5' 5-1/2"	65.5	1854	21	1833
Southampton	Addison	5' 11"	71	1856	33	1823
Southampton	Anthony	5' 7"	67	1856	26	1830
Southampton	Dick	6' 1/2"	72.5	1856	40	1816
Southampton	Willis	5' 10"	70	1856	55	1801
Southampton	Simon	5' 9"	69	1856	69	1787
Southampton	Orvis	5' 7-1/2"	67.5	1856	54	1802
Southampton	Abraham	5' 5-1/4"	65.25	1856	19	1837
Southampton	Parker	5' 9"	69	1856	45	1811
Southampton	Dick	5' 5-3/4"	65.75	1858	40	1818
Southampton	Steney	5' 5-1/2"	65.5	1858	30	1828
Southampton	Ephraim	5' 9-1/4"	69.25	1858	30	1828
Southampton	Jimmy	5' 1-3/4"	61.75	1858	25	1833
Southampton	Samuel	5' 8"	68	1858	41	1817
Southampton	John	5' 8-1/2"	68.5	1858	43	1815
Southampton	E- Waller	5' 3"	63	1860	34	1826
Sussex	Jim	5' 7"	67	1825	21	1804
Sussex	Edmund Woodland	5' 8-5/8"	68.625	1828	30	1798
Sussex	Anthony	5' 4-1/2"	64.5	1829	48	1781
Sussex	Nathan	5' 4-1/2"	64.5	1831	57	1774
Sussex	George	5' 6"	66	1832	30	1802
Sussex	Jim	5' 5-3/4"	65.75	1837	33	1804
Sussex	Eppes Collier	5' 3-3/4"	63.75	1849	35	1814
Sussex	Claiborne Collier	5' 11"	71	1849	27	1822
Sussex	Mark Collier	5' 10-1/2"	70.5	1849	27	1822

Sussex	Miles	5' 8-3/4"	68.75	1830	46	1784
Sussex	Burnell	5' 6-1/2"	66.5	1832	36	1796
Sussex	Nat Ellis	5' 3"	63	1841	24	1817
Norfolk	London Whitehead	5' 8"	68	1810	35	1775
Norfolk	Britain Davis	5' 9-1/2"	69.5	1810	25	1785
Norfolk	Joe Lewilling	5' 4"	64	1810	44	1766
Norfolk	Abraham	5' 5"	65	1811	57	1754
Norfolk	Luke Wormington	5' 4"	64	1811	64	1747
Norfolk	Moses Smith	5' 6-3/4"	66.75	1812	30	1782
Norfolk	Luke Smith	5' 4-1/2"	64.5	1812	35	1777
Norfolk	henry Mason	5' 8-1/4"	68.25	1812	42	1770
Norfolk	Ned Sample	5' 6"	66	1812	23	1789
Norfolk	Sandy Deans	5' 10-3/4"	70.75	1812	21	1791
Norfolk	Moses Jordan	5' 3-1/2"	63.5	1813	32	1781
Norfolk	KittLyne	5' 10-1/2"	70.5	1814	53	1761
Norfolk	Benjamin Goodwin	5' 8"	68	1815	35	1780
Norfolk	Ben Spellman	6'	72	1815	22	1793
Norfolk	Willis Milhado	5' 7"	67	1816	45	1771
Norfolk	David Ricks	5' 6"	66	1816	27	1789
Norfolk	John Hicks	5' 3-1/2"	63.5	1816	53	1763
Norfolk	Nathan Smith	5' 10"	70	1816	49	1767
Norfolk	Jason Grimes	5' 8-1/2"	68.5	1816	47	1769
Norfolk	Isaac Oden	5' 4-3/4"	64.75	1816	45	1771
Norfolk	Lavie White	6'	72	1817	27	1790
Norfolk	Ishmael Nimmo	5' 6"	66	1817	50	1767
Norfolk	RamdolphBressie	5' 6"	66	1817	32	1785
Norfolk	Atta Bressie	5' 9"	69	1817	33	1784
Norfolk	Ralph Bressie	5' 8-3/4"	68.75	1817	26	1791
Norfolk	Ephriam Rivers	5' 5"	65	1817	66	1751
Norfolk	Joshua Gray	5' 1-3/4"	61.75	1818	48	1770
Norfolk	Bartley	5' 6-1/2"	66.5	1819	22	1797
Norfolk	Willis Whitfield	5' 7"	67	1819	48	1771
Norfolk	Tully Cook	5' 7-1/2"	67.5	1819	37	1782
Norfolk	John Morriss	5' 5"	65	1820	23	1797
Norfolk	Sam Wilson	5' 6-1/2"	66.5	1820	52	1768
Norfolk	Randall Cooper	6' 6-1/2"	66.5	1821	22	1799
Norfolk	Peter Anthony	5' 10-	70.5	1822	47	1775

		1/2				
Norfolk	Moses Smith	5' 8-1/2"	68.5	1822	39	1783
Norfolk	George Spelman	6'	72	1822	22	1800
Norfolk	Ephraim Watts	5' 6-3/4"	66.75	1822	27	1795
Norfolk	Joe Hall	5' 5"	65	1823	40	1783
Norfolk	Charles Bressie	5' 9"	69	1825	27	1798
Norfolk	Pompey Wilson	5' 7-3/4"	67.75	1825	55	1770
Norfolk	Jack Bressie	5' 4-1/3"	64.333	1826	24	1802
Norfolk	Ned Shepherd	5' 6-1/4"	66.25	1827	37	1790
Norfolk	Samuel hogwood	5' 9"	69	1827	25	1802
Norfolk	Dick Conner	5' 4-1/2"	64.5	1827	54	1773
Norfolk	John Hicks	5' 3-1/2"	63.5	1828	64	1764
Norfolk	Joe Edards	5' 3-3/4"	63.75	1828	51	1777
Norfolk	William Tatem	5' 7-1/2"	67.5	1828	35	1793
Norfolk	Jerry Tynes	5' 7-1/2"	67.5	1829	26	1803
Norfolk	Jo Small	5' 9-1/4"	69.25	1830	21	1809
Norfolk	Daniel Watts	5' 5"	65	1830	60	1770
Norfolk	Willis Bass	5' 9-1/4"	69.25	1831	35	1796
Norfolk	Uriah Timberlake	5' 8"	68	1831	44	1787
Norfolk	Will Corprew	5' 3"	63	1831	69	1762
Norfolk	Tom Randall	5' 5"	65	1831	43	1788
Norfolk	Moses Hatten	5' 3-3/4"	63.75	1831	59	1772
Norfolk	Brutus Taylor	5' 7"	67	1832	23	1809
Norfolk	Joe Mayo	5' 4"	64	1837	60	1777
Norfolk	Sam Wats	5' 8"	68	1847	27	1820
Chesapeake	Tim Barclay	5' 6-1/2"	66.5	1853	55	1798
Chesapeake	Billy	5' 5-3/4"	65.75	1857	37	1820
Chesapeake	Jacob Ca	5' 7"	67	1858	48	1810
Chesapeake	George Barney	5' 3"	63	1859	28	1831
Chesapeake	Alfred Barney	5' 5-1/2"	65.5	1859	53	1806
Chesapeake	Ben Connor	5' 5"	65	1860	40	1820
Chesapeake	Bill Barney	5' 4-12"	64	1860	40	1820
Chesapeake	Dick Hudgins	5' 8"	68	1858	25	1833
Chesapeake	Willis Jones	5' 7-1/4"	67.25	1859	29	1830
Chesapeake	Issac Gideon	5' 3"	63	1852	17	1835
Chesapeake	William Bartlett	5' 4-3/4"	64.75	1861	52	1809
Chesapeake	Joseph Rains	5' 9-1/2"	69.5	1859	50	1809
Chesapeake	Samuel Rains	5' 5-1/2"	65.5	1859	58	1801
Chesapeake	Daniel	5' 2-13"	62.5	1859	26	1833
Chesapeake	Edward	5' 4"	64	1859	25	1834

FEMALE STATURE VAULES TAKEN FROM COUNTY REGISTERS OF FREE NEGROS AND MULATTOES IN SOUTHEASTERN VIRGINIA 1794-1839

County	Name	Stature	Inches	Register year	Age	Birthyear
Southampton	Amey Hurst	5' 2-1/8"	62.125	1795	19	1776
Southampton	Pat Turner	5' 1"	61	1799	20	1779
Southampton	Prisilla Artis	5' 4-1/2"	64.5	1801	40	1761
Southampton	Sally Lawrence	5' 2 1/4"	62.25	1803	21	1782
Southampton	Cherry Evans	5' 1-1/4"	61.25	1806	18	1788
Southampton	Nancy Scott	5' 5"	65	1810	42	1768
Southampton	Amey Hicks	5' 4"	64	1810	27	1783
Southampton	Phillis Lawrence	5' 5-1/2"	65.5	1812	26	1786
Southampton	Hannah Green	5' 7-1/4"	67.25	1815	52	1763
Southampton	Celia Green	5' 3"	63	1815	34	1781
Southampton	Zilpha Williams	5' 2"	62	1816	35	1781
Southampton	Chloe Branch	5' 5-1/4"	65.25	1824	54	1770
Southampton	Caty Whitfield	5' 3"	63	1826	46	1780
Southampton	Tabitha Hunt	5' 5-1/2"	65.5	1828	29	1799
Southampton	Abby Peterson	5' 3"	63	1828	54	1774
Southampton	Olive Hurst	5' 4"	64	1831	43	1788
Southampton	Nanny McNeal	5' 7"	67	1836	57	1779
Southampton	Hannah	5' 3-1/2"	63.5	1839	35	1804
Southampton	Eliza	5' 2"	62	1848	21	1827
Southampton	X Saunders	5' 2"	62	1848	27	1821
Southampton	Lucy	4' 11"	59	1853	25	1828
Southampton	Sally	5' 1-1/2"	61.5	1853	18	1835
Southampton	Julia	5' 1"	61	1853	21	1832
Southampton	Ma-	5' 3-1/2"	63.5	1853	30	1823
Southampton	Edna Whitney	5'	60	1854	25	1829
Southampton	Harriet	5' 3/4"	60.75	1856	38	1818
Southampton	Mariah	4' 11"	59	1856	41	1815

Southampton	Eliza	5' 5-/2"	65.5	1856	25	1831
Southampton	Zobeide	5' 1"	61	1856	18	1838
Southampton	Sophia	5' 2-1/2"	62.5	1856	26	1830
Southampton	Co-	5' 2-1/2"	62.5	1856	41	1815
Southampton	Nancy	5' 6"	66	1856	28	1828
Southampton	Desdemona	5' 1"	61	1856	34	1822
Southampton	Martha	5' 6-1/2"	66.5	1856	55	1801
Southampton	Judy	5' 6-1/2	66.5	1856	25	1831
Southampton	Margaret	5' 5"	65	1856	24	1832
Southampton	Becky	5' 5-1/4"	69.25	1858	30	1828
Southampton	Justine	5' 2-1/2"	62.5	1858	60	1798
Southampton	Tabitha	5' 3"	63	1858	33	1825
Sussex	Matilda	5' 4-1/4"	64.25	1826	28	1798
Sussex	Peggy Woodland	5' 3-3/8"	63.375	1828	34	1794
Sussex	Tiller	5' 3-1/2"	63.5	1831	43	1788
Sussex	Peg	5' 1/2"	60.5	1836	54	1782
Sussex	Elizabeth	5' 2-3/4"	62.75	1836	50	1786
Sussex	Nancy	5' 6"	66	1836	40	1796
Sussex	Jenny	5' 2-1/2"	62.5	1831	47	1784
Norfolk	Lavinia	4' 11 '	59	1810	57	1753
Norfolk	Sarah	5' 3"	63	1810	60	1750
Norfolk	Lydia Foster	4' 9"	57	1810	48	1762
Norfolk	Peggy Dunn	5' 5"	65	1811	59	1752
Norfolk	Susanna Malory	5' 7-1/2"	67.5	1812	64	1748
Norfolk	Rose Anderson	5' 4"	64	1816	50	1766
Norfolk	Lydia Anderson	5' 3-1/2"	63.5	1816	19	1797
Norfolk	Julia Bass	5' 5-1/2"	65.5	1816	31	1785
Norfolk	Charlotte Dickson	5' 3-3/4"	63.75	1817	45	1772
Norfolk	Liza Grimes	5' 1/2"	60.5	1817	45	1772

Norfolk	Rachel Bressie	4' 11-1/2"	59.5	1817	56	1761
Norfolk	Peggy Whitfield	5' 5"	65	1817	36	1781
Norfolk	Affia Bressie	5' 2"	62	1817	28	1789
Norfolk	Rosetta Bressie	5' 4"	64	1817	24	1793
Norfolk	Sally Bressie	5'	60	1817	20	1797
Norfolk	Lucy Cook	5' 4-1/2"	64.5	1819	60	1759
Norfolk	Lucy Godfrey	5' 2"	62	1819	36	1783
Norfolk	Nancy Wright	5' 6-3/4"	66.75	1820	46	1774
Norfolk	Zelpha Wright	5' 4-3/4"	64.75	1820	29	1791
Norfolk	Sophy Leigh	5' 3/4"	60.75	1821	50	1771
Norfolk	Judith	5' 1/2"	60.5	1822	22	1800
Norfolk	Philis	5' 2-1/2"	62.5	1822	30	1792
Norfolk	Caty Spelman	5' 6"	66	1822	42	1780
Norfolk	Tamer Seyman	5' 2"	62	1822	37	1785
Norfolk	Lydia Dolly	5' 2"	62	1822	31	1791
Norfolk	Nancy	5' 5-3/4"	65.75	1823	30	1793
Norfolk	Lucy Hall	5' 1/2"	60.5	1823	50	1773
Norfolk	Molly Shield	4' 7"	55	1825	23	1802
Norfolk	Susan Taylor	5' 8-1/2"	68.5	1826	23	1803
Norfolk	Rose Leigh	5' 2"	62	1827	36	1791
Norfolk	Isabella	5'	60	1827	30	1797
Norfolk	Lydia Hogwood	4' 11-3/4"	59.75	1837	24	1813
Norfolk	Amey Wright	5' 3"	63	1828	50	1778
Norfolk	Annis Hogwodd	5' 3-1/2"	63.5	1830	60	1770
Norfolk	Lovy Morris	5' 2"	62	1831	31	1800
Norfolk	Justine Barrand	4' 11-3/4"	59.75	1831	22	1809
Norfolk	Ally Peirce	5' 6-1/4"	66.25	1831	28	1803
Norfolk	Diza Perkins	5' 8-3/4"	68.75	1831	31	1800
Norfolk	Jane Timberlake	5' 1-1/2"	61.5	1831	33	1798

Norfolk	Judith Watts	5' 1/2"	60.5	1831	32	1799
Chesapeake	Lyphea Barney	5' 1"	61	1859	29	1830
Chesapeake	Phillis Barney	4' 9-1/2"	57.5	1859	55	1804
Chesapeake	Nancy Barney	4' 8-1/2"	56.5	1860	50	1810
Chesapeake	Margaret Freeman	5' 1/2"	6.5	1858	21	1837
Chesapeake	Martha Houston	5' 5"	65	1858	35	1823
Chesapeake	Mahalia Houston	5' 1/2"	60.5	1858	19	1839
Chesapeake	Ann Elizabeth Scott	5' 2-3/4"	62.75	1853	25	1828
Chesapeake	Sandy	5' 4"	64	1859	28	1831
Chesapeake	Patty	5' 2 "	62	1859	40	1819
Chesapeake	Margaret	5' 2"	62	1859	22	1837

REFERENCES

Anonymous (Ed.). (1989). *Research Manuscript Series: Vol. 209*. *Archaeological Investigations of a Civil War Encampment on Folley Island, South Carolina*. Columbia, SC: South Carolina Institute of Archaeology and Anthropology.

Aptheker, H. (1937). The Event. In K. S. Greenberg (Ed.), *Nat Turner.A Slave Rebellion in History and Memory (pp.* 45-57).New York, NY: Oxford University Press.

Ashcroft, M. T., & Lovell, H. A. (1964) Heights and Weights of Jamaican Children of Various Racial Orgins. *Tropical and Geographical Medicine, 4*, 346-353.

Ashcroft, M. T., Heneage, P., & Lovell, H. G. (1966). Heights and Weights of Jamaican School-Children of Various Ethnic Groups. *American Journal of Physical Anthropology, 24*, 37-44.

Auerbach, B. M., & Ruff, C. B. (2010).Stature Estimation Formulae for Indigenous North American Populations. *American Journal of Physical Anthropology*, *141*, 190–207.

Auerbach, C. D. (2012). *Analysis of Post-Cranial Traits for the Assessment of Biological Distance Among Temporally Distinct New World Populations of African Descent* (Master's Thesis).University of Southern Mississippi, Hattiesburg, MS.

Ballagh, J. C. (1902). *A History of Slavery in Virginia*. Baltimore, MD: Johns Hopkins Press.

Berlin, I. (1974) *Slaves Without Masters- the Free negro in the Antebellum South.* New York, NY: Pantheon Books.

Berlin, I. (2000). *Many Thousand Gone: The First Two Centuries of Slavery in North America*. Cambridge, MA: The Belknapp Press of Harvard University.

Berlin, I., & Morgan, P. D. (Eds.). (1993). *Cultivation and Culture: Labor and the Shaping of Slave Life in the Americas*. Charlottesville, VA: University of Virginia Press.

Berlin, I., & Morgan, P. D. (1993). Introduction. In I. Berlin & P. D. Morgan (Eds.), *Cultivation and Culture. Labor and the Shaping of Slave Life in the Americas* (pp. 1-15). Charlottesville, VA: University of Virginia Press.

Blau, S., & Ubelaker, D. H. (Eds.).(2009). *World Archaeological Congress Handbook of Forensic Anthropology and Archaeology*. Walnut Creek, CA: Left Coast Publishing.

Bodenhorn, H. (1999). A Troublesome Caste: Height and Nutrition of Antebellum Virginia's Rural Free Blacks. *The Journal of Economic History*, *59*(4), 972–996.

Bodenhorn, H. (2002). The Mulatto Advantage: The Biological Consequences of Complexion among Free Blacks in Antebellum Virginia. *Journal of Interdisciplinary History*, *33*(1), 21–46.

Bogin, B. (1999). *Patterns of Human Growth*. Cambridge, UK: Cambridge University Press.

Carney, J. A., & Rosomoff, R. N. (2009). *In the Shadow of Slavery: Africa's Botanical Legacy to the Atlantic World*. Berkley, CA: University of California Press.

Craughwell, T. (2012). *Thomas Jefferson's Crème Brulee: How a Founding Father and His Slave, James Hemings, Introduced French Cuisine to America*. Philadelphia, PA: Quirk Books.

Crist, T. A., Pitts, R. H., & Robert, D. G. (1995). The First African Baptist Church Cemeteries: African-American Mortality and Trauma in Antebellum Philadelphia.

In D. A. Poirier & N. F. Bellantoni (Eds.), *Remembrance: Archaeology and Death* (pp. 17–49). Westport, CT: Bergin & Garvey.

Cromwell, J. (1920). The Aftermath of Nat Turner's Insurrection.*The Journal of Negro History*, *5*(2), 208–234.

Drewery, W. (1900). *The Southampton Insurrection*. Washington, DC: The Neal Company.

Drisdelle, R. (2010). *Parasites: Tales of Humanities Most Unwelcome Guests.* Berkley, CA: University of California Press.

Edge, J. T. (2007).*The New Encyclopedia of Southern Culture: Foodways* (Volume 7). Chapel Hill, NC: The University of North Carolina Press.

Egerton, D. R. (2003).Nat Turner in Hemispheric Context.In K. S. Greenberg (Ed.), *Nat Turner:A Slave Rebellion in History and Memory* (pp. 134-147). New York, NY: Oxford University Press.

Elkins, S. (1959). *Slavery: A Problem in American Institutional and Intellectual Life*. Chicago, IL: University of Chicago Press.

Fogel, R. W., & Engerman, S. L. (Eds.). (1992). *Without Consent or Contract: Conditions of Slave Life and the Transition to Freedom*. Technical Papers. New York, NY: W. W. Norton & Company.

Freehling, A. G. (1982). *Drift Towards Dissolution: The Virginia Slavery Debate of 1831-1832*. Baton Rouge, LA: Louisiana State University Press.

Genoves, S. (1967). Proportionality of the Long Bones and Their Relation to Stature in Mesoamericans. *American Journal of Physical Anthropology*, *26*, 67–77.

Genovese, E. D. (1979). *From Rebellion to Revolution: Afro-American Slave Revolts in The Making of the Modern World*. Baton Rouge, LA: Louisiana State University Press.

Gray, T. (1832). *The Confessions of Nat Turner*: Bedford, MA: Bedford/St. Martin's.

Greenberg, K. S. (Ed.). (2003). *Nat Turner: A Slave Rebellion in History and Memory*. New York, NY: Oxford University Press.

Guild, J. P. (1969). *Black Laws of Virginia: A Summary of the Legislative Acts of Virginia Concerning Negroes from Earliest Times to the Present*. New York, NY: Whittet & Shepperson.

Harris, J. B. (2011). *High on the Hog: A Culinary Journal From Africa to America*. New York, NY: Bloomsbury.

Higginson, T. W. (1889). *Black Rebellion: Five Slave Revolts*. Cambridge, MA: Public Domain Press.

Historical Census Browser. (2004) Retrieved August 17, 2013, from the University of Virginia, Geospatial and Statistical Data Center: http://mapserver.lib.virginia.edu/collections/stats/histcensus/index.html.

Haque, U. (2011). *Betterness: Economics for Humans* (Kindle Single version). Retrieved from Amazon.com

Ji, C.Y., & Chen, T.J. (2008). Secular Changes in the Stature, Weight, and Age at Secular Changes in Stature and Body Mass Index for Chinese Youth in Sixteen Major Cities, 1950s–2005. *American Journal of Human Biology*, *20*(5), 530–537.

Kahn, C. (1983). A Linear Programming Solution to the Slave Diet. In R.W. Fogel & S. L. Engerman (Eds.), *Without Consent or Contract: Technical Papers on Slavery* (pp. 1275). New York, NY: Norton Press.

Kiple, K. F., & Kiple, V. H. (1977a). Slave Child Morality: Some Nutritional Answers to a Perennial Puzzle. *Journal of Social History*, *10*(3), 284–309.

Kiple, V. H., & Kiple, K. F. (1977b).Black Yellow Fever Immunities, Innate and Acquired, as Revealed in the American South.*Social Science History*, *1*(4), 419–436.

Komlos, J. (1992). Toward an Anthropometric History of African Americans: The Case of the Free Blacks of Antebellum Maryland. In C. Goldin & H. Rockoff (Eds.), *Strategic Factors in Nineteenth Century American Economic History: A Volume in Honor of Robert Fogel* (pp. 297-329). Chicago, IL. University of Chicago Press.

Komlos, J. (1994). The Height of Runaway Slaves in Colonial America, 1720-1770. In J. Komlos (Ed.), *Stature, Living Standards, and Economic Development. Essays in Anthropometric History* (pp. 93–116). Chicago, IL: University of Chicago Press.

Legg, J. B., & Smith, M. M. (1989). The Best Ever Occupied… Volume in Anonymous (Ed.), *Research Manuscript Series: Vol. 209.Archaeological Investigations of a Civil War Encampment on Folley Island, South Carolina.*Columbia, SC: South Carolina Institute of Archaeology and Anthropology.

Mann, C. C., & Hecht, S. (2012). Where Slaves Ruled. *National Geographic*, *April*, 122-125.

Margo, R. A., & Steckel, R. H. (1992).The Nutrition and Health of Slaves and Antebellum Southern Whites. In R. W. Fogel & S. L. Engerman (Eds.), *Without Consent or Contract:Conditions of Slave Life and the Transition to Freedom.*Technical Papers (Vol. 2) (pp. 508-521). New York, NY: W. W. Norton & Company.

Masur, L. P. (2003). Nat Turner and Sectional Crisis.In K. S. Greenberg (Ed.), *Nat Turner: A Slave Rebellion in History and Memory* (pp. 148-161).New York, NY: Oxford University Press.

Mintz, S. W. (1979). Slavery and the Rise of Peasantries. *Historical Reflections, 6*, 213-242.

Northrup, S. *Twelve Years a Slave. Narrative of Solomon Northrup, A Citizen of New-York, Kidnapped in Washington City in 1841 and Rescued in 1853, from a Cotton Plantation Near the Red River in Louisiana:* Public Domain. http://docsouth.unc.edu/fpn/northup/northup.html

Ortner, D. J. (2003). Identification of Pathological Conditions in Human Skeletal Remains. New York, NY: Academic Press.

Parramore, T. C. (2003). Covenant in Jerusalem. In K. S. Greenberg (Ed.), *Nat Turner:A Slave Rebellion in History and Memory* (pp. 58-78). New York, NY: Oxford University Press.

Pennington, J. W. (1849). *The Fugitive Blacksmith; or, Events in the History of James W. C. Pennington, Pastor of a Presbyterian Church, New York, Formerly a Slave in the State of Maryland, United States*: Public Domain. http://docsouth.unc.edu/neh/penning 49/penning49.html

Phillips, U. B. (1918). *American Negro Slavery; a Survey of the Supply, Employment, and Control of Negro Labor, as Determined by the Plantation Regime*. New York, NY: D. Appleton and Company.

Poirier, D. A., & Bellantoni, N. F. (Eds.). (1997). *Remembrance: Archaeology and Death*. Westport, CT: Bergin & Garvey.

Post, P. W., F. Daniels, & R. T. Binford (1975). Cold Injury and the Evolution of 'White' Skin. *Human Biology, 47*, 65-80.

Prince, J. M., & Steckel, R. H. (2003). Nutritional Success on the Great Plains: Nineteenth-Century Equestrian Nomads. *Journal of Interdisciplinary History*, *33*(3), 353–385.

Rasmussen, D. (2011). *American Uprising: The Untold Story of America's Largest Slave Revolt*. New York, NY: HarperCollins.

Rathbun, T. A. (1987). Health and Disease at a South Carolina Plantation: 1840-1870. *American Journal of Physical Anthropology*, *74*(2), 239–254.

Rathbun, T. A., & Scarry, J. D. (1991). Status and Health in Colonial South Carolina: Bellview Plantation. In J. L. Powell, P. S. Bridges, & A. M. W. Mires (Eds.), *What Mean These Bones? Studies in Southeastern Archaeology* (pp. 148–164). Tuscaloosa, AL: University of Alabama Press.

Rathbun, T. A., & Steckel, R. H. (2002).The Health of Slaves and Free Blacks in the East. In R. H. Steckel & J. Rose (Eds.), *The Backbone of History. Health and Nutrition in the Western Hemisphere* (pp. 208–225). Cambridge, UK: Cambridge University Press.

Savitt, T. D. (1984). *Medicine and Slavery: The Diseases and Health Care of Blacks in Antebellum Virginia*. *Blacks in the New World*. Urbana, IL: The University of Illinois Press.

Scott, D. (2000, October) Evangelicism, Revivalism, and the Second Great Awakening. http://nationalhumanitiescenter.org/tserve/nineteen/nkeyinfo/nevanrev.htm

Scuili, P. W., & Geisen, M. J. (1993). Brief Communication: An Update on Stature Estimation in Prehistoric Native Americans of Ohio. *American Journal of Physical Anthropology*, *92* (2), 395–399.

Shuler, K., Danforth, M. E., & Auerbach, J. C. (2011). Challenges in Approaches to Skeletal Stature Estimation: An Example from Prehistoric Eastern Mississippi and Western Alabama. *Southeastern Archaeology, 30*(2), 337-389.

Smith, M. M. (2005). IntroductionInSmith, M. M. (Ed.), *Stono: Documenting and Interpreting a Southern Slave Revolt* (pp. xi–xvii). Columbia, SC: University of South Carolina Press.

Stanton, L. (1993). *Slavery at Monticello*. Charlottesville, VA: Thomas Jefferson Foundation.

Steckel, R. H. (1986). A Peculiar Population: The Nutrition, Health, and Mortality of American Slaves from Childhood to Maturity. *The Journal of Economic History*, *43*(3), 721–741.

Steckel, R. H. (1992). Work, Disease, and Diet in the Health and Mortality of American Slaves. In R. W. Fogel & S. L. Engerman (Eds.), *Without Consent or Contract:Conditions of Slave Life and the Transition to Freedom*(pp. 489-507). Technical Papers (Vol. 2). New York, NY: W. W. Norton &Company.

Steckel, R. H. (1994). Heights & Health in the United States, 1710-1950. In J. Komlos (Ed.), *Stature, Living Standards, and Economic Development. Essays in Anthropometric History* (pp. 153–170). Chicago, IL: University of Chicago Press.

Steckel, R. H., & Floud, R. (1997) Introduction. In Steckel, R. H., & Floud, R. (Eds.), *Health and Welfare During Industrialization*. Chicago, IL. University of Chicago Press.

Steckel, R. H. (1999). Nutritional Status in the Colonial American Colonies. *William and Mary Quarterly*, *56*(1), 31–52.

Steckel, R. H., & Rose, J. (Eds.). (2002). *The Backbone of History: Health and Nutrition in the Western Hemisphere*. Cambridge, UK: Cambridge University Press.

Stini, W. A. (1969). Nutritional Stress and Growth: Sex Difference in Adaptive Response. *American Journal of Physical Anthropology, 31*, 417-426.

Stinson, S. (1985). Sex Differences and Environmental Sensitivity During Growth and Development. *Yearbook of Physical Anthropology, 28*, 123-147.

Tanner, J. M. (1994). Introduction.In J. Komlos (Ed.), *Stature, Living Standards, and Economic Development.Essays in Anthropometric History* (pp. 1-8). Chicago, IL: University of Chicago Press.

Thornton, J. K. (2005). African Dimensions. In M. M. Smith (Ed.), *Stono: Documenting and Interpreting a Southern Slave Revolt* (pp. 73–86). Columbia, SC: University of South Carolina Press.

Veigi, G., Paggiaro, P. L., Begliomini, E., Vaghetti, E., Paoletti, P., & Giuntini, C. (1986). Respiratory Effects of Occupational Exposure to Tobacco Dust. *Occupational & Environmental Medicine*, *43*(12), 802–808.

Walsh, L. S. (1993). Slave Life, Slave Society. In I. Berlin & P. D. Morgan (Eds.), *Cultivation and Culture.Labor and the Shaping of Slave Life in the Americas* (pp. 170-201). Charlottesville, VA: University of Virginia Press.

Wiley, P. (2004). Stature Estimation. In S. Blau & D. H. Ubelaker (Eds.), *World Archaeological Congress Handbook of Forensic Anthropology and Archaeology* (pp. 236- 245). Walnut Creek, CA: Left Coast Publishing.

Wood, P. H. (2005). Anatomy of a Revolt. In M. M. Smith (Ed.), *Stono. Documenting and Interpreting a Southern Slave Revolt* (pp. 59–72). Columbia, SC: University of South Carolina Press.

Works Projects Administration (Ed.). (1936). *Slave Narratives: a Folk History of Slavery in the United States, From Interviews with Former Slaves* (Kindle Edition). Retrieved from Amazon.com