

AGRICULTURAL EDUCATION AT THE VIRGINIA MILITARY INSTITUTE
DURING THE 1850s: FORERUNNER OF PRACTICAL
HIGHER EDUCATION IN THE SOUTH

by

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ABSTRACT

Throughout the first half of the 19th Century, Virginia planters, farmers, educators, and agricultural societies wrote about the need, and advocated for, formal university agricultural education. While this need was identified as early as the 1800s, it was not until the early 1850s that the Virginia Military Institute (VMI) started offering courses in agricultural chemistry. By the mid-to-late 1850s, the success of these courses led to an expanded agricultural chemistry program based on European modes; finally, an agricultural major and discipline had been created – the only program of its kind in the state of Virginia, and one of the first in the Southern states. However, the coming war at the end of 1859 would shift the focus of educators and state leaders, prohibiting the full implementation of the agricultural education plan.

DEDICATION

For
Katharine Lintot “Katlin” Wallace
2005-2013

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There are many people to thank for their help with this project over the years. The initial idea for this study came from Colonel Edwin Dooley. Ed has done an incredible job ensuring that the history of Francis H. Smith, VMI, and the town of Lexington is preserved and accessible for future generations and historians. I learned much about the above subjects over numerous cups of coffee at VMI. He has been very generous with his time, knowledge, and writings.

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CHAPTER ONE TOBACCO IS A NASTY HABIT

Thomas Jefferson wrote in a November 1803 letter to David Williams:

In every College and University, a professorship of agriculture, and the class of its students, might be honored as the first. Young men closing their academical [*sic*] education with this, as the crown of all other sciences, fascinated with its solid charms, and at a time when they are to choose an occupation, instead of crowding the other classes, would return to the farms of their fathers, their own, or those of others, and replenish and invigorate a calling, now languishing under contempt and oppression.¹

Throughout the first half of the 19th Century, Virginia planters, farmers, educators, and agricultural societies wrote about the need, and advocated for, formal university agricultural education. While this need was identified in the early 1800s, it was not until the early 1850s that the Virginia Military Institute (VMI) started offering courses in agricultural chemistry. By the mid-to-late 1850s, the success of these courses led to an expanded agricultural chemistry program based on European modes; finally, an agricultural major and discipline had been created – the only program of its kind in the state of Virginia, and one of the first in the Southern states. However, the coming war at the end of 1859 would shift the focus of educators and state leaders, prohibiting the full implementation of the agricultural education plan.

Farming had been a vital occupation of white Virginians since shortly after the founding of the Jamestown Colony in 1607. Almost two hundred years later, crops, farming processes, and techniques had not substantially changed. Horses, oxen, and the wooden plow were still the main

¹ Ralph W. Brown, "Agriculture Science and Education in Virginia before 1860," *The William and Mary Quarterly* 19, no. 2 (1939): 199.

farming implements. As historian Harold Muddiman wrote, “Agricultural practices of early nineteenth century American farming had advanced little since the middle ages.”¹

One crop completely dominated the focus of the government, planters and farmers during the first two hundred years of the Virginia colony: tobacco. Tobacco made large fortunes for the early settlers and planters in Virginia and investors in the England. A writer from Europe observed, “Of grain and pulse they provide commonly no more than they reckon that their families will require, for there are no towns as markets where they can sell them....The one thing of which they make as much as they can is tobacco, there being always a vent for that at one time or another of the year.”²

During the colonial period, the price of tobacco held at a profitable rate. Prices were so high in the mid-1700s that a “man’s labor in tobacco production yielded him six times as large a return as might be secured from any other crop.”³ Tobacco was such a part of the everyday life of both the Virginia colony and Great Britain that the Great Seal of Colonial Virginia contained, “an Indian queen presenting on bended knee the tobacco plant to Britannia, who majestically clasps the globe and scepter.”⁴

A Spanish-American tobacco variety was known in Britain before the founding of Jamestown in 1607, prompting King James I to attack the use of tobacco with an essay entitled *Couterblaste [sic] to Tobacco*.⁵ However, in the new English colony, John Rolfe started experimentation with the West Indian tobacco variety in 1612 and found that the Virginia soil

¹ Harold J. Muddiman, "Agriculture in the Fredericksburg Area." (master's thesis, University of Richmond, 1969), 3.

² J. W. Fortescue, *America and West Indies, 15 May, 1696 - 31 October, 1697. Preserved in the Public Record Office* (London: Mackie and Co. Ltd., 1904), 1697.

³ Avery O. Craven, *Soil Exhaustion as a Factor in the Agricultural History of Virginia and Maryland, 1606-1860*, (University of South Carolina Press, 2006), 30.

⁴ Joseph Clarke Robert, *The Tobacco Kingdom, Plantation, Market, and Factory in Virginia and North Carolina, 1800-1860* (Durham, North Carolina: Duke University Press, 1938), 3.

⁵ *Ibid.*, 4.

and climate was an excellent fit for the demanding plant.⁶ Tobacco quickly took off. By 1616, it was considered the chief commodity of Virginia, and the next year over twenty thousand pounds were shipped from the colony. In 1618, tobacco imports from Virginia into England, “exceeded those from foreign countries”, and in the city of London, there were seven thousand tobacco stores around the same time.⁷ The Virginia colony had solved a problem faced by many colonies: producing goods that would create high demand in the home country, which could be exchanged for items essential to the colonies.

During the entire colonial period, tobacco shipments to Great Britain continued to increase. In the late 1630s, Virginia exported almost 1,400,000 pounds of tobacco. By 1698, combined crops from Virginia and Maryland topped 40,000,000 pounds.⁸ In the five years immediately preceding the American Revolution, Virginia planters were sending over 100 million pounds of tobacco across the Atlantic. Both Great Britain and the colony of Virginia profited from these large crops. As the mother country, Great Britain re-exported almost 90 percent of the tobacco to Europe and other markets, increasing their level of profit.⁹ The Virginia colony would place export duties on the tobacco, bringing in much money to the colony coffers, including a fee to support the College of William and Mary.

To meet the increasing demands for tobacco, farmers and planters spread further and further into the colony. As Joseph Robert wrote in *The Tobacco Kingdom*, “Under constant pressure to obtain the highest yield from his land, the planter raised three or four crops of tobacco on soils then abandoned for virgin acres.”¹⁰ Originally, tobacco was grown in the

⁶ Ibid., 4.

⁷ Ibid., 4.

⁸ Ibid., 5.

⁹ Ibid., 5.

¹⁰ Ibid., 7.

Tidewater and river plantations along the James and York Rivers. Continuing demand for more and more of the crop caused planters and farmers to head north, south and west into the interior of the state. At the end of the 1600s, tobacco farms had spread to the lowlands near the Rappahannock River, North to the Potomac River and South into the Albemarle Sound region of North Carolina.¹¹ During the middle of the 1700s, tobacco farms could be found from Tidewater countries to Hanover, Goochland, and Albemarle counties and the counties surrounding Richmond in the center of the state and continuing north into the counties around Fredericksburg.¹² In short, land from the Virginia shores to the beginning of the Shenandoah Valley was engaged in growing tobacco.

Tobacco cultivation required “constant, tedious labor and supervision” to be successful.¹³ Planters, farmers, and slaves worked in the tobacco fields; less productive planters could not afford slaves or chose not to use them for moral reasons. A survey of fifty-two small antebellum tobacco planters found that none owned slaves.¹⁴ In contrast, larger plantations required greater and constant labor, and slaves filled that void. Slave labor became a “choice made by men who sought greater returns than they could obtain from their own labor alone, and who found other types of labor more expensive.”¹⁵ However, investing in large slave populations meant that farmers and planters could not invest in other areas, such as transportation improvement; later, it would further prevent them from implementing new scientific discoveries in agriculture.¹⁶

¹¹ Craven, *Soil Exhaustion as a Factor in the Agricultural History of Virginia and Maryland, 1606-1860*, 26.

¹² Robert, *The Tobacco Kingdom, Plantation, Market, and Factory in Virginia and North Carolina, 1800-1860*, 15.

¹³ "Virginia Husbandry Tobacco. Notes on the Cultivation and Management of Tobacco" *American Farmer*, Containing Original Essays and Selections on Rural Economy and Internal Improvements, with Illustrative Engravings and Prices Current of County Produce (1819-1834). ProQuest., accessed 09/07/, 2017, <https://search-proquest-com.libproxy.tulane.edu/docview/90145484/57DB4B1C35FA45DAPQ/1?accountid=14437>.

¹⁴ Robert, *The Tobacco Kingdom, Plantation, Market, and Factory in Virginia and North Carolina, 1800-1860*, 19.

¹⁵ Kenneth M. Stampp, *The Peculiar Institution: Slavery in the Ante-Bellum South* (New York: Alfred A. Knopf, 1956), 5.

¹⁶ W.M. Mathew, “Agricultural Adaptation and Race Control in the American South: The Failure of the Ruffin Reforms,” *Slavery & Abolition* 7, no. 2 (1986): 18.

Tobacco crops only yielded a fraction per acre of what other crops did. For every two acres of tobacco grown, twenty acres of wheat or corn or eight to ten acres of cotton could be grown. An acre of tobacco would yield an average of 650 to 700 pounds of tobacco.¹⁷

Tobacco was a year-round crop. Starting every December, land was cleared, burned, and raked.¹⁸ February saw the planning of the tobacco seeds in beds, covering them with brush to protect them against frost. In the early spring, the fields for the tobacco plants were ploughed to create small hills three feet apart.¹⁹ From mid-May to mid-June, preferably on rainy days when the soil was softer, the tobacco plants were transplanted by hand from beds to the fields, with each hill receiving one plant.²⁰ After a few days, the plants that had died in the transplant process were replaced and the struggle to keep the plants alive truly began.

The fields needed constant weeding and pruning, either by hand or plow, during the entire life span of the tobacco plant. In addition to weeding, constant inspection and removal of insects, especially various worms, had to be removed by hand, further increasing the manpower needed to grow the crop.²¹ Damaged bottom leaves of the plant had to be removed in a process called “primed” and the leading stem had to be removed several weeks after planting in a process called “topping.”²² Topping required the removal of the stem of the plant before it developed a flower, depriving the rest of the plant of needed nutrition.²³ Even after topping, “suckers” or small buds, would appear between leaves and the stem. These also needed to be removed or they

¹⁷ Robert, *The Tobacco Kingdom, Plantation, Market, and Factory in Virginia and North Carolina, 1800-1860*, 18.

¹⁸ Muddiman, “Agriculture in the Fredericksburg Area,” 4.

¹⁹ William Tatham, *An Historical and Practical Essay on the Culture and Commerce of Tobacco* (London: 1800), 12-13.

²⁰ *Ibid.*, 15-16.

²¹ *Ibid.*, 17-18.

²² *American Farmer*, III (1821-1822), 282..

²³ Tatham, *An Historical and Practical Essay on the Culture and Commerce of Tobacco*, 18.

would affect the quality of the tobacco.²⁴ At the end of all these processes, the tobacco plant was left with only nine to ten leaves that could be harvested.

By the end of the summer, the leaves would thicken and lighten in color indicating that the plant was ready to be cut. Laborers, either the farmer and/or his slaves, would use sharp knives and cut the plant close to the ground. The plant was left where it was cut for several hours until it became supple and was then carried by field hands into a tobacco house for curing.²⁵ Curing, done primarily by the sun or by fire, dried the leaves to make them easier to pack for transport and for consumption.²⁶ After the curing was complete, the leaves were separated, sorted according to quality, and placed into hogsheads. A hogshead “was a barrel approximately thirty-six inches in diameter and four and a half feet in height.”²⁷ Ideally, a hogshead would hold 1500 pounds of tobacco, but usually most farmers were only able to get 1350 pounds in them.²⁸

Around 1800, the tobacco industry in Virginia received a one-two punch that destroyed the good times enjoyed by tobacco planters and farmers for almost two hundred years. The first was the French Revolution and the subsequent wars, which introduced a “generation of turmoil” on both sides of the Atlantic.²⁹ Due to the demand for food in Europe, the price of a wheat jumped higher than that of tobacco, leading many farmers and planters to abandon tobacco for wheat. The tobacco market crashed due to the war’s impact on dependable shipping to Europe and decreased demand. The price was so low that a tobacco farmer, Walter Colquhoun, wrote in 1800 that he could hardly pay the cost of his farm insurance.³⁰ After the Napoleonic wars ended in 1815, tobacco growers attempted to make a comeback in Europe, but cotton, grown originally

²⁴ Ibid., 19.

²⁵ Ibid., 24.

²⁶ Ibid., 36.

²⁷ Muddiman, “Agriculture in the Fredericksburg Area,” 7.

²⁸ *American Farmer*, III, 284.

²⁹ Robert, *Tobacco Kingdom*, 11.

³⁰ Walter Colquhoun Letter to David Allason, January 1800. Allason Papers, Virginia State Library.

in Georgia and South Carolina and later in Alabama, Mississippi and Louisiana, permanently displaced tobacco in 1803 as the top money crop in the South.³¹

The second disaster to befall the tobacco industry was the realization, by the late 1700s and early 1800s, that tobacco plants destroyed the soil. Tobacco farmers had one major objective: “obtaining of the greatest possible yield of the one staple, irrespective of the effect on the soil.”³² Planters of labor-intensive cash crops not only worried about raising and harvesting their crop but additional problems, such as government regulations, tariffs, and questionable transportation methods.³³ In order to make any money on their crops, planters and farmers “were forced to centre [sic] their efforts upon the most profitable single crop” with soil-conservation agriculture out of the question.³⁴

Multiple crops of tobacco plants, grown over three or four years on the same acreage, robbed the soil of nitrogen, phosphorus, and calcium.³⁵ Additionally, overall poor soil conservation had led to other problems with soil, as well as farm in general. Repeated cultivation of one crop on the same piece of land, using poor implements and plows, resulted in the scrapping of only the surface soil.³⁶ This displaced soil washed away during rainstorms, forming gullies and sinkholes in fields, which made them unusable. All these problems resulted in soil erosion, depletion of plant food materials, and increase in soil toxicity and growth of harmful organisms.³⁷ Poor farming techniques with other crops were also causing damage to the soil. The hurried switch to planting wheat crops led farmers to use crude methods of planting and treading

³¹ Robert, *Tobacco Kingdom*, 3 & 11.

³² *Ibid.*, 23.

³³ Avery O. Craven, “The Agricultural Reformers of the Ante-Bellum South,” *The American Historical Review* 33, no. 2 (1928): 303.

³⁴ *Ibid.*, 303.

³⁵ Allan Kulikioff, *Tobacco and Slaves: The Development of Southern Cultures in the Chesapeake, 1680-1800* (Durham: Chapel Hill, 1986), xv.

³⁶ This was also referred to as “skimming the crème.” Turner, *Virginia Agricultural Reform, 1815-1860*, 80.

³⁷ Craven, *Soil Exhaustion as a Factor in the Agricultural History of Virginia and Maryland, 1606-1860*, 162-163.

out wheat with oxen that caused the grain to be low quality, full of weeds and dirt. By 1825, due to these poor farming techniques and combined with the ravages of the Hessian fly (which fed on the sap of plants so they could not bear grain) and lack of nutrients in the soil, wheat was no longer being grown in large quantities in Virginia.³⁸

The result was that “the land east of the Shenandoah Valley seemed to be utterly exhausted.”³⁹ Contemporary writers described former farms and Virginia landscapes as scenes of “devastation,” “desolation,” and “mutilation.”⁴⁰ A farmer, writing in an 1842 agricultural journal, stated that the earth had been skinned as if it were an animal dragged to the slaughter.⁴¹ For Virginia planters and farmers, the “crisis came when the wasteful methods learned in a period of land plenty carried over to a time of scarce virgin soil, and when the same agriculture technique on new Western lands was producing bumper crops.”⁴² A result of the tobacco and soil troubles was the migration of younger planters and farmers from Virginia to the frontier, outside of the state. Starting around 1810 and lasting for the next twenty years, thousands of men left the state for Texas, Arkansas, Alabama, Mississippi, Louisiana, and other Southern states to try new crops in undisturbed areas.

In researching his book *Soil Exhaustion as a Factor in the Agricultural History of Virginia and Maryland, 1606 – 1860*, historian Avery Craven discovered that from 1820 – 1830, Virginia’s population increase fell from 37.5% to 13.5% due to migration to other parts of the United States. A total of 92,625 whites, mostly from the eastern section of the state, left Virginia

³⁸ Kathleen Bruce, “Materials for Virginia Agricultural History,” 4. Historian Reginald C. McGrane wrote that the Hessian fly caused a severe crop shortage in 1836 contributing to the financial panic of 1837. McGrane, Reginald Charles, *The Panic of 1837: Some Financial Problems of the Jackson Era* (Russell & Russell: New York, 1924), 92.

³⁹ Joan E. Cashin, “Landscape and Memory in Antebellum Virginia,” *The Virginia Magazine of History and Biography* 102, no.4 (1994): 480.

⁴⁰ *Ibid.*, 480.

⁴¹ “Agricultural Report...” *Southern Planter* (Sept. 1842): 259.

⁴² Robert, *The Tobacco Kingdom, Plantation, Market, and Factory in Virginia and North Carolina, 1800-1860*, 24.

during this decade.⁴³ Value of land plummeted, and abandoned farms and homes became a common sight. Political leaders and the conservative planter class, already worried about the reduced capacity of Virginia soil, became alarmed at what would happen to Virginia's perceived leading role in the United States if the state continued to lose population and the damaged soil would not support crops.⁴⁴

Writers were also worried about the influence that Virginia would continue to occupy in the United States if her farms disappeared and her planters and farmers immigrated to greener pastures. Jamestown, being the first English settlement in the colonies, was portrayed as a "sacred" place. It was in Virginia that Anglo-American farming began.⁴⁵ A writer in the *Southern Planter* agricultural magazine declared, "We are the oldest agricultural people in the Union."⁴⁶ The planter and politician class realized something had to be done, and soon agricultural societies were being formed to educate farmers and other planters on the best farming practices. Other agriculturalists began to experiment with various ways to revive the soil. The race was on to save Virginia agriculture.

⁴³ Craven, *Soil Exhaustion as a Factor in the Agricultural History of Virginia and Maryland, 1606-1860*, 123.

⁴⁴ Cashin, "Landscape and Memory in Antebellum Virginia," 482.

⁴⁵ *Ibid.*, 481.

⁴⁶ "Dr. Archer's Address," *Southern Planter* (July 1841).

CHAPTER TWO FOUNDING FARMERS

Upon realizing that poor farming practices were destroying the soil and causing agricultural problems in Virginia, the planter class made repairing and restoring the damaged soil a priority, educating farmers on best practices and stopping the migration of young farmers out of the state. This turned into a multi-pronged effort, from around 1810 into the 1850s that included the creation of local and state agricultural societies, the rise of agriculture journals, and calls for agriculture education, both for current and future farmers. To instill a sense of pride in Virginia farmers and planters, many pro-agriculture writers during this time decided to re-emphasize the country's Founding Fathers and their contributions to agriculture.¹

George Mason, James Madison, Patrick Henry and Richard Henry Lee were listed among Virginia's "Founding Farmers," but the ideal examples of country gentlemen and farmers were George Washington and Thomas Jefferson.² Washington, labelled by one historian as "one of the greatest agricultural educators that Virginia has known," continuously searched for ways to make his farms more efficient.³ Washington corresponded with many agricultural leaders in England, notably Arthur Young, Dr. James Anderson and Sir John Sinclair, as well as throughout the new United States, looking for information on the latest in fertilizers, seeds and knowledge

¹ Cashin, "Landscape and Memory in Antebellum Virginia," 485.

² Ibid., 481. Cashin writes "Antebellum Virginians continued to be extremely proud of the state's leadership, which had metaphorical roots in the land itself, 'fertile in the production of patriots and statesmen.' Writers celebrated the luminaries – George Washington, George Mason, Thomas Jefferson, James Madison, Patrick Henry, and Richard Henry Lee – whom they portrayed as great statesmen and good farmers, united politically and on friendly terms personally.", Cashin, "Landscape and Memory in Antebellum Virginia," 481-481.

³ Ralph M Brown, "Agriculture Science and Education in Virginia Before 1860," *The William and Mary Quarterly* 19, no. 2 (1939): 198.

on fighting plant disease and cultivation. His correspondence with Arthur Young was published in 1837 in the agricultural journal *Farmers' Register* and “revealed in great detail just how systematic and knowledgeable Washington was about running his Mount Vernon estate.”¹

Washington’s efforts resulted in him being named an honorary member of the English Board of Agriculture in 1797, and of the Philadelphia Society for the Promotion of Agriculture, the first agricultural society in the United States, in 1785.²

When Washington discovered that his biggest cash crop at the time, tobacco, was robbing the soil of nutrients, he stopped planting it and instead grew other crops to try to restore the soil’s fertility.³ He also rotated his crops, first with a five-year rotation and later a seven-year rotation.⁴ Washington utilized improved or new agricultural tools, such as threshing machines, and created designs from his own study and research, such as the 16-sided barn on his Dogue Run farm. This barn design allowed animals to separate grain from stalk by treading in a circle.⁵ He had such success with growing wheat instead of tobacco that he shipped flour to the West Indies and elsewhere.

Washington was a critic of farming techniques of the time, and he wrote of the “carelessness of most Americans farmers and of Virginians in particular, whom he described in 1787 as the nation’s worst.”⁶ As President, Washington used his office to improve and advance agriculture in the young United States. In his last annual message to Congress in 1796, he wrote

¹ Cashin, “Landscape and Memory in Antebellum Virginia,” 486.

² Mount Vernon, “George Washington and Agriculture,” 2018, <http://www.mountvernon.org/digital-encyclopedia/article/george-washington-and-agriculture/>.

³ Brown, “Agriculture Science and Education in Virginia Before 1860,” 198.

⁴ Mount Vernon, “George Washington and Agriculture.” Englishman Arthur Young suggested that Washington reconfigure his fields to the seven-field system. This allowed Washington the ability to have wheat as a principle cash crop, corn for domestic food needs and legumes to rejuvenate the soil.

⁵ Dennis J. Pogue, “16-Sided Barn,” 2018, <http://www.mountvernon.org/digital-encyclopedia/article/16-sided-barn/>. The structure was polygonal instead of circular because constructing straight sides instead of curved walls was easier.

⁶ Cashin, “Landscape and Memory in Antebellum Virginia,” 486.

that agriculture was of primary importance to the country and that institutions promoting agriculture should be supported by the public purse.⁷

Not to be outdone, Jefferson was christened as the “founder of modern American agriculture” by an admiring writer.⁸ Among the various agricultural improvements Jefferson made were deducing the ideal shape and angle of the plow moldboard, making plows out of iron instead of wood, and working on a schedule for the rotations of crops.⁹ Jefferson favored farming over other professions, and based his ideal society on agriculture, writing that “Cultivators of the earth are the most valuable citizens...they are tied to their country and wedded to its liberty and interest.”¹⁰

Jefferson was distressed to hear of the migration of farmers out of Virginia due to poor soil conditions.¹¹ He blamed tobacco for the poor soil, writing:

It is a culture productive of infinite wretchedness. Those employed in it are in a continual state of exertion behold the power of nature to support. Little food of any kind is raised by them; so that the men and animals on these farms are illy [sic] fed, and the earth is rapidly impoverished.¹²

Jefferson continued to rail against what he saw as tobacco’s failure, not just as an agricultural problem but the overall effect it had on the Virginia countryside, as well as planters and farmers. His outlook caused some planters in the state to stop planting and growing tobacco. John Hartwell Cocke, co-founder with Jefferson of the University of Virginia, ceased growing the leaf

⁷ Brown, “Agriculture Science and Education in Virginia Before 1860,”198.

⁸ Claude R Wickard, “Thomas Jefferson - Founder of Modern American Agriculture,” *Agricultural History*, n.d.: 179–80. Other writers, especially contemporaries of Jefferson, were not so kind. When Jefferson passed away, the agriculture journal *American Farmer* had only a single brief notice and John Wickham, a Jefferson antagonist, wrote, “Mr. Jefferson’s reputation does not rest on his knowledge of agriculture.” Cashin, “Landscape and Memory in Antebellum Virginia,”484.

⁹ Brown, “Agriculture Science and Education in Virginia Before 1860,”199.

¹⁰ E. Merton Coulter, “Southern Agriculture and Southern Nationalism Before the Civil War,” *Agricultural History* 4, no. 3 (1930): 79.

¹¹ Betty L. Mitchell, *Edmund Ruffin A Biography* (Bloomington: Indiana University Press, 1981), 8.

¹² P. L. Ford, ed., *Writings of Thomas Jefferson, 10 Vols.* (New York, 1892), III, 271.

due to Jefferson's influence and wrote many articles suggesting planters and farmers do the same thing.¹³ Cocke went so far as to give boys anti-tobacco medals to convince them not to grow tobacco when they grew up.¹⁴

Additional authors took Jefferson's dislike of the plant and linked the cultivation of tobacco to other problems in Virginia. R. J. Gaines wrote lengthy essays on the agricultural culture in Virginia and claimed that tobacco, because of its intensive labor demands, discouraged white labor and was the chief cause of social problems in the state.¹⁵ Another planter in Henrico County, outside of Richmond, wrote in 1837:

Of all the causes which have produced the present dilapidated appearance of Virginia, and prevented agricultural improvements, the most operative have been the cultivation of tobacco and the existence of slavery: - I mean *negro* Slavery, in contradistinction to *white* Slavery.¹⁶

The attacks on tobacco by some of the leaders of the state did not go unanswered by tobacco farmers and were viewed as hypercritical by those lacking the resources of planters. In response to an essay that John H. Cocke wrote, J. B. McClelland stated that Cocke could afford to eliminate tobacco, as Cocke had another plantation and a money crop, cotton, located in the cotton belt. Due to Cocke's essays, McClelland had abandoned tobacco for other crops, but after a "fair and honest trial," had failed at making money on them. He closed by saying that while he did not have another plantation in the cotton belt like Cocke, his slaves were now in the Alabama cotton belt because he had to sell them due to his financial losses.¹⁷

¹³ Robert, *The Tobacco Kingdom, Plantation, Market, and Factory in Virginia and North Carolina, 1800-1860*, 27.

¹⁴ *Ibid.*, 27.

¹⁵ *Farmers' Register*, II (1834-1835), 601.

¹⁶ *American Farmer*, XV (1833-1834), 138-141.

¹⁷ *Southern Planter*, IX (1859), 72.

These debates between those who were against tobacco cultivation and those for it had, as one historian called it, “a healthy effect” on agriculture in Virginia.¹⁸ Openly discussing agricultural problems in the state caused planters and farmers to look critically at the crops they were planting, find remedies for unhealthy soil, how and if slavery should be employed in agriculture, create new tools to make their toil easier, and use science to improve the agricultural process. One of these planters turning a critical eye toward Virginia’s agriculture was John Taylor of Caroline County, Virginia.

Taylor was a politician and contemporary of Jefferson.¹⁹ He was also an avid agriculturalist, conducting experiments at “Hazlewood,” his Rappahannock River plantation.²⁰ Writing to Jefferson in 1795, Taylor stated, “There is a spice of fanaticism in my nature upon two subjects – agriculture and republicanism, which all who set it in motion are sure to suffer by.”²¹

Taylor started publishing his essays on agricultural experimentation starting in 1803 and in 1813 collected these essays, public addresses, and private correspondence into a book, *Arator: Being a Series of Agricultural Essays, Practical and Political*.²² This book was the first important work on agriculture written by a Southerner, and the ideas presented quickly became the talk of many planters throughout the state.²³ One planter wrote about Taylor, “his opinion was in the mouths of everybody; and I was then young enough to believe confidently all Virginia would soon be a perfect garden.”²⁴ Edmund Ruffin wrote that the book, “opened the eyes of

¹⁸ Robert, *The Tobacco Kingdom, Plantation, Market, and Factory in Virginia and North Carolina, 1800-1860*, 29.

¹⁹ He was one of the “earliest literary protagonist of State’s rights.” Kathleen Bruce, “Virginian Agricultural Decline to 1860 - A Fallacy,” *Agricultural History Society* 6, no. 1 (1932): 4.

²⁰ Mitchell, *Edmund Ruffin A Biography*, 10.

²¹ John Taylor to Thomas Jefferson, March 5, 1795, Library of Congress.

²² Mitchell, *Edmund Ruffin A Biography*, 10.

²³ Kathleen Bruce, “Virginian Agricultural Decline to 1860 - A Fallacy,” *Agricultural History Society* 6, no. 1 (1932): 4.

²⁴ Mitchell, *Edmund Ruffin A Biography*, 10.

many in this part of the country to see that agriculture ought to be and did embrace more than simply cutting down trees, grubbing and plowing land.”²⁵

Taylor used statistics to show Virginians that their new prosperity was artificial due to the recent conflicts in Europe and that agriculture was declining.²⁶ However, there was hope for the farmer. Taylor revealed in his book that vegetable material, such as corn stalk, could be added to animal matter to improve manure. He also introduced his “enclosing system” of setting aside non-grazing fields allowing vegetable growth to die and rot on the field. The fields would then become self-manuring.²⁷

While Taylor’s work was the first big step in looking at Virginia agriculture in a new way, his writings contained some errors. He recommended methods that were applicable only to originally fertile but now poor lands which were capable of improvement by vegetable manures such as his own plantation in the Tidewater region. He did not understand agricultural chemistry and the value of mineral manures such as marl (clay, lime, and crushed oyster shells) or lime to rejuvenate soil.²⁸ Vegetable manures would not be the cure-all for Virginia’s soil woes. However, Taylor was the first great leader for agricultural improvements in Virginia. As historian Kathleen Bruce writes of Taylor, “he incited her (Virginia) young men to study agriculture seriously and personally to direct their estates.”²⁹

One person on whom Taylor had an enormous effect on was Edmund Ruffin. Ruffin was born in 1794 at “Evergreen,” his family’s plantation along the James River in Prince George County, Virginia. He attended the College of William and Mary for two years, from 1810 to

²⁵ *Farmers’ Register*, II. 12-14.

²⁶ Kathleen Bruce, “Virginian Agricultural Decline to 1860 - A Fallacy,” *Agricultural History Society* 6, no. 1 (1932): 5.

²⁷ *Ibid.*, 6.

²⁸ *Ibid.*, 6.

²⁹ *Ibid.*, 6.

1812, but was dismissed for academic incompetence and returned to the plantation after his father's death.³⁰ Now a young planter responsible for the family plantation, Ruffin quickly discovered that the family lands were in a deplorable very poor state. Ruffin wrote that his acres would only produce ten bushels of corn and no more than six bushels of wheat.³¹ He threw himself into improving the land, soil and crops on the plantation and began to study all available agricultural literature. Ruffin also started his own experiments. Attempting to reclaim 32 of 300 acres of tide marsh along the James River, he drained the section over a period of a few years. The reclaimed land produced three large corn crops, followed by three more of declining quantity and quality.³² Defeated, Ruffin allowed the river to reclaim the exhausted soil.

By this point, Ruffin was ready for new ideas; in Taylor's book, he found them. *Arator* was published the same year in which Ruffin took control of his plantation. The book and Taylor were a revelation to Ruffin. He later recalled that Taylor "was to us as the sound of the trumpet in the struggle for life and death in the field of battle."³³

Ruffin began to implement Taylor's *Arator* recommendations to help his soil. He attempted to "enclose" his fields, allowing vegetable growth to die and rot on the field, but this ended in "utter disappointment."³⁴ Adding vegetable material to animal manure fared even less. Ruffin wrote that the "improved" manure "produced little of the expected effect" and that clover would not grow for him.³⁵

³⁰ W.M. Mathew, *Edmund Ruffin and the Crisis of Slavery in the Old South The Failure of Agricultural Reform* (Athens: The University of Georgia Press, 1988), 20. Brown, "Agriculture Science and Education in Virginia Before 1860," 202.

³¹ Avery O. Craven, *Edmund Ruffin Southerner* (New York: Appleton and Company, 1932), 53.

³² Mitchell, *Edmund Ruffin A Biography*, 10.

³³ Edmund Ruffin, "Address to the Agricultural Society of the Rappahannock," 1833.

³⁴ Craven, *Edmund Ruffin Southerner*, 53.

³⁵ *Ibid.*, 53.

Ruffin continued to implement Taylor's recommendations for over five years without any increase in soil health or growth in crops. He wrote that Taylor's methods "proved either profitless, entirely useless or absolutely and in some cases greatly injurious."³⁶ Dejected, Ruffin decided to sell the plantation in 1817 and move to the "rich western wilderness" along with so many other planters and farmers from Virginia.³⁷ However, he could not find a buyer. So many others in the area were trying to sell their farms and land that a glut had formed. Ruffin wrote about the "impossibility of finding a purchaser, unless at half the then very low estimated value."³⁸

Ruffin, rejected and depressed, returned to the proverbial drawing board. Then, by chance, he read a copy of Sir Humphrey Davy's *Elements of Agricultural Chemistry* and discovered something that would change agriculture in both the state of Virginia and throughout the United States. Ignorant of chemistry when he first started reading the book, he was struck by Davy's statement that sterile soils containing "the salt of iron, or any acid matter... may be ameliorated by the application of quick-lime."³⁹ Ruffin reasoned that soil acidity negated vegetable manures, and that naturally occurring lime or marl could and would counteract this acidity and return the soil to a more fertile state.⁴⁰ Marl, a chemical mixture of clay and carbonate of lime, was common around the Tidewater region of Virginia.

Observing that pine trees and other plants containing vegetable acids grew quite well in fields that were no longer fit for crops, Ruffin tested the soil and found that it was lime-free. The same pine trees and other plants did not grow in areas where the soil was known to be calcareous or containing marl.⁴¹

³⁶ Ibid., 53.

³⁷ Mitchell, *Edmund Ruffin A Biography*, 12.

³⁸ Ibid., 13.

³⁹ Craven, *Edmund Ruffin Southerner*, 54.

⁴⁰ Brown, "Agriculture Science and Education in Virginia Before 1860," 202.

⁴¹ Mitchell, *Edmund Ruffin A Biography*, 13.

Davy had used lime to counteract the presence of mineral acids. Ruffin experimented and found that lime and marl would have the same effect on organic vegetable acids. Convinced that this was a solution, Ruffin conducted an experiment, applying between 125-200 bushels of marl per acre to certain fields, while leaving others marl-free.⁴² At harvest, the fields containing marl increased corn and wheat production 40% over the fields that were not treated with marl.⁴³

Ruffin was ecstatic and quick to share his discovery with other planters and farmers in the region. In October 1818, he presented a paper to the Prince George Agricultural Society about the benefits of marl. He was only twenty-four years old. If he was expecting praise or exhortations from the crowd for his work, he was disappointed. For years, farmers and planters had heard of different “miracle cures” for their soils which had not worked, and they were suspicious of a young man a few years out of college, who had very limited farming experience. Most farming knowledge was passed down from generation to generation and had been proven in the fields over many years. A young man using “book farming” and “chemistry” was not going to fix their soil problems.⁴⁴

Despite this, Ruffin did not give up on spreading the word about marl. In 1821, he published an updated version of his paper in *American Farmer*, a new agricultural magazine. Ruffin found a new and enthusiastic audience for his work, and soon other agriculturalists in the South were heaping praise on the young planter. As one reviewer wrote, “a plain, practical, unpretending farmer has undertaken to examine into the real composition of the soils which he possesses and has to cultivate.”⁴⁵ His initial paper grew into an agriculture journal and then into a

⁴² Ibid.,14.

⁴³ Craven, *Edmund Ruffin Southerner*,55. The experiments with marl were not entirely new, with marl efforts in Maryland already underway at the same time. It was Ruffin who publicized the findings and came to his findings without knowledge of other experiments. Craven, *Soil Exhaustion in Virginia and Maryland, 1606-1860*, 136.

⁴⁴ Mitchell, *Edmund Ruffin A Biography*, 14.

⁴⁵ Craven, *Edmund Ruffin Southerner*, 56.

book, *An Essay on Calcareous Manures*. Ruffin continued to experiment and add information from his experiments to the book, which went through five editions, growing from 116 pages in the 1835 edition to 493 pages in the 1852 edition.⁴⁶ In 1895, the United States Department of Agriculture called the book the “most thorough piece of work on a special agricultural subject ever published in the English language.”⁴⁷

The immediate reaction to Ruffin’s experiments was an increase in crop yield and land value. Farmers that followed Ruffin’s advice of using marl saw an increase in corn and oats at 16 bushels and 8 wheat bushels per acre compared to farmers not using marl who averaged only 8 bushels of corn and oats and 4 bushels of wheat.⁴⁸ Increases in land values for the marl farmers was approximated at \$483,000 (not adjusted for inflation) and the intrinsic value of the land increased fully 20 percent.⁴⁹ In the preface to the 1842 edition of the *Essay on Calcareous Manures*, Ruffin estimated Tidewater area land values had increased from \$90,000 in 1829 to \$211,930 in 1839 mainly due to his marl experiments and other experiments using lime to replenish the soil.⁵⁰

Williamsburg, home of the College of William and Mary where Ruffin briefly attended college, saw the most dramatic recovery. Located in the Tidewater area of Virginia, an acre of land in 1820 was selling at one dollar an acre, with three dollars considered a good price. Possessing a large amount of natural marl in the area and armed with the results of Ruffin’s experiments, the area quickly started using marl. As a result, from 1835 to 1850, the value of land acres and houses tripled in value. Financially, the College of William and Mary was spared

⁴⁶ Craven, *Soil Exhaustion as a Factor in the Agricultural History of Virginia and Maryland, 1606-1860*, 136.

⁴⁷ W. P. Cutter, *Yearbook of the United States Department of Agriculture, 1895* (Washington, D. C., 1895), 493.

⁴⁸ Bruce, “Virginian Agricultural Decline to 1860 - A Fallacy,” 8.

⁴⁹ *Ibid.*, 8.

⁵⁰ *Ibid.*, 12.

from closing due to the resurrection of Tidewater farming. The college increased enrollment from 17 students in 1834 to 140 for the 1839-1840 school year.⁵¹ Ruffin's experiments saved parts of Virginia from financial ruin due to depleted soil.⁵²

Prior criticisms of his work on marl had stung Ruffin deeply, but they made him an early advocate for agricultural education, for the current and future farmer, which continued throughout his lifetime. Ruffin also believed his accomplishments were underappreciated because farmers were suspicious of book farming and trying new "scientific" techniques.⁵³

Ruffin had a lasting association with Virginia's agricultural community, serving as Secretary of the United Agricultural Society of Virginia in 1818, Secretary of the State Board of Agriculture in 1840, President of the Virginia State Agricultural Society in 1845, and Agricultural Commissioner of Virginia in 1854.⁵⁴ As Ruffin gained attention for his work, he started an agricultural magazine and used his fame and passion for agriculture and chemistry to travel, write, and speak extensively on agricultural education. Ruffin believed it was necessary to challenge the perception that farming was an art, instead of a profession requiring formal education.

Ruffin was also involved in various state agricultural societies. As historian Frederick Carr wrote, Ruffin's discoveries and other agricultural activity "led to the diffusion of information on farm topics" by local and state societies.⁵⁵ Agricultural societies were created around 1810 by planters to promote agriculture in the state through a diffusion of information.

⁵¹ Ibid., 9.

⁵² Other planters and farmers were also experimenting at the same time with marl and lime to improve the soil. The most famous of these was Fielding Lewis who experimented with lime and was instrumental in proving that lime could be as useful as marl, especially in areas that did not contain large amounts of marl. Ibid., 11.

⁵³ Ibid., 8.

⁵⁴ Jennings C. Wise, "A Special Report to the Board of Visitors of the Virginia Military Institute on The History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture," 6.

⁵⁵ Frederick Francis Carr, "The Southern Planter, 1841-1861" (master's thesis, University of Richmond, 1971), 4.

These societies served various roles to communities and later in Virginia. One-part fraternal organization, and one-part lobbying organization, the societies also promoted various educational aspects of farming, including manure usage, restoring nutrients to the soil, rotating crops, and dealing with pests among other issues.

Formed in 1811-1812, the Virginia Agricultural Society (also called the Virginia Society for the Promotion of Agriculture) was the first agriculture society in Virginia. Jefferson, John Marshall, James Garnett, and John Taylor, author of the *Arator*, were all members, and Taylor served as the society's president.⁵⁶ It reached a peak membership of 220, but by the late 1820s, membership declined. In the 1830s, the society was reorganized as the Virginia Central Society.⁵⁷

Other societies were focused around towns and counties, such as the Albemarle Agricultural Society, formed in 1817 in Charlottesville, and the Fredericksburg Agricultural Society, formed in 1818. The Albemarle society, the first local society in the state, counted among its members Thomas Jefferson, James Madison, John Skinner (the publisher of the *American Farmer* journal), and Joseph Correa de Serra, Minister of Portugal and Brazil, who had an interest in American agriculture.⁵⁸ The Fredericksburg Agricultural Society selected James Garnett at its president, an office he would hold for twenty years. Garnett was a leading agricultural reformer and criticized Virginia farmers for neglecting to improve their agricultural practices. He would eventually be elected president of the Agricultural Society of the United States.⁵⁹

⁵⁶ Brown, "Agriculture Science and Education in Virginia Before 1860," 199.

⁵⁷ Harold J Muddiman, "Agriculture in the Fredericksburg Area," 52.

⁵⁸ Charles Turner, "Virginia Agricultural Reform 1815-1860," 81.

⁵⁹ Harold J Muddiman, "Agriculture in the Fredericksburg Area," 53.

Soon, many towns and counties in the state had agricultural societies. Roanoke founded one in 1820 and from 1820 to 1850, Williamsburg, Fincastle, Rockbridge, Winchester, Jetersville, Ayletts, Henrico, Port Royal, Tappahannock, King William, Orange, Hanover, Charles City, Loudoun, Gloucester, and Prince George formed their own societies.⁶⁰ In the Rockbridge society, discussions topics included “agricultural education, crop rotation, and the proper use of lime,” while the Roanoke society discussed the “best methods to cultivate soil, the proper way to feed stock, and the best manures.”⁶¹ Area newspapers published society lectures to spread the word on farming techniques to other societies and non-member farmers. Most of the societies also created and supported local agricultural fairs, which held livestock competitions, and allowed farmers to sell their crops, as well as to see the latest in agricultural science, equipment, and technology.

The societies were also interested in lobbying the state legislature on a variety of different subjects, including tariff reform, state aid for agriculture, and agricultural education at state universities. Calls for agricultural education had been appearing in speeches and in articles in the early 1800s. James M. Garnett, in an 1818 address to the Virginia Agricultural Society, stated, “To form a farmer of the first order requires a rare combination of experience, good sound common sense, and scientific acquirement.”⁶² Thomas Jefferson said of agriculture as an academic subject, “It is a science of the very first order. It counts among its handmaids the most respectable sciences such as chemistry, natural philosophy, mechanics, mathematics generally, natural history, botany.”⁶³

⁶⁰ Ibid., 81-82.

⁶¹ Ibid., 81.

⁶² James M. Garnett, “An Address Delievered Before the Virginia Agricultural Society of Fredericksburg, at the Organziation Thereof, October 28, 1818,” 1818.

⁶³ Wickard, “Thomas Jefferson - Founder of Modern American Agriculture,” 180.

In 1822, the Albemarle Agricultural Society passed a resolution on agricultural education, which was presented by its president, James Madison. The resolution stated that establishing a professorship of agriculture at the University of Virginia would “hasten and perpetuate the march of agricultural improvement” already begun in the state.⁶⁴ Important links between chemistry and agriculture were already being seen. Later in the address, Madison wrote, “Agriculture is a field on which it [chemistry] has already begun to shed its rays, and on which it promises to do much towards unveiling the processes of nature, to which the principles of Agriculture are related.”⁶⁵ Madison went further to state that the society was giving the amount of one thousand dollars to create the faculty position and called upon other agricultural societies in the state to solicit donations, “not to exceed one dollar from individuals in every part of this Commonwealth.”⁶⁶ In response, the Agricultural Society of Surry County sent \$100 and the president of the Fredericksburg Society sent a letter of approval.

According to historian Ralph Brown, the resolution met with little interest from the University of Virginia Board of Visitors, and when the university opened in 1825, it did so without a professor of agriculture.⁶⁷ Instead, agriculture was called “rural economy” and was one of six science classes taught by a single professor.⁶⁸ After the failure of the University to establish an agriculture professorship, Jefferson recommended “seasonable alliances” for agriculture courses, “with the kindred subject of Chemistry, Botany and Zoology.”⁶⁹

A second attempt was made to establish an agricultural professorship in 1831. During the Virginia legislative session, James Barbour submitted two resolutions to the Committee on

⁶⁴ Brown, "Agriculture Science and Education in Virginia Before 1860," 200.

⁶⁵ H. G. Good, “Early Attempts to Teach Agriculture in Old Virginia,” *The Virginia Magazine of History and Biography* 48, no. 4 (1940): 344.

⁶⁶ Brown, “Agriculture Science and Education in Virginia Before 1860,” 200.

⁶⁷ *Ibid.*, 201.

⁶⁸ Good, “Early Attempts to Teach Agriculture in Old Virginia.,” 342.

⁶⁹ *Ibid.*, 342.

Agriculture to establish an agricultural chair at the University of Virginia and to purchase a model farm connected with the position. During the debate on the bill, Barbour noted the “deplorable state of Agriculture” and stated that agricultural knowledge was needed to correct the situation and protect the “liberties of man.”⁷⁰ After “heated debate,” the bill was postponed indefinitely. Successful efforts to establish agricultural education at Virginia colleges would take another twenty years.

Membership in agricultural societies waxed and waned during the period of 1820 and 1850. According to historian Charles Turner, the societies failed to maintain their strong initial support, county and city organizations were usually too small to be effective, lobbying legislative support for agriculture surveys and agriculture education was lacking, and there was no strong state society to coordinate the message.⁷¹ Society officers rarely changed over several years, indicating that local farmers did not have much interest in them.⁷² Other criticisms were leveled against the societies:

The agriculture societies hold the power of doing increased good, and as the gentlemen who have the direction of the funds of these societies have no private views to answer, but are laboring in the most disinterested manner, solely for the public good, we know them too well to fear giving offense by any suggestions, which have no other object than the public good and which while not be submitted without a perfect respect for their public spirit and superior judgment.⁷³

As the Revolutionary War generation passed away in the 1820s and 1830s and a new generation emerged, agriculture science evolved, the public perception of the farmer changed, and a new medium was created to connect with farmers. Agricultural magazines started to appear in the south around 1820, and over the next twenty years, several journals were published.

⁷⁰ Ibid.,346.

⁷¹ Charles W Turner, “Virginia Agricultural Reform , 1815-1860,” *Agricultural History Society* 26, no. 3 (1952): 82.

⁷² Muddiman, “Agriculture in the Fredericksburg Area,”57.

⁷³ *Farmers Register*, 6: 521.

These included *Farmer's Register*, the *Southern Literary Messenger*, the *Southern Planter*, *De Bow's Review*, and the *American Farmer*.⁷⁴ These journals and their articles were focused on “the atmosphere of the ideal agriculturist.”⁷⁵

The first agricultural magazine was *Agricultural Museum*, published in Georgetown from 1810 to 1812.⁷⁶ *American Farmer* was another early magazine printed in Baltimore from 1819 to 1834. The journal contained many articles about Virginia agriculture, and the Fredericksburg Agricultural Society singled out the publisher, John Skinner, for praise.⁷⁷

These magazines reached an audience of thousands throughout their state and in other states, something that agricultural societies could not accomplish. Most of the editors and authors of these magazines were educated, middle-aged slave owners and planters from both political parties.⁷⁸ These journals carried many articles similar to what agricultural societies presented: the importance of making good maps of fields; four-field crop rotation; restoring exhausted land by planting clover; spreading plaster of paris; using animal manure for fertilizer; building hedges and fences to protect land from livestock.⁷⁹

One major area where they differed from agricultural societies was their effort to depict agriculture as a profession and scientific endeavor. Historian Joan Cashin writes that farmers were suspicious of “book farming” and instead relied on traditional methods of farming handed down through generations.⁸⁰ The authors of the agricultural magazines challenged these traditional methods by writing about “scientific” experiments and new scientific methods to

⁷⁴ Cashin, "Landscape and Memory in Antebellum Virginia," 477.

⁷⁵ Coulter, "Southern Agriculture and Southern Nationalism Before the Civil War," 78.

⁷⁶ L. C. Gray, *History of Agriculture in the Southern United States to 1860 Vol. 1 and 2* (Washington, D. C., 1933). 788.

⁷⁷ Muddiman, "Agriculture in the Fredericksburg Area," 58.

⁷⁸ Cashin, "Landscape and Memory in Antebellum Virginia," 476. As Cashin notes, most period writers used the terms planter and farmer interchangeably.

⁷⁹ *Ibid.*, 489.

⁸⁰ *Ibid.*, 487.

improve agriculture, especially chemistry. There was a concentrated effort in these periodicals for agriculture to be considered a profession, like that of a lawyer or doctor.

Edmund Ruffin started his own agricultural magazine, *Farmer's Register*, which was published from 1833 to 1842. The purpose of the magazine was to “improve communications among the farmers of the state.”⁸¹ Ruffin wrote most editorials and scientific articles himself. The content and high standards set by Ruffin made the magazine an influential periodical.⁸² However, he strayed from agriculture articles to writing about bank reform in 1841 and 1842. This foray into non-farming subjects cost the journal subscriptions; as a result, it ceased publication in 1842.⁸³

In some of his first articles, published in October 1833 and March 1834, Ruffin wrote favorably of agricultural education. In the 1833 article, he wrote about legislation in New York calling for an agricultural seminary. Ruffin asked his readers, “When will the legislature of Virginia adopt any measure of the kind? – or (it may be more proper, just to ask) when will any member dare to risk the loss of his popularity, by making such propositions?”⁸⁴ In the second article, Ruffin advocated a professorship of scientific agriculture at the University of Virginia. “Agriculture schools,” he wrote, “in which both the principles of the science should be taught, and the actual labors performed.”⁸⁵ Other authors in *Farmer's Register* besides Ruffin wrote additional articles calling for establishing agricultural education in the state.⁸⁶

One of the other Virginia-based agricultural journals that had a large impact on the state was *Southern Planter*. Started by Charles Botts in 1840, Botts was deeply impressed with

⁸¹ Muddiman, “Agriculture in the Fredericksburg Area,” 58. Muddiman also notes that Ruffin’s articles were very lengthy and only the most dedicated could read them to the end.

⁸² Carr, “The Southern Planter, 1841-1861,” 8.

⁸³ *Ibid.*, 8.

⁸⁴ Brown, “Agriculture Science and Education in Virginia Before 1860,” 204.

⁸⁵ *Ibid.*, 204.

⁸⁶ *Ibid.*, 204.

Ruffin's *Farmer's Register*, but wanted to publish a journal focused entirely on practical agriculture.⁸⁷ *Southern Planter* would be a journal free from divisive topics. Botts wrote that the magazine was "The medium for the promulgation, in condensed form, of the observations and deductions of practical men."⁸⁸ He also wrote that his goal was "Valuable communications, more peculiarly applicable to our Southern soil, climate and institutions."⁸⁹ The mission of *Southern Planter*, according to the editors, was "the improvement of agriculture as a science and as an occupation; to direct these improvements to Virginia and the Upper South, and to keep the farmer informed."⁹⁰

After a few years, Botts left Virginia for California. Editorial control passed to other men, before Frank G. Ruffin was appointed as editor in 1851. Frank Ruffin, a distant cousin of Edmund Ruffin, would buy the paper outright in 1854.⁹¹ Under Ruffin, the paper would fulfill its promise of advocating agriculture as a science and profession, improving agricultural techniques and equipment, and pushing for agricultural education throughout the state.⁹²

The *Southern Planter* advocated for both local and state agricultural societies during the Antebellum era. When the Virginia Agricultural Society formed in February of 1850, Ruffin was an enthusiastic supporter; he printed experiments, meeting notes, and fairs conducted or sponsored by the society.⁹³ The price of the journal was \$1.00 per year, in advance, and the number of subscribers varied between 1200 to 5000, with more being added as the journal grew

⁸⁷ Charles Botts, "*Southern Planter: Devoted to Agriculture, Horticulture, and the Household Arts*," 1841.

⁸⁸ *Ibid.*, January 1841.

⁸⁹ *Ibid.*, January 1841.

⁹⁰ Carr, "*The Southern Planter, 1841-1861*," 26.

⁹¹ *Ibid.*, 18.

⁹² *Ibid.*, 25.

⁹³ *Ibid.*, 32.

in importance.⁹⁴ In 1851 there were 1900 subscribers, in 1855 around 4600, and by 1860 about 5000 subscribers.

Improving farming techniques and attitudes was central to the *Southern Planter*. In the first issue, a letter from an anonymous farmer extolled the benefits from “book farming” and how the experiments and techniques described in other journals and books convinced him to try them and, in the end, improved his farm.⁹⁵ Other letters and articles discussed capital, farm management, the value of science in farming, keeping careful farm records, and promoting a crop rotation plan. The magazine encouraged farmers to read books and embrace the value of “Science of Agriculture.”⁹⁶

John H. Cocke, the co-founder of the University of Virginia, attacked tobacco as a crop to avoid in a seven-part article series. Entitled “Tobacco, the Bane of Virginia Husbandry,” the article listed the extensive time and labor needed to grow tobacco and how tobacco damaged the soil after a few growing seasons.⁹⁷ Cocke declared that tobacco income barely sufficed to purchase needed items for a farm. If a farmer grew grain instead of tobacco, six month’s labors would be saved.⁹⁸ In a later article, Cocke declared tobacco “an idol” and that as with all idols, it should be cast down and destroyed.⁹⁹ Letters to the editor were equally divided between praising Cocke’s articles and decrying them.

Agricultural education would also play a large part in the journal’s editorials, articles and letters from readers, though the journal editor was not in favor of formal agriculture education when it was founded. In November 1848, an editorial discussed the reasons why farming was

⁹⁴ Carr, “*The Southern Planter*, 1841-1861,” 22.

⁹⁵ *Southern Planter : Devoted to Agriculture, Horticulture, and the Household Arts*, January 1841, 13

⁹⁶ *Ibid.*, January 1841, 4-5.; August 1842, 173-174.; October 1843, 227-228.

⁹⁷ *Ibid.*, May 1859, 265.

⁹⁸ *Ibid.*, March 1859, 131.

⁹⁹ *Ibid.*, January 1860, 22.

scorned, and why farmers did not want their sons to go into farming instead of taking a professional job. Botts, the first editor, initially wrote editorials in support of farmer apprentices, state aid for farmers, and for private agricultural schools.¹⁰⁰ In a January 1847 editorial, Botts wrote, “Our advice, then, to farmers and farmers’ sons is, stay at home, eschew agricultural schools and agricultural professors, read books only...of practical results.”¹⁰¹ Botts arrived at this conclusion, he said, after noticing that private agricultural schools were failing in the South. Additionally, he noticed the wide gulf between “agricultural science” and the art of manual labor necessary to carry out the science.¹⁰²

In 1845, a letter from “C. L.” was printed, calling for a Professor of Agriculture at the University of Virginia and recommending Edmund Ruffin for the position.¹⁰³ Reaction to the suggestion was favorable from readers in future issues. Another letter suggested that young men receive instruction in scientific farming.¹⁰⁴ Botts, in an October 1845 editorial, started to change his outlook on agriculture education writing, “There exists a most intimate connexion [sic] between popular education and an improved system of agriculture.”¹⁰⁵ Lack of interest by the state legislature in passing agricultural education did not diminish calls for education by the agricultural journals.

Subsequent editors of *Southern Planter* would continue to advocate for agricultural education. Editorials in 1848 and 1851 continued to stress the need for and benefits of agricultural education for the state, for farmers, and for the next generation of farmers.¹⁰⁶ In 1849, the journal called for the creation of a state agricultural chemist. Three reasons were given:

¹⁰⁰ Ibid., February 1845, 25; March 1845, 49-51; April 1845, 92-93; May 1845, 102-104.

¹⁰¹ Ibid., January 1847, 28-29.

¹⁰² Ibid., January 1847, 28-29.

¹⁰³ Ibid., June 1845, 42-45.

¹⁰⁴ Ibid., November 1848, 322-323.

¹⁰⁵ Ibid., October 1845, 234.

¹⁰⁶ Ibid., June 1848, 86-88; September 1851, 262.

to test land and determine proper usage; to introduce agricultural chemistry to the people of Virginia; and to advise on soil types prior to land sales, protecting the buyer.¹⁰⁷ The state did establish an agricultural chemist in 1851, with a professor at the Virginia Military Institute.

Historian Avery Craven has called the period from 1820-1860 in the upper South an agricultural revolution. Transportation improvements, new urban and international markets, and a new knowledge and understanding of the soil and how to grow crops while maintaining the soil were changing the face of agriculture.¹⁰⁸ Due to both agricultural societies and agricultural journals, word was filtering to farmers and planters about advances in manures, crop rotations, and improved agricultural implements.¹⁰⁹ However, scientific agricultural education for the next generation of farmers was still lacking. The answer would lie with an armory located in the Shenandoah Valley of Virginia.

¹⁰⁷ Ibid., April 1849, 124-125.

¹⁰⁸ Julius Rubin, "The Limits of Agricultural Progress in the Nineteenth-Century South," *Agricultural History* (Agricultural History Society), 363.

¹⁰⁹ Muddiman, "Agriculture in the Fredericksburg Area," 68.

CHAPTER THREE A CROWD OF HONORABLE YOUTH

Lexington, Virginia, was founded the year after the signing of the Declaration of Independence. Taking its name from the Massachusetts town where the American Revolution started, the Virginia legislature established the borders of the city in January 1778.¹ Located in the upper end of the Shenandoah Valley of Virginia, 120 miles west of Richmond and 150 miles southwest of Washington, D.C., the town was founded by Scots-Irish refugees.² Lexington was rough country, built on precipitous farmland with roads so steep that “horse-drawn wagons slid into muddy intersections.”³ The town would eventually grade and slice off ten feet from the streets to make them passable.⁴ A fire on April 11, 1796, destroyed all but two of the town’s hundred buildings, causing the townsfolk to rebuild using stone and brick. At the beginning of the 1800s, Lexington had 500 inhabitants, was the county seat, and contained seventy-five residences, four hotels, two churches (Methodist and Presbyterian), and several small

¹ Randolph P. Shaffner, *The Father of the Virginia Military Institute A Biography of Colonel J. T. L. Preston* (Jefferson, North Carolina: McFarland & Company, n.d.), 14.

² Richard M. McMurry, *Virginia Military Institute Alumni in the Civil War* (Lynchburg, VA: H. E. Howard, 1999), 1.

³ Shaffner, *The Father of the Virginia Military Institute A Biography of Colonel J. T. L. Preston*, 15.

⁴ It is still possible to see reminders of this in Lexington today. Most of the homes on Main Street have front doors in their basements, while original doors are now located on the second floor. Main Street, especially the intersection of Main and Washington Streets, was very steep. The Virginia Turnpike also came through town. In 1851-1852 the state threatened to take the turnpike out of Lexington if the town did not improve the streets. Edwin Dooley interviewed by Michael Wallace, July 15, 2017.

manufacturing businesses.¹ Washington College, a small private college founded in 1749, was also located here, and a separate female seminary.²

Although the town had a rough beginning, its citizens were also very religious, patriotic, and proud of their Virginia heritage. Lexington was a Presbyterian town, in which dinner parties, dancing, card-playing, and horse racing were extremely frowned upon. John Wise wrote that as late as 1862, “Presbyterian Lexington” seemed “hard” to him, from the limestone streets, to the portal of the Presbyterian Church, to the red brick houses, to the single-breasted simple dress of the citizens.³ However, after spending some time in the town, “I came to like it.”⁴ Four of the main streets in town were named after Virginia’s Revolutionary leaders: Peyton Randolph, Thomas Jefferson, Patrick Henry, and George Washington.⁵

After the War of 1812, the Commonwealth of Virginia had a surplus of weapons and ammunition. With the militias disbanding, the state needed to establish arsenals to hold the weapons. In early 1816, the state legislature passed laws establishing three arsenals around the state of Virginia. One would reside west of the Allegheny Mountains and the other two east of the mountains but west of Richmond.⁶ Lexington was chosen as the site of the central arsenal, and the town was notified in April of 1816. The arsenal would contain 20,000 arms and have a guard of one officer and twenty enlisted men.⁷

A bluff, northeast of town, was selected for the arsenal building; it was to be built away from town to protect it from possible explosions. The 7.7-acre site was located overlooking the

¹ McMurry, *Virginia Military Institute Alumni in the Civil War*, 1.

² Bradford Alexander Wineman, “J . T . L . Preston and the Origins of the Virginia Military Institute , 1834-42,” *The Virginia Magazine of History and Biography* 114, no. 2 (2006): 229.

³ Francis H. III Smith, “Old Spex of the V.M.I (Unpublished Manuscript),” 1941.28.

⁴ *Ibid.*, 28.

⁵ Shaffner, *The Father of the Virginia Military Institute A Biography of Colonel J. T. L. Preston*, 14.

⁶ Wineman, “J . T . L . Preston and the Origins of the Virginia Military Institute , 1834-42,” 228.

⁷ William Couper, *One Hundred Years at VMI, 4 Vols.* (Richmond, VA: Garrett and Massie, 1939), Vol I, 5.

North (now Maury) River, which allowed weapons, ammunition, and equipment to be transported on the river.⁸ The arsenal and other buildings were completed in late 1819 at a total cost of \$12,680.16.⁹

The men guarding the arsenal were state militia personnel (also referred to as the “Public Guard”) recruited from nearby counties to serve five-year enlistments and receive pay and allowances equivalent to those of their same grade in the U.S. Army.¹⁰ Captain James Paxton was selected as the arsenal’s first commander with one sergeant, an enlisted musician, eighteen privates, and two hired musicians.¹¹ Besides guarding the arsenal weapons, the garrison was also expected to conduct daily drills, parades, and ceremonies, and separate work on other state projects for an extra fifteen cents a day.¹²

Despite their primary and secondary duties, the militiamen had much idle time. Lexington, being a small town, did not offer them much in the way of entertainment, but this did not stop the guards from trying. Soon, reports of guards intoxicated in town, accosting townspeople and students from nearby Washington College, were a common occurrence. A Lexington resident called the Guard, “A discordant element in our social system.”¹³ The guards even took their frustration out on each other, fighting amongst themselves, both sober and drunk. In May 1826, two guards named Daniel Mills and John Mosely got into a drunken fistfight, which resulted in Mosely being beaten to death.¹⁴ A local lawyer wrote of the Public Guard, “In

⁸ Wineman, “J . T . L . Preston and the Origins of the Virginia Military Institute, 1834-42,”229.

⁹ Couper, *One Hundred Years at VMI, 4 Vols.* Vol. I, 8.

¹⁰ McMurry, *Virginia Military Institute Alumni in the Civil War*, 2. The enlistment was eventually reduced to three years.

¹¹ “Lexington Arsenal and Virginia Militia Records,” n.d., Virginia Military Institute Archives, Lexington, Virginia.

¹² Couper, *One Hundred Years at VMI, 4 Vols.*, Vol. I, 11.

¹³ McMurry, *Virginia Military Institute Alumni in the Civil War*, 2-3.

¹⁴ Wineman, “J . T . L . Preston and the Origins of the Virginia Military Institute, 1834-42,” 230. Wineman notes that after the incident, Captain Paxton submitted his resignation to the governor and was replaced by Captain David Moore, the favored candidate of the town.

short, as a body, they are respected by none, considered obnoxious by some, and disliked by all.”¹⁵

The very devout Presbyterian and Methodist town was in a quandary; on the one hand, the arsenal guards were out of control, but on the other hand, the arsenal brought many benefits to the community. As Richard McMurry wrote regarding the situation, the arsenal “constituted a major source of government pork for the little community, and the citizens did not want to do anything that might lead to a stoppage of incoming state funds.”¹⁶ There is no definite proof as to who originated the idea of turning the arsenal into a military school, with the students as caretakers of the arms. However, it was discussed at the state level in the 1820s.¹⁷

Locally, the issue was taken up by the Franklin Society, a debating /discussion group. Founded in 1810, the Society dedicated itself to considering, “questions literary, scientific, moral, local and political.”¹⁸ In the winter of 1834-1835, the Society debated different ideas for the arsenal. One idea proposed was, “Would it be politic for the State to establish a military school, at the Arsenal, near Lexington, in connection with Washington College, on the plan of the West Point Academy?”¹⁹ The idea received enthusiastic support, and members resolved to explore it further.

¹⁵ Cives, “Arsenal Letter 2,” *Lexington Gazette*, September 4, 1835.

¹⁶ McMurry, *Virginia Military Institute Alumni in the Civil War*, 3

¹⁷ There are many theories as to who first proposed the idea for a military school at the site of the arsenal in Lexington. General Nichols, the third superintendent of VMI, wrote that Andrew Alexander, a prominent and influential citizen of Rockbridge County, was frequently mentioned as the originator of the idea of a military school at the arsenal. Another story is that Hugh Barclay, a merchant of Lexington, visited West Point in the early 1830s and was very impressed with the school. He was a strong supporter of the school in Lexington and was appointed a member of the original Board of Visitors by Governor Campbell in 1839. Colonel J.T.L Preston denied that he had the original idea for VMI, but only provided the name to the school. See Shaffner, *The Father of the Virginia Military Institute A Biography of Colonel J. T. L. Preston*, and Wineman, “J . T . L . Preston and the Origins of the Virginia Military Institute , 1834-42.” for additional discussion on this topic.

¹⁸ McMurry, *Virginia Military Institute Alumni in the Civil War*, 4.. The current Palms restaurant, popular with both Washington and Lee students and VMI cadets, is in the building that was built in 1836 by The Franklin Society. <http://thepalmslexington.com/locations.html>.

¹⁹ Couper, *One Hundred Years at VMI, 4 Vols.*, Vol I., 17.

In August of 1835, letters appeared in the Lexington (VA) *Gazette* under the pen name “Cives,” proposing that the town’s arsenal be converted into a military college.²⁰ The “Cives” letters were written by a local lawyer, John T. L. Preston. Preston was born in Lexington on April 25, 1811. When he was two years old, his father Thomas Preston died of typhoid fever while stationed near Norfolk during the War of 1812. When Preston was old enough, his mother sent him to the Richmond Academy, a preparatory school in Richmond.²¹ There, he learned the classics, reading and translating Greek and Latin, as well as learning about ancient Rome and modern English history.²²

Returning to his mother and sister in Lexington, Preston attended Washington College, entering at a very young age. There, he excelled further in Greek and Latin, as well as taking courses in physics, astronomy, the general principles of chemistry, law, rhetoric, and mathematics.²³ After graduating from Washington College, Preston continued his studies at the University of Virginia and Yale. Entering the University of Virginia at age 17, Preston studied modern languages and philosophy for a year. At Yale, he studied with Benjamin Silliman, professor of chemistry and natural history.²⁴ Preston also took classes in law. Leaving without a law diploma, Preston returned to Lexington in the early 1830s and began to practice law.²⁵

²⁰ Ibid.,18.

²¹ Shaffner, *The Father of the Virginia Military Institute A Biography of Colonel J. T. L. Preston*, 22. Preston was born in what is now known as the “Stonewall Jackson” house in Lexington. Thomas J. Jackson bought the house in the 1850s.

²² One of his close friends during this time was another student who had also lost his father (and subsequently his mother), Edgar Allan Poe. Ibid., 26.

²³ Ibid.,26-27.

²⁴ Ibid., 28. Silliman was the country’s leading professor in modern chemistry, geology, mineralogy, and botany. His mineral and rock collection was the nucleus of Yale’s museum. It would later become the first Peabody Museum.

²⁵ Preston took a grand tour of Europe in 1830, where he utilized his Latin in a very interesting way. In a Prussian train station, trying to get directions and unable to communicate, he finally tried Latin, which another person understood. Shaffner, *The Father of the Virginia Military Institute A Biography of Colonel J. T. L. Preston*, 29.

Preston wrote a total of three “Cives” articles outlining the Franklin Society proposals. In the first letter, he clearly proposed the Society’s idea: “Whether it be practicable, so to organize the Lexington Arsenal, that is shall preserve its present character and uses as a military establishment, and be at the same time a Literary Institution for the education of youths.”²⁶ Preston stated that this proposal was made for the benefit of the town, the state, and to the cause

²⁶ Cives, “The Lexington Arsenal,” *Lexington Gazette*, August 28, 1835.



Figure 1. J.T.L. Preston
Source: All images, except Figure 10, from VMI Archives, Lexington, VA.

of education, and that “no political, nor party, nor personal feeling has induced this discussion.”²⁷ To reinforce his point about the proposed school improving the lives of all citizens, he repeatedly used “we” and “our” in all three letters.²⁸

He then moved quickly to the plan, which was to replace the current systems of guards at the arsenal by a body of “young men from sixteen to twenty-four years of age, engaged for four years,” who would guard the arsenal in lieu of pay in exchange for “the opportunity of a liberal education.”²⁹ Preston then outlined the academic organization of the school, which consisted of a faculty of three instructors: one would teach classics, another would teach the sciences, and the third would be a captain to conduct military training. The overall program would last four years with first-year students, or cadets, engaged primarily in military exercises. Sophomores would supervise the freshmen cadets while engaged in studying. Juniors would have more time devoted to study, and seniors would be “released from military duty” as often as possible to attend lectures at Washington College.³⁰ Regarding academic subjects, freshmen would be instructed in English and Latin, sophomores in Latin and mathematics, juniors in mathematics, physics and natural philosophy, and seniors in natural philosophy, chemistry, and military science. Preston conceded that the proposed course of study was not a complete education but was “sufficiently liberal to enable a young man to prosecute it further, unassisted, or creditably to enter upon the study of any of the learned professions.”³¹

The proposed school would be under military discipline, which would keep the passions of the teenage cadets in check, and would produce diligent, consistent, and healthy young men.³²

²⁷ Ibid.

²⁸ Wineman, “J . T . L . Preston and the Origins of the Virginia Military Institute , 1834-42,”233.

²⁹ Cives, “The Lexington Arsenal,” *Lexington Gazette*, August 28, 1835.

³⁰ Ibid.

³¹ Ibid.

³² Shaffner, *The Father of the Virginia Military Institute A Biography of Colonel J. T. L. Preston*, 40.

Prospective students would be nominated from each of the state's senatorial districts (at the time thirty-two, equaling thirty-two cadets) with the faculty having the final say of who would be admitted. A board of examination, which would report the results back to the governor, would evaluate the school and its cadets annually.

Preston concluded the letter by asking for suggestions to the Society's plan to either improve on or change parts of the proposal. He added that the proposal was not a charitable or religious plan, but meant that "young men may be enable to earn an education there."³³ Historian Bradford Wineman notes that Preston purposefully drew attention to the "abysmal condition of education in Virginia and the government's apathy."³⁴ This new school, Preston conveyed to the reader, would continue the intellectual tradition of the Founding Fathers and would contribute to the commonwealth's proud heritage.

In his second letter, printed on September 4, 1835, Preston started by emphasizing that the Society's plan was not overly ambitious. It allowed for both a guard of the weapons at the arsenal and for producing graduates able to lead Virginia's "inefficient" militia system as well as provide future leadership for arsenals around the state. Preston wrote, "The annual supply of young men, who, having passed through the Institution would be fully qualified to assume a subordinate command, and those whose taste might so direct, would have sufficient knowledge to make themselves distinguished military men."³⁵

In addition to improving the guard at the arsenal and the state militia, Preston turned to his third argument, the expansion of public education. He proclaimed, "The State is benefited by everything that promotes the cause of education, and it is part of her settled policy to encourage

³³ Cives, "The Lexington Arsenal," *Lexington Gazette*, August 28, 1835.

³⁴ Wineman, "J . T . L . Preston and the Origins of the Virginia Military Institute, 1834-42," 234.

³⁵ Cives, "Arsenal Letter 2," *Lexington Gazette*, September 4, 1835.

and foster it,”³⁶ and having an institution like one the Society was proposing would guarantee “a freer and more productive society.”³⁷ Preston also suggested the new institution could serve as a normal school, with its graduates benefitting from military discipline and the development of “good habits and the exercise of health.”³⁸ He concluded that the new institution, combined with Washington College and the local female seminary, Ann Smith Academy, would make Lexington, “the Athens or Boston of Western Virginia.”³⁹

The third and final letter was printed on September 11, 1835. In this letter, Preston took a practical view of the obstacles ahead for converting the plan into a reality. He addressed the expenses of converting the arsenal to a school, which he itemized, claiming a savings over keeping only the arsenal. He also addressed worries that the town would be less defended with cadets instead of a guard. Preston wrote that he couldn’t imagine “any invading army” willing to penetrate so far into Virginia, “where the fruits of victory would be so few.”⁴⁰ Additionally, he reminded the town residents that thirty guards, whether they be men or cadets, would be insufficient, “to oppose any force that might be sent against it.”⁴¹

Preston summed up his argument for the new school. He appealed to the citizens of Lexington, whose taxes supported the arsenal, stating that they “have a right to demand that these taxes be so expended as to produce the greatest benefit in return,” and that the state legislature should not disregard their wishes. Finally, in a dramatic flourish, he concluded the letters, writing:

Who would not wish to see the change if it would be as practicable and advantageous as we have represented – who would not wish to see those really handsome buildings, which

³⁶ Ibid.

³⁷ Wineman, “J . T . L . Preston and the Origins of the Virginia Military Institute , 1834-42,” 235

³⁸ Cives, “Arsenal Letter 2, ” *Lexington Gazette*, September 4, 1835.

³⁹ Ibid.

⁴⁰ Cives, “Arsenal Letter 3,” *Lexington Gazette*, September 11, 1835.

⁴¹ Ibid.

upon their commanding site, adorn the approach to our village, no longer the receptacle to drones, obliged to be restrained by the coercion of military rule, a discordant element in our social systems.⁴²

Instead, citizens would see:

The healthful and pleasant abode of honorable youths, pressing up the hill of science in noble emulation, a gratifying spectacle, an honor to our country and our State, and objects of honest pride to their instructors, and fair specimens of citizen-soldiers, attached to their native state, and proud of her fame, and ready in every time of deepest peril to vindicate her honor, or defend her rights.⁴³

The idea to turn the arsenal into a military school had opposition. Arguments appeared soon after the “Cives” articles in the *Lexington Gazette* to counter the idea of a military school by fireproofing the arsenal with two night watchmen providing security or creating a deaf and dumb asylum.⁴⁴ A newspaper in nearby Buchanan, Virginia questioned whether citizens could rest secure knowing that boys would be guarding the arsenal, “especially a Virginia boy . . . proverbially indiscreet as our youths are?”⁴⁵

Preston’s articles, combined with strong legislative backing from the southwest part of Virginia, helped the idea of a military school gain statewide support. On March 22, 1836, the Virginia Legislature passed an act to re-organize the arsenal into a military school. However, problems with the legislation and the financial Panic of 1837 kept the school from opening.⁴⁶ The Legislature amended the original act in 1837 and repealed it outright in 1838.⁴⁷ Finally in March 1839, the Legislature approved a law that solved the previous problems. The arsenal and its appropriation would be transferred to the new military school, and the professors and military

⁴² Ibid.

⁴³ Ibid. This passage has been memorized by numerous first year VMI cadets as part of their “Rat Bible” knowledge. The passage is also inscribed on the parapet wall overlooking Memorial Gardens.

⁴⁴ William Couper, *One Hundred Years at VMI*, Vol. I, 24.

⁴⁵ Ibid., 24.

⁴⁶ McMurry, 4. One of the bills tied the military school as a part of Washington College. The College stated that they were a private institution and thus not under the control of the state legislature. On another occasion, the arsenal buildings were judged to be too small and not enough money was appropriated to improve them.

⁴⁷ William Couper, *One Hundred Years at VMI*, I, 30.

students were to be held responsible for the safekeeping, protection, and preservation of the grounds, buildings, arms, and other property of the State located at Lexington. When asked to name the new school, Preston recommended the Virginia Military Institute. As he later recalled, the name “seemed appropriately significant: Virginia – as a State institution, neither sectional nor denominational. Military – indicating its characteristic feature. Institute – as something different from either college or university.”⁴⁸

A Board of Visitors was established in 1837 to form the school under the original legislative act. The Board was composed of five members appointed by the governor. Among the members appointed, Claudius Crozet was selected as the president of the Board. Crozet was an auspicious choice for the presidency of the board. A Frenchman by birth, he had been educated at the École Polytechnique, the French military engineering college. After graduation, Crozet was an officer in Napoleon’s army and was unfortunate enough to be on the retreat from Moscow. After immigrating to the United States, he had served as a professor of engineering and mathematics at West Point. After leaving West Point, Crozet was appointed as the Principal Engineer of Virginia and was well known throughout the Commonwealth for his science and skill.⁴⁹

The new legislation in 1839 expanded the Board of Visitors to ten members, still appointed by the Governor, with each serving a one-year term. The Adjutant General of Virginia was made a *de facto* member and the other new Board members were from Washington College and the town of Lexington. J.T.L. Preston was one of those appointed from the town. The

⁴⁸ Ibid., 29.

⁴⁹ Ibid., 31.

expanded Board met in Lexington in May 1839 to start the process of organizing the school. Claudius Crozet was again appointed as the President of the new VMI Board of Visitors.⁵⁰



Figure 2. Crozet in 1855

⁵⁰ Couper, *One Hundred Years at VMI* Vol I, 30.

The structure of the new Virginia Military Institute would draw heavily on Crozet's experiences, both at the École Polytechnique, and as an instructor at West Point. Regulations, uniforms, and curricula were borrowed and incorporated from West Point.

The formation of VMI was greatly influenced by the United States Military Academy (USMA) at West Point. After the American Revolution, the Continental Army had a total of fifty-five men guarding artillery and ammunition at West Point, and twenty-five performing the same duty at Fort Pitt in Pennsylvania.⁵¹ The fledgling United States Army had no formal process or school for officer education. As early as 1776, officers in the Continental Army recognized the need for a school where future officers could be educated. Colonel Henry Knox, in a letter to Congress in 1776, wrote, "Officers can never act with confidence until they are masters of their profession, an academy established on a liberal plain would be the utmost service to the continent."⁵² In 1777, a resolution was proposed to Congress establishing a regiment of invalided veterans with light duties which included a military school. The resolution stated, "This corps to be employed in garrison and for guards in cities and other places where magazines and arsenals or hospitals are placed; and also to service as a military school for young gentlemen."⁵³ The resolution was accepted by Congress, and in July 1777, a Corps of Invalids was formed in Philadelphia. Lewis Nicola, a French-born-and-trained engineering officer, took command of the Corps. In November 1780, the Corps moved to West Point and this primitive "military academy," "was reputed to have organized an engineering school, a library, and an arsenal, while stationed at West Point."⁵⁴

⁵¹ Thomas Fleming, "The Father of West Point: The U.S. Military Academy Was as Ineffective as the Peacetime Army When Colonel Sylvanus Thayer Arrived in July 1817, but He Left It with a Reputiation for Imparting Character as Well as Knowledge," *Military History Quarterly* 20, no. 1 (2007): 84.

⁵² G. S. Pappas, *To the Point: The United States Military Academy, 1802-1902* (Westport, Praeger, 1993), 5.

⁵³ Sidney Forman, "Why the United States Military Academy Was Established in 1802," *Military Affairs* 29, no. 1 (1965): 19. This idea is interesting because it is very similar to what Preston and the Franklin Society proposed.

⁵⁴ *Ibid.*, 19.

In Europe, military academies had been established in Prussia, Russia, England, and France before 1752.⁵⁵ During the Revolution, many graduates of these different military colleges found their way to the Continental Army to assist the fledgling American Army in developing into a fighting force. In the early 1800s, two French military colleges in particular enjoyed a strong reputation in Europe: the *École Polytechnique*, which trained engineering officers, and the *École Speciale Militaire* for officer training.⁵⁶

In the period after the Revolutionary War, Henry Knox, Alexander Hamilton, John Adams, and George Washington saw the need for a national military academy. These leaders realized that military instruction, especially for the officer corps, was lacking; the Revolution showed the need for technically trained officers, and a military academy would strengthen the Army without increasing its size of expense.⁵⁷ More importantly, established colleges emphasizing a liberal arts curriculum were not providing the technical type of education needed by army officers. War during the 18th century had changed from a part-time profession to a “recognized” full-time profession.⁵⁸

The drive behind a military academy was also influenced by critics of the traditional liberal arts curriculum. Some Revolutionary leaders wanted to establish a “national” academy which would fulfill the needs of contemporary America by “teaching mathematical and physical sciences and their application to the problem of military technology, as well as to the problems of agriculture, industry, and the means of internal communication.”⁵⁹

⁵⁵ Christopher Duffy, *The Military Experience in the Age of Reason* (Atheneum, New York, 1987), 47.

⁵⁶ Christopher J. Phillips, “An Officer and A Scholar: Nineteenth-Century West Point and the Invention of the Blackboard,” *History of Education Quarterly*, 55, no. 1 (2015): 84

⁵⁷ Sidney Forman, “Why the United States Military Academy Was Established in 1802,” 16.

⁵⁸ *Ibid.*, 16.

⁵⁹ *Ibid.*, 22.

In 1796, the Artillery and Engineering branches of the United States Army established a school in West Point, New York, in order to teach technical and scientific fundamentals to their officers. Conflicts against France and the Barbary pirates at the end of the 18th century led to renewed calls for a national military academy. Therefore, in 1802, the United States Military Academy was founded at West Point, replacing the Artillery and Engineering School. West Point, as the school came to be known, was the first “national” institution in the United States.⁶⁰ Thomas Jefferson intended the Academy to make the officer corps of the Army more egalitarian, and to create a geographically, economically, and politically diverse officer corps.⁶¹ The act also established the precedent for Federal expenditure for education and, “provided one of the impulses for the passage of the momentous Morrill Land-Grant Act of 1862.”⁶²

During its first decade of operation, West Point struggled to find its mission. The overall poor performance of the American Army during the War of 1812, especially in the officer corps, led to changes at West Point, the most significant being the appointment of Sylvanus Thayer as superintendent in 1817.⁶³ Thayer, an 1808 West Point graduate, had distinguished himself during the War of 1812, and in 1815 traveled to Europe with orders to gather books for a military library, and to study the curriculum of European military academies.⁶⁴ Thayer was impressed with the French military academies and with Napoleonic military thought and warfare. As the new superintendent of West Point, Thayer set forth to mold the academy in the shape of these French institutions.⁶⁵

⁶⁰ John R. Thelin, *A History of American Higher Education* (Baltimore, Johns Hopkins University Press, 2011), 42. It was also the first secular college established in the United States.

⁶¹ Michael Bonura, “French Lessons at West Point,” *Military History Quarterly*, Autumn (2014): 98.

⁶² Sidney Forman, “Why the United States Military Academy Was Established in 1802,” 27.

⁶³ The previous acting Superintendent of West Point, Captain Alden Partridge (who would later found Norwich University), was court-martialed for mutiny when he refused to turn over command of West Point to Thayer.

⁶⁴ Stephen E. Ambrose, *Duty, Honor, Country: A History of West Point* (Baltimore: Johns Hopkins Press, 1967), 65.

⁶⁵ Ethan S. Rafuse, “‘To Check...the Very Worst and Meanest of Our Passions’: Common Sense, ‘Cobbon Sense’, and the Socialization of Cadets at Antebellum West Point” *War in History* 16, no. 4 (2009): 413.

Under the previous Superintendent, discipline and academics had been extremely lax. Thayer's first mission was to instill a sense of discipline in the cadets. He abolished all cadet vacations, instead requiring them to live in tents during the summer months to learn military skills. He also screened the existing Corps of Cadets for those who did not meet his standard. Legend holds that among the cadets dismissed was a forty-year-old married cadet, and another cadet with one arm.⁶⁶ Cadets slept on mattresses on the floor of their rooms.⁶⁷ West Point was put on a twelve-month cycle and new cadets were evaluated for admittance using similar methods employed at the *École Polytechnique*. To create equality, they had to live on their government pay, and could not receive any outside payment. When a court-martialed cadet refused to recognize the court because cadets were not under military law, the Attorney General of the United States ruled that they were in fact part of the land forces of the United States and subject to the articles of war.⁶⁸ In terms of discipline, Thayer was in charge.

Academically, Thayer instituted a new curriculum based on "a solid foundation of mathematics and French language, which cadets used to develop their knowledge of engineering, and the science of war."⁶⁹ Other subjects included literature, law, and history. In addition, Thayer introduced semiannual written and oral examinations and daily recitations using the blackboard.⁷⁰ However, due to the heavy emphasis on mathematics and other technical subjects, "cadets received limited instruction in the liberal arts at West Point."⁷¹ Thayer's use of "practical" college courses and progressive teaching techniques made Thayer and West Point

⁶⁶ R. Earnest Dupuy, "Mutiny at West Point," *American Heritage Magazine* 7, no. 1 (1955): 4.

⁶⁷ Fleming, "The Father of West Point: The U.S. Military Academy Was as Ineffective as the Peacetime Army When Colonel Sylvanus Thayer Arrived in July 1817, but He Left It with a Reputation for Imparting Character as Well as Knowledge," 89.

⁶⁸ Dupuy, "Mutiny at West Point," 6.

⁶⁹ Bonura, "French Lessons at West Point," 100.

⁷⁰ Phillips, "An Officer and A Scholar: Nineteenth-Century West Point and the Invention of the Blackboard," 88.

⁷¹ Ethan S. Rafuse, "'To Check...the Very Worst and Meanest of Our Passions': Common Sense, 'Cobbon Sense', and the Socialization of Cadets at Antebellum West Point," 415.

different from other antebellum schoolmasters and colleges rooted in a classical curriculum.⁷²

Cadets received instruction in history, ethics, and philosophy during a single course in their final year. Between the regimen of regulations, disciplinary actions, and academic problems, attrition for a West Point class usually exceeded 50 percent from matriculation to graduation. Poor preparation and academic demand forced as many cadets to leave as did disciplinary problems.⁷³

Thayer was assisted by outstanding faculty members, namely Dennis Hart Mahan and Claudius Crozet. Thayer appointed Crozet as the first professor of engineering at West Point, and Crozet re-affirmed the primacy of the French military and engineering model for the school. Crozet taught descriptive geometry at West Point, which did two things for the cadets: it made them better engineers, and it taught them to reason accurately and apply this reasoning to managing troops.⁷⁴ Crozet employed the blackboard to train students in descriptive geometry, and the use of a blackboard spread to other instructors at West Point, which created the “West Point Method.”⁷⁵ This method required students to read and master lessons before the class session. During class, an instructor would call on a cadet to solve a problem on a blackboard and explain the process in front of classmates. This method put the “responsibility for undergraduate education...with the student and not the instructor.” Cadets also had to perform in front of the blackboard for the extremely important semi-annual examinations, which determined if a cadet would advance, be required to repeat a subject (or year), or in some cases be dismissed for poor academic performance. Period observers of West Point noted that the curriculum had “crystallized” during Thayer and Crozet’s tenure and it did not change until after the Civil War.⁷⁶

⁷² Bradford Alexander Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform” (dissertation, Texas A&M, 2006), 25.

⁷³ *Ibid.*, 24.

⁷⁴ Christopher J. Phillips, “An Officer and a Scholar: Nineteenth-Century West Point and the Invention of the Blackboard,” *History of Education Quarterly* 55, no. 1 (2015): 87.

⁷⁵ *Ibid.*, 89.

⁷⁶ *Ibid.*, 88.

Dennis Hart Mahan, West Point Class of 1824, was a professor of military and civil engineering. Graduate work at the École Nationale d'Ingénieurs de Metz gave Mahan a unique perspective on French military doctrine. He created a unique synthesis that blended French military doctrine, mostly from Napoleon and Antoine Jomini, with the realities of North American warfare.⁷⁷ His engineering courses focused on military topics. His “Composition of Armies” and “Strategy” courses, “provided cadets with the same fundamental of French warfare...but in a more accessible format.”⁷⁸ Thayer’s 1836 monograph, *A Treatise of Field Fortifications*, described the principles and techniques of fortifications, especially for untrained militia troops.⁷⁹ His work would become an essential element of American defensive warfare and would be used extensively in the Civil War.⁸⁰

Due to its leadership and academic and teaching methods, West Point became the premier engineering institution in the United States by the end of the 1820s.⁸¹ Graduates from West Point, after their service in the Army, were in high demand due to their mathematical and engineering experience. West Point’s formula would soon be applied to the formation of a state military college in Virginia.

However, the new Virginia Military Institute (VMI) was not West Point. Preston outlined the differences between the two schools, writing that West Point had an unlimited means to operate from the federal government, a single mission to produce army officers, and guaranteed jobs for graduates upon commencement. Due to these factors, the education obtained at West

⁷⁷ Michael A. Bonura, “French Lessons at West Point,” *Military History Quarterly*, 2014, 103.

⁷⁸ *Ibid.*, 103

⁷⁹ *Ibid.*, 103.

⁸⁰ George Meade, Montgomery Meigs, Braxton Bragg, Robert E. Lee, Jubal Early, Joseph Hooker, P. G. T. Beauregard, William Hardee, Henry Halleck, William Tecumseh Sherman, George Thomas, Ulysses S. Grant and Thomas J. Jackson would all be students of Mahan.

⁸¹ Bonura, “French Lessons at West Point,” 102.

Point was in high demand, and therefore discipline could be enforced with a severity impossible under other conditions.⁸²

VMI, on the other hand, would begin with a very meager endowment, and its graduates would not enter a single profession, but the varied work of civil life. To many young men, this would not be as attractive or as secure as a military career. Discipline could not be enforced with the same rigor as at West Point. The military portion of the school, still essential for discipline, would not be the primary focus of the education. It was expedient to take West Point as a model, but also to provide for necessary variations.⁸³

The founders of VMI drew heavily from the Academy at West Point for its structure, organization, leadership, and curriculum. However, under the guidance and drive of its first superintendent, Francis H. Smith, VMI developed into a unique antebellum school, with emphasis on the sciences, mathematics, and agriculture (unlike West Point) making it one of the premier institutions for higher learning in the United States.⁸⁴

⁸² Francis H Smith, *The Virginia Military Institute Its Building and Rebuilding* (Mattituck, New York: Evergreen, 1912), 21.

⁸³ *Ibid.*, 33.

⁸⁴ Bradford A. Wineman, "Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform," 94.

CHAPTER 4 FRANCIS H. SMITH AND THE GROWTH OF VMI

Besides establishing the military portion of the school, the Board of Visitors had another pressing task, to find a Principal Professor who would run day-to-day operations. Thanks to a recommendation from Dr. George Baxter, the Board eventually settled on Francis H. Smith, a professor of mathematics at Hampden-Sydney College.¹

Francis H. Smith was born on October 12, 1812. His father, Francis Smith, fought as a member of the Old Maryland Line in the American Revolution. After the war, he crossed over to the Northern Neck of Virginia and became heavily engaged in the tobacco foreign trade, shipping the crop to England and West Indies.² In becoming successful in this business, Smith's father grew close to some of the first families of Virginia including the Jones, Parkers, Muses, Tubervilles, and Lees.³

Smith's family moved from the Northern Neck to Norfolk to further expand the trade business.⁴ It was in Norfolk that Francis H. Smith was born. He was raised in the upper middle class and attended the best private schools in the city.⁵ His grandson, Francis H. Smith III, wrote in a 1941 unpublished manuscript that Smith "had one distinct advantage over many others in that his early instructors were men of his own order, and not the adventurers from the North and

¹ Baxter was the President of the Union Theological Seminary, which was located next to Hampden-Sydney College where Smith was teaching. Baxter was in Lexington to attend a meeting of the Presbyterian Synod. If Baxter had not attended this meeting where Preston was in attendance, it is doubtful that Smith would have been considered for VMI. Francis H. III Smith, "Old Spex of the V.M.I" (Unpublished Manuscript), 1941, 36.

² Smith, "Old Spex of the V.M.I" (Unpublished Manuscript), 7.

³ Ibid., 7.

⁴ Ibid., 7.

⁵ Ibid., 8.

from other countries so commonly teaching in the South at that time.”¹ Among Smith’s instructors were noted pedagogues William Campbell and Reverend George Nelson.² He received extensive training in French, Latin, and beginning Greek.

Smith’s parents continued to be a guiding influence. The elder Smith was active, an elegant horseman, and “always dressed with taste and was noted for his attention to his personal appearance.”³ It was said that in later life, Francis H. Smith mirrored his father in appearance and mannerisms. Smith’s mother, Marsden “Nancy” Smith was deeply religious, belonging to the Protestant Episcopal Church. Smith talked of the family’s women being “holy women” while hardly mentioning the men in religious terms.⁴ For most of his adulthood, religion would play a large part in Smith’s life and his educational pedagogy.

It was a family friend, William Bryant, who exposed young Smith to mathematics, which would become his passion. Bryant tutored Smith in his younger years, and this continued after Bryant graduated from West Point and returned the Academy as an instructor.⁵ While Smith was at West Point studying with Bryant, he came to the attention of a Virginia member of the West Point Board of Visitors.⁶ He secured Smith an appointment to West Point, which he entered in the summer of 1829. He had not yet reached his seventeenth birthday.

Smith excelled at West Point, both academically and militarily. During his cadetship, he served as a Color Corporal, Color Bearer, and a Captain, positions testifying to his skill in the

¹ Ibid., 8.

² Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform,” 22.

³ Smith, “Old Spex of the V.M.I (Unpublished Manuscript),” 7.

⁴ Ibid.,8.

⁵ Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform,” 22. Bryant eventually left the Army and became an Episcopal minister and the first Rector of Christ Episcopal Church in Lexington, VA, which was founded largely through efforts of Smith and his wife. Smith III, “Old Spex of the VMI”, 9.

⁶ Ibid., 10. The member of the West Point Board was Dr. William Archer of Richmond. Smith remained in contact and developed a deep friendship with Archer that continued for many years. Archer sent his son, grandson and great-grandson to VMI.

military arts.⁷ Smith was also academically successful, receiving high marks in both mathematics and conduct, and graduating fifth in a class of 43 in 1833.⁸

Smith's class was the last class to graduate under West Point Superintendent Colonel Sylvanus Thayer. Smith respected Thayer, but initially thought that Thayer's discipline was too harsh. In a speech recalling his time as a cadet under Thayer, Smith stated, "Col. Thayer held the reins with a firm hand during the entire administration, and if, at times, he transcended the limits of legitimate authority, no private pique or personal interest swayed his judgment."⁹ After graduation, Smith coincidentally met Thayer at a hotel. Thayer, Smith wrote, greeted him with "affectioneness [sic] and tenderness" and commented on the quality of Smith's West Point class.¹⁰ The episode greatly affected Smith, and he would later emulate Thayer's disciplinary style mixed with a tenderness for his cadets. Historian Bradford Wineman writes that "Smith would leave the Academy craving discipline, adoring the study of mathematics, and appreciating a new sense of personal responsibility he attained through his experience in its Corps of Cadets."¹¹ Smith would come to cherish his time at West Point, especially the "West Point Method" of science and discipline.

Smith also benefited from outstanding faculty during his time at West Point. Some of the best in the fields of mathematics, science, and engineering were Smith's instructors, including Albert Church, Charles Bonycastle, Edward Courtenay, William Bartlett, Charles Davies, and

⁷ Ibid., 24.

⁸ Smith III, "Old Spex of the VMI," 11. Smith claimed that his low standing in drawing pulled him down. Smith, like Preston, also knew Edgar Allen Poe. Poe was a year behind Smith at West Point. Smith said of Poe, "He was a slovenly cadet, had a dark beard, which he neglected to keep shaved, and his career as a cadet was a failure." Smith III, 10.

⁹ Francis H Smith, *West Point Fifty Years Ago: An Address Delivered Before the Graduates of the U.S. Military Academy, West Point, at the Annual Reunion, June 12, 1879* (New York: D. Van Nostrand, 1879), 6.

¹⁰ Smith, "Old Spex of the V.M.I (Unpublished Manuscript)," 11.

¹¹ Wineman, "Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform," 24.

Dennis Hart Mahan.¹² At the fiftieth anniversary reunion of his West Point class, Smith dedicated a large part of his speech to detailing individual instructors and their influence on his development as an educator.¹³ Many of these instructors would become Smith's colleagues and offer him guidance, opinions, and support.¹⁴

After graduation, Smith served in an artillery unit for a couple of years and was then ordered to West Point to teach moral and political philosophy. Smith, at this time, was tall with blonde hair, thin and fit. What made him stand out however, were the spectacles he always wore. A rare sight in the early nineteenth century, Smith started wearing them as a cadet at West Point.¹⁵ Later, cadets at VMI would nickname Smith, "Old Spex." due to these glasses.

During his posting at West Point, Smith wooed and married the daughter of the West Point Assistant Surgeon, Sara Henderson. Twenty-five years old and married with a new family, Smith resigned from the Army, moved back to Virginia and was eventually offered a teaching position at Hampden-Sydney College.¹⁶

Hampden-Sydney College, founded in 1775 and one of the oldest colleges in Virginia, was firmly wedded to a classical education, which focused on mastering Greek and Latin.¹⁷ The College was run by the Presbyterian Church and adjoining the College campus was the Union Theological Seminary.¹⁸ The College provided many graduates for the Seminary. At Hampden-

¹² Ibid., 25.

¹³ Smith, *West Point Fifty Years Ago: An Address Delivered Before the Graduates of the U.S. Military Academy, West Point, at the Annual Reunion, June 12, 1879*, 7-15.

¹⁴ Wineman, "Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform," 26.

¹⁵ Smith, "Old Spex of the V.M.I (Unpublished Manuscript)," 51

¹⁶ Ibid., 21. Smith resigned from the Army in May of 1836. Smith briefly went out West to work with a land company. During the financial crisis of 1837, Smith worked as an Assistant Topographical Engineer with some Army friends before being offered the mathematics job at Hampden-Sydney College.

¹⁷ Wineman, "Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform," 27.

¹⁸ Smith III, "Old Spex of the VMI," 23. Smith III states that at the time Smith arrived, the college and seminary were deeply involved in a controversy between the "Old and New" schools of Presbyterianism. Since Smith was Episcopalian, he made friends in both camps.

Sydney, Smith “truly cultivated his passion for teaching and crafted many of the philosophies that he carried for his next fifty years in education.”¹⁹

With his background in mathematics, Smith was put in charge of teaching the entire mathematics curriculum. This forced him to review and re-learn the subject, which he had not taught or thought about since his days as a cadet at West Point. This was fortuitous for Smith, as it re-awakened a passion for the subject that he would have for the rest of his life. As one Smith historian has noted, neither the students nor the faculty of the college shared Smith’s passion for mathematics.²⁰

Smith discovered that upperclassmen lacked even a basic understanding of mathematics. He therefore required them to review their mathematics skills by repeating freshman-level courses.²¹ Despite initial complaints, the upperclassmen soon mastered mathematics. While instructing almost every student at the college in the subject, Smith held many late-night tutoring sessions, winning the students’ devotion.²²

While at Hampden-Sydney, Smith implemented some West Point traditions that he thought would benefit the students. One of these was public examinations. These examinations were some of the first of their kind in Virginia, and were well attended by local leaders in education, including the trustees of Hampden-Sydney College, professors at the Theological Seminary, professors at the local female academy, and other friends of the College.²³

Another West Point tradition that Smith tried to install at Hampden-Sydney was discipline in the classroom. As Smith later wrote, “No discipline, properly called, prevailed at

¹⁹ Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform,” 27.

²⁰ *Ibid.*, 27.

²¹ *Ibid.*, 23.

²² *Ibid.*, 28.

²³ Smith III, “Old Spex of the V.M.I (Unpublished Manuscript),” 25.

Hampden-Sidney College.”²⁴ Smith would employ the practice of “rusticating,” or suspending students from his class when they misbehaved. He was the only instructor who employed this technique, causing a fellow faculty member to comment that Smith was “said to be a fine officer; he wishes to put the College under complete martial law, and make it a sort of West Point.”²⁵ During his time at Hampden-Sydney, Smith continued to refine his academic system of discipline, mathematics, and distain for a “classical education,” instead focusing on “practical” subjects. Hampden-Sydney provided the context for these ideas. Smith would need an environment not constrained by a classical education mindset in order to put his system into operation. Very soon, he would be given that chance.

Smith was comfortable with his family, home, and teaching position at this time; therefore, he was taken aback upon receiving a letter offering the chance at a new job. J.T.L Preston wrote on April 29, 1839, outlining the plans for the new military school and asking if he could present Smith’s name to the Board for the job of Principal Professor at the next meeting. He was unaware that an act had been passed establishing a new school in Lexington or that the town even had an arsenal.²⁶

Smith was non-committal about the offer and wrote back to Preston asking for additional information. He was concerned about the small number of cadets (set at forty) to be enrolled at the new school. This low number was set to avoid a rivalry with Washington College and Smith felt that he could not undertake a work so limited in its scope and restricted in its field of operation.²⁷ However, Smith was also intrigued, and wrote to friends and family members for

²⁴ Smith, *The Virginia Military Institute Its Building and Rebuilding*, 241

²⁵ John L. Brinkley, *On This Hill: A Narrative History of Hampden-Sydney College, 1774-1994* (Hampden-Sydney, VA: Hampden-Sydney College, 1994),160-161.

²⁶ Smith, *The Virginia Military Institute Its Building and Rebuilding*, 33.

²⁷ Smith, “Old Spex of the V.M.I (Unpublished Manuscript),”38.

advice. Smith, “missed the structure a military lifestyle (as made obvious by the discipline he instilled on his unsuspecting students) and the salary at the new institution would nearly double the pittance on which he currently subsisted.”²⁸

Despite Smith not furnishing a response to Preston, the Board elected him as VMI Principal Professor on May 30, 1839 with the rank of major in the state militia.²⁹ The position of Principal Professor was later changed to Superintendent with the rank of colonel by the Legislature in July 1842. Smith accepted the offer in July but wrote Preston that he would not be able to begin at VMI until the current term fished at Hampden-Sydney. He also wanted to confer with Colonel Thayer for advice.³⁰ An editorial in the *Valley Star* on June 20, 1839 summed up Smith’s nomination by saying, “This appointment we hail as an omen of happy auspices on the birth of our new institution . . . from all that we have heard of him, we feel assured that he merits in a rare degree the peculiar qualifications requisite in the head of such an institute as that over which he is called to preside . . . (he) is a member of the Episcopal Church and, lastly, is a VIRGINIAN.”³¹ On July 11, 1839, an executive order from the Governor was placed in newspapers statewide notifying citizens that the Virginia Military Institute would begin operation on November 11, and that the Board of Visitors would receive and consider applications for admission in September.

As the new Principal Professor, Major Smith traveled to Lexington to meet Preston for the first time in October 1839.³² This meeting changed the direction of the new Institute. Smith presented to Preston his thoughts on the new school; he believed that the Board was thinking too

²⁸ Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform.”²⁹

²⁹ The Board received letters of recommendation for Smith from General Winfield Scott, Commanding General of the United States Army, and Major Charles H. Smith, Paymaster of the Army.

³⁰ Couper, *One Hundred Years at VMI, 4 Vols.*I, 38.

³¹ Smith, “Old Spex of the V.M.I (Unpublished Manuscript),”⁴⁰.

³² *Ibid.*, 42.

small about the future of the Institute. He argued that a school providing military discipline and education in the sciences would be highly desirable in Virginia, a state with a strong military spirit, and would be supported by patronage from those able to pay. In the early years of VMI, the Corps contained both “pay” and “state” cadets. Pay cadets, as the name implies, paid a tuition of \$225 per year.³³ State cadets were appointed from each senatorial district in Virginia by legislators and were young men whose families did not have the means to send them to college. In 1842, the Virginia State Legislature required state cadets to serve the Commonwealth of Virginia for two years after graduation, usually as teachers.³⁴ More “pay” cadets would enable the school to grow and broaden allowing the curriculum to offer a well-rounded course of study while embracing the sciences.³⁵ Smith’s ideas were accepted by the Board and in two years, pay cadets overtook the number of state cadets admitted to the school.

Smith arrived at VMI on November 11, 1839, the opening day of the Institute, having yet to meet the Board that had hired him. He was dismayed at what awaited him. The arsenal’s physical plant was old and lacked the proper living, eating, and classroom space for the new cadets.³⁶ Twenty regular cadets and eight irregular (pay) cadets matriculated to the new school.³⁷ Major Smith met the full Board of Visitors for the first time and the Board appointed Preston as the school’s other primary instructor. Cadet John B. Strange³⁸ relieved the last arsenal enlisted man and became the first cadet sentinel guarding the arsenal. The Virginia Military Institute, the

³³ McMurry, *Virginia Military Institute Alumni in the Civil War*, 9.

³⁴ Couper, *One Hundred Years at VMI* Vol I, 92.

³⁵ Smith III, “Old Spex of the VMI,” 44.

³⁶ *Ibid.*, 46.

³⁷ Couper, *One Hundred Years at VMI* Vol I, 58. Six new appointments were made for those who failed to report. The total number of cadets in the first class was 31.

³⁸ John B. Strange, Class of 1842, became a colonel in the 19th Virginia Infantry during the Civil War and was killed at South Mountain, Maryland on September 14, 1862.

first state military college in the United States, commenced operations.³⁹

VMI in 1839 was not a welcoming place. The Arsenal was a large, substantial brick building in the center of a small courtyard. The Parapet, to the south, was the soldiers' barracks, a small two-story building with five rooms and two one-story wings each containing two rooms. The sally-port was closed by an iron-bound gate and the windows of the first floor of the barracks had iron bars on them. Smith wrote, "The whole establishment presented the appearance of a prison."⁴⁰

³⁹ Interestingly, Washington College students drilled with cadets from VMI. The Virginia Chapter of the Society of the Cincinnati, made up of Revolutionary War Veterans (including George Washington), bestowed to Washington College its funds when it disbanded upon the condition that the College should impart military instruction to its students. When VMI opened in 1839, trustees requested the authorities from VMI to drill and instruct twenty students from Washington College to be known as the Cincinnati Class. The class attended daily drills and wore the same uniform as the cadets, with the difference being a black button on the collar for the Cincinnati cadets as opposed to a VMI button for the cadets. This arrangement lasted until February 22, 1846. Couper, I. 71, 155.

⁴⁰ Smith, "Old Spex of the V.M.I (Unpublished Manuscript),"41.



Figure 3. VMI Cadets Drilling next to Arsenal in the 1840s



Figure 4. 1840s VMI showing original Arsenal Building

Cadets had no uniforms until the spring of 1840. They lived four or six to a room

measuring about fifteen by sixteen feet. Light in each room came from a tin whale-oil lamp, and heat from a small fireplace. Each room contained two tables, chairs and a washstand. In the morning, cadets would roll up their mattresses. One cadet would take the room's chamber pots and empty them in Woods Creek at the base of hill under the Arsenal. The resulting pyramids of excrement led to the stream being called "the Nile" by cadets.⁴¹

The Board of Visitors contracted for the renovation of barracks, but they lacked roofs when the school opened in November. Two log cabins were built, one as a dormitory for the cadets and the other as a classroom. The mess hall was in the basement of the arsenal, but no fuel had been procured, so food was cooked in sally-port.⁴² Cadet Saunders wrote in November 1839 of life at VMI, "I have just returned from exploring the dusky halls of the old Arsenal...we are examined individually by Major Smith in the presence of the whole corps to see what progress we have made in our studies...our present course of instruction includes Algebra and French."⁴³

The winter of 1839-1840 was intensely cold in Lexington. During this time, Smith discovered that some cadets were planning on deserting and returning home. He met with the cadets and expressed sympathy with their hardships, but reminded them that they were soldiers, the Public Guard of the Arsenal, and that their current suffering could not compare with what those Revolutionary War soldiers had endured at Valley Forge.⁴⁴ Additionally, winter would soon pass; spring would bring cadet uniforms, company drills, and the chance to show the Board of Visitors what they had learned. There were no desertions. Smith had successfully met his first discipline and authority test as leader of the fledgling Institute. However, at the end of the first

⁴¹ McMurry, *Virginia Military Institute Alumni in the Civil War*. The information in this paragraph is taken from pages 11 and 12.

⁴² Smith, "Old Spex of the V.M.I (Unpublished Manuscript)," 46.

⁴³ Couper, *One Hundred Years at VMI, 4 Vols.*, I, 65-66.

⁴⁴ Smith III, "Old Spex of the V.M.I (Unpublished Manuscript)," 47

year in June 1840, only sixteen cadets remained from thirty-one of the original Corps.⁴⁵

In addition to taking care of his cadets, Smith had to create a new educational curriculum. He immediately reached out to his West Point contacts, including Colonel Thayer and VMI Board of Visitors President Claudius Crozet.⁴⁶ The fledgling VMI borrowed heavily from West Point regulations, academic curriculum, and uniform designs.⁴⁷ There was a practical reason for copying the West Point system: it expedited the opening of VMI. Crozet wrote to Smith, “These books were selected by the Board in order to prevent all delay at the beginning; the regulations of West Point guided in the choice.”⁴⁸

However, Smith also realized that the new Institute was not West Point - it did not have the resources or the mission to produce officers for the Army.⁴⁹ With only vague direction from the VMI Board of Visitors, Smith modified the West Point mathematics, French, and engineering curriculum to educate and produce individuals who, instead of serving in the military, would serve in civilian life as educators and engineers.⁵⁰ This also meant that Smith would reject the traditional “classical” model of antebellum education and instead focus on a heavy mathematics and engineering-centered curriculum combined with elements of the “fine arts,” comprised of French, English literature, Latin, geography, and rhetoric. Smith “desired that his graduates would be men of education, not men of war.”⁵¹

⁴⁵ Couper, *One Hundred Years at VMI, 4 Vols.* I, 98. Seven of these sixteen in the Class of 1842 served in the Civil War with three dying in Confederate Service (including the first cadet sentinel, John B. Strange).

⁴⁶ Couper, *One Hundred Years at VMI* Vol I, 52.

⁴⁷ Jennings C. Wise, *Virginia Military Institute Military History* (Lynchburg, VA: J.P. Bell, 1915), 40.

⁴⁸ Couper, *One Hundred Years at VMI, 4 Vols.* I, 51.

⁴⁹ *Ibid.*, 43.

⁵⁰ Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform,.” 32.

⁵¹ *Ibid.*, 45.



Figure 5. Francis H. Smith in 1853

During his time at Hampden-Sydney, Smith became acquainted with the “classical education” taught in most colleges and universities at the time. Having a primary school education heavy in the classics combined with a practical mathematics and engineering education at West Point, he was in a unique position to see the advantages and disadvantages of each. These different experiences would shape his pedagogical plans for the academic structure of VMI.

American colleges in the 19th century were increasingly accessible to more of the population due to democratic tendencies. However, as historian George Schmidt wrote, “they had not changed their fundamental character.”⁵² Graduates of Harvard had founded Yale, and graduates of Yale had founded Princeton.⁵³ Graduates of all of these schools founded the majority of colleges and universities during the late 18th and early 19th century. The classical curriculum propagated itself because there was no new blood for new ideas. Colleges were also spreading rapidly during this time. In 1841, *The American Almanac and Repository of Useful Knowledge* reported one hundred colleges and academies operating in the U.S. By 1861, that number had jumped to 182.

A classical education was made up of four areas: the classics, including rhetoric and belles-lettres (aesthetic literature); mathematics and natural philosophy; metaphysics; and ethics.⁵⁴ Most colleges had a standard curriculum in these subjects from which students could not deviate. Elective courses were unusual in the early 19th century. This curriculum “showed a remarkable similarity and lack of originality, and the same was true of government and

⁵² George P. Schmidt, “Intellectual Crosscurrents in American Colleges, 1825-1855,” *The American Historical Review* 42, no. 1 (1936): 47.

⁵³ *Ibid.*, 49.

⁵⁴ Louis Franklin Snow, *The College Curriculum in the United States* (New York: Teachers College, Columbia University, 1907), 23.

discipline.”⁵⁵ With a non-challenging curriculum and faculty and administration in a more or less “benevolent parental despotism,” American campuses were rife with disciplinary problems.⁵⁶

There were challenges to this classical curriculum during the early 19th century. At the urging of Thomas Jefferson, his alma mater William and Mary allowed students more freedom to select courses that interested them and put greater emphasis on history, government, and law.⁵⁷ For Jefferson, these changes were not enough; when he designed the curriculum for the University of Virginia, he called for eight separate schools which would provide traditional classical subjects, as well as include newer scientific interests and training in different professions.⁵⁸ Other colleges attempted similar changes. Union College allowed students to take a modern language in place of Greek and the University of Vermont allowed students to take as many courses in different subjects they wanted with no time limit on graduation.⁵⁹ Amherst College, in a 1827 faculty report, charged that Amherst and other colleges “were not preparing young men to live and work in the emerging entrepreneurial corporate world.”⁶⁰ The faculty proposed the idea of including scientific courses that would be helpful to graduates in trades and the domestic economy.

The response to these changes at the University of Virginia and other colleges was taken up by Yale University.⁶¹ The result was the Yale Report of 1828, a product of the Yale

⁵⁵ Schmidt, “Intellectual Crosscurrents in American Colleges, 1825-1855,” 48.

⁵⁶ Ibid., 48. See also Rodney Hessinger, “‘The Most Powerful Instrument of College Discipline’: Student Disorder and the Growth of Meritocracy in the Colleges of the Early Republic,” *History of Education Quarterly*, 39 (Autumn 1999): 237-262.

⁵⁷ Ford, *Writings of Thomas Jefferson*, 10 Vols. I., 69.

⁵⁸ Schmidt, “Intellectual Crosscurrents in American Colleges, 1825-1855,” 51. Schmidt also writes that Jefferson intended UVA to be a graduate institution but due to a lack of adequately prepared candidates had to become an undergraduate college.

⁵⁹ Ibid., 53

⁶⁰ Jack C Lane, “The Yale Report of 1828 and Liberal Education: A Neorepublican Manifesto,” *History of Education Quarterly* 27, no. 3 (1987): 331.

⁶¹ At the time of the Yale Report in 1828, Yale was the largest college in the U.S. Yale had 359 students, while Harvard had 247 and Union College 227. Schmidt, 53.

Corporation which in 1827 appointed a committee to study a proposal that Yale substitute modern languages for the “classical language” in its curriculum.⁶² While some higher education historians have highly criticized the report (“the burden of defending the old order”⁶³), others consider the report “a careful defense of the college way and of general undergraduate education based on the classics and mathematics.”⁶⁴

The Yale Report specified that the main purpose of college was to provide a robust preparation for self-directed professional and graduate studies, to be added at a later date. Colleges were not meant to be graduate or professional schools. A college education would develop in students, “intellectual skills and instill a foundation core of knowledge necessary for all higher learning.”⁶⁵

The report drew heavily on the widely accepted ideas of faculty psychology. Faculty psychology was a “theory which claimed that certain mental faculties – memory, accuracy, observation, attention, etc. - could be trained if the mind was properly exercised.”⁶⁶ Many educational leaders of the day believed classical languages to be the most effective at stimulating student mental faculties by compelling them to develop thoughts that were orderly, systematic, and accurate.⁶⁷ However, the report also stated that the “classics” combined with mathematics would “form the most effectual discipline of the mental faculties.”⁶⁸

Smith was not a fan of a purely classical education. He wrote in an 1871 pamphlet:

⁶² Douglas Sloan, “Harmony, Chaos, and Consensus: The American College Curriculum,” *Teachers College Record* 73, no. 2 (1971): 243. For more information on the Yale Report of 1828 see Sloan and Jack C Lane, “The Yale Report of 1828 and Liberal Education: A Neorepublican Manifesto.”

⁶³ Melvin I. Urofsky, “Reforms and Response: The Yale Report of 1828,” *History of Education Quarterly* V, no. 1 (1965): 53–67.

⁶⁴ Sloan, “Harmony, Chaos, and Consensus: The American College Curriculum,” 243.

⁶⁵ *Ibid.*, 243.

⁶⁶ Lane, “The Yale Report of 1828 and Liberal Education: A Neorepublican Manifesto,” 333.

⁶⁷ *Ibid.*, 333.

⁶⁸ Sloan, “Harmony, Chaos, and Consensus: The American College Curriculum,” 244.

It is very difficult to change the traditional education of a people. We are taught as our fathers were taught, - they followed in the footsteps of their ancestors; - and thus from generation to generation, a system is adhered to simply because it has long prevailed.⁶⁹

Smith's 1851 book, entitled *College Reform*, presented his thoughts on classical education and needed changes. In the preface, Smith wrote that VMI and its success caused the public to view "reform of the college system, as it has existed in some of the oldest institutions of our country."⁷⁰ In another part of the book, he wrote, "the existing systems of education are radically defective, or from the necessity of accommodating them to the progressive spirit of the age, it can hardly fail to result in much good."⁷¹

Smith was an admirer of Dr. Francis Wayland, the president of Brown University, and the changes Wayland was implementing at Brown. In 1850, Wayland proposed a radical and sweeping change to the curriculum at Brown. He believed that if Brown adapted courses of study to the needs of businesses and technical and practical professions, they would support the school with students and funding.⁷² Wayland believed that colleges needed to serve the community's immediate needs with the largest number of students. He also believed that the future of the country depended on the expanding middle classes, "that portion of men who unite intelligence with muscular strength – the farmer, the mechanic, and the manufacturer."⁷³ Wayland disputed the notion that only classical literature and mathematics cultivated intellectual skills and mental discipline as argued in the Yale Report. He believed that all studies, especially practical, imparted some useful knowledge.⁷⁴

⁶⁹ Francis H Smith, "Gymnastic and Technical Education VMI 1871," n.d., 13.

⁷⁰ Francis H Smith, *College Reform*, 1851, IX.

⁷¹ *Ibid.*, 2.

⁷² Sloan, "Harmony, Chaos, and Consensus: The American College Curriculum," 247.

⁷³ *Ibid.*, 247.

⁷⁴ *Ibid.*, 248.

Smith would often quote Wayland in his publications and speeches on educational reform. In a speech to the VMI Corps of Cadets in 1856, Smith included a quote from Wayland criticizing how colleges prepare students for professions (law and medicine), which were becoming less popular throughout the country. After quoting Wayland, Smith noted that in the Commonwealth of Virginia in 1837, there were no colleges that offered a full course in mathematics or taught the scientific courses necessary to produce civil engineers. Smith further added, “The classics and the metaphysics so monopolized the time of the students...at that time, the higher branches of mathematics with descriptive geometry and its applications, were scarcely parts of the college program for a degree.”⁷⁵ Academically, Smith believed that scientific branches (algebra, geometry, and trigonometry) were stifled while subjects like Latin and Greek received all of the student’s attention.⁷⁶

Emulating his experiences at West Point, Smith made French and mathematics the core of the new VMI curriculum. Mathematics was central to Smith’s academic plan. He believed that mathematics “provided a practical skill for real life as well as allowed students to exercise their minds through reason and logic in ways that reading the classics could not.”⁷⁷ Smith also realized that a solid mathematical education was a vital part of a civil engineer’s foundation.

As demonstrated at Hampden-Sydney, most colleges had very rudimentary instruction in mathematics, mainly in elementary algebra and geometry. Smith’s time at Hampden-Sydney showed that most students knew only the basics of algebra, geometry, and trigonometry and were

⁷⁵ Francis H Smith, *Introductory Address to the Corps of Cadets of the Virginia Military Institute on the Resumption of Academic Duties September 2nd, 1856* (Richmond, VA: MacFarland and Fergusson, 1856), 9.

⁷⁶ Smith, “Old Spex of the V.M.I (Unpublished Manuscript),”24.

⁷⁷ Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform,”35.

unprepared for calculus as upperclassmen.⁷⁸ Smith would ensure that students at VMI would receive mathematics instruction throughout their cadetship.

In teaching mathematics, Smith also followed West Point's lead in switching from the English method of teaching mathematics to the "perspicuous, clear, and logically arranged" French method of instruction.⁷⁹ Smith utilized the textbook of his favorite West Point professor, Professor Charles Davies. Smith also translated French textbooks into English and published his own textbook, *An Elementary Treatise on Algebra*, in 1846 and later published other textbooks on geometry.⁸⁰ Many antebellum colleges used his textbooks, including the University of Virginia, the University of North Carolina, the College of William and Mary, Washington College, and Hampden-Sydney.⁸¹

Since West Point emulated France as having the premier mathematic and engineering schools in the world, VMI would also follow West Point's lead on instruction in French. Smith wrote, "To the French, we pay a great deal of attention as more of our math and philosophical course is studied in this language."⁸² Cadets translated *Gil Blas* and *Charles XII* from French into English. Both of these French books were very popular at other schools and colleges for learning the language, including West Point.

As previously mentioned, Smith had a unique perspective in organizing his educational pedagogy. A product of both a classical education in Norfolk and a scientific and technical education at West Point, he was in a unique position to incorporate what he considered the best of both. The result was that the curriculum of VMI placed emphasis on both Latin and English

⁷⁸ Ibid., 28.

⁷⁹ Ibid., 36.

⁸⁰ Smith III, "Old Spex of the VMI," 54.

⁸¹ Wineman, "Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform," 104.

⁸² Francis H Smith, "Letter to William C. Rives," 11 June 1846, Virginia Military Institute Archives, Lexington, Virginia.

as well as other classical subjects, a break in the West Point curriculum that had so far guided VMI's foundation.⁸³ Smith did not require Greek for entry nor offer it while at VMI, but Latin, the core of many Romance languages, was considered important.⁸⁴ Cadets translated Cicero, Virgil, Horace, and Livy and received instruction in both French and Latin during their time at VMI.

Smith held that English, and mastery of it, was “essential for a complete education, particularity of a young man training to be an educator.”⁸⁵ Smith wrote to a parent about his views on English stating, “Practice however, is our chief means for improvement in this important department and we believe our graduates have generally been regarded as good English scholars.”⁸⁶

The initial academic offerings at VMI were extremely modest due to resource and infrastructure limitations. With only one other instructor, John T. L. Preston (the author of the "Cives" letters), Smith implemented the academic curriculum at VMI. In its first few years of operation, VMI had a three-year curriculum instead of a four-year. By 1843, the *VMI Register of the Faculty and Cadets* showed two new faculty members (in chemistry and drawing) and four cadet assistant professors.⁸⁷ The curriculum for the third year (freshman/sophomore) cadets had classes in drawing (human figure), French, Latin, and mathematics (algebra and geometry).⁸⁸ Second-year (sophomore/junior) cadets had additional drawing (topography), French, Latin, and mathematics (calculus, analytical geometry) courses. Third-year (senior) cadets had engineering

⁸³ Jennifer R. Green, “Books and Bayonets” n.d., 76.

⁸⁴ Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform,” 38.

⁸⁵ *Ibid.*, 37.

⁸⁶ Smith, “Letter to William C. Rives.” Virginia Military Institute Archives, Lexington, Virginia.

⁸⁷ Virginia Military Institute, “Register of the Officers and Cadets of the Virginia Military Institute 1843,” Virginia Military Institute Archives, Lexington, Virginia.

⁸⁸ VMI designates its classes from freshman to senior by using a descending number sequence from four to one. Freshmen are known as “fourths” and seniors are known as “firsts”. This system is still in use today. Freshmen are known as “rats” until they are recognized as a class by the firsts.

and infantry tactics, rhetoric and English literature, natural philosophy (modern physics), and chemistry. Drawing was emphasized, as it was vital for an engineer and soldier in the era to be able to sketch and design fortifications and address engineering problems. While Latin was required for two years, the teaching of Greek was not, as Smith considered Greek more appropriate for theological institutions.⁸⁹ During the 1841-1842 academic year, additional courses in the sciences and civil and military engineering were introduced for first (senior) classmen.⁹⁰

By the late 1840s, VMI was organized into six academic departments: English and history, mathematics, foreign languages, sciences, engineering, and military science. In 1845, the school divided incoming cadets into two groups. Those cadets whose educational preparation was judged adequate entered the established three-year course of study and became the Class of 1848. The other cadets, needing additional academic preparation, became the Class of 1849; they were admitted as fourth classmen (freshmen) and into a four-year program at VMI. The three-year course of study was abandoned after the Class of 1848.⁹¹ In 1856, VMI again followed the lead of West Point and established a “fifth class” for cadets who did poorly in mid-term examinations.⁹² This fifth class served as a preparatory year for cadets but was discontinued over the next decade. By the end of the of the 1840s, VMI cadets took classes in mineralogy, geology, mechanics, and astronomy, and Smith proudly declared in an 1850 report to the legislature that VMI held the honor of being the only college in the south to offer instruction in the “physical sciences.”⁹³

⁸⁹ Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform,” 38.

⁹⁰ McMurry, *Virginia Military Institute Alumni in the Civil War*, 20.

⁹¹ *Ibid.*, 20.

⁹² *Ibid.*, 21.

⁹³ Francis H Smith, “VMI Semi-Annual Report of the Virginia Military Institute, 4 July 1850”.

Drawing from his cadet days at West Point, Smith implemented blackboard recitation at VMI. He strongly believed that cadets needed to be active participants in the learning process versus gaining knowledge only from lectures.⁹⁴ Cadets received a daily grade on their recitations, which allowed Smith to track the progress of every cadet and intercede when he perceived that a cadet was falling behind or not understanding the material. Classes were also broken into sections of no more than 15 cadets. These small sections forced cadets to prepare for every class. Smith wrote in *College Reform* of the necessity of small sections, “A young man of sixteen or seventeen is not going to study very hard, if his teacher takes up the time in lecturing instead of examining him upon the text.”⁹⁵

Blackboard recitations also served other purposes. Smith wrote that while he was a cadet at West Point, he was asked by his instructor to simplify a complicated algebraic problem on the board. He did so, but the instructor replied that his answer was wrong. Smith did the question over again and came to the same conclusion and received the same response. Becoming desperate, he nervously told the instructor that his answer was correct. The instructor replied to Smith, “It is right, and it was right before, why didn’t you stick to it?”⁹⁶ For Smith, the blackboard and recitation built self-confidence.

At the end of every week, each course’s instructor would make out a class report for each cadet listing the results of the week’s recitations. Smith recommended a scale of 3 to 0, with 3 being considered best, $2\frac{3}{4}$ to $2\frac{1}{4}$ being good, 2 through $1\frac{1}{4}$ as indifferent, 1 to $\frac{1}{4}$ as bad and 0 being worst.⁹⁷ This report would be sent to the president or superintendent of the college.

⁹⁴ Francis H. Smith, *The Virginia Military Institute: Its Building and Rebuilding* (New York, Evergreen, 1912), 67.

⁹⁵ Smith, *College Reform*, 27.

⁹⁶ Smith, *West Point Fifty Years Ago: An Address Delivered Before the Graduates of the U.S. Military Academy, West Point, at the Annual Reunion, June 12, 1879*, 10.

⁹⁷ Smith, *College Reform*, 29.

Students and cadets would be ranked in order of merit and performance in their courses. Smith wrote, “Until colleges are brought to adopt this [merit] system in full, they will never be what they ought to be.”⁹⁸

Smith also instituted another West Point tradition: the semiannual examination. These examinations were performed for the Board of Visitors and other important academicians invited by Smith, including Smith’s former superintendent at West Point, Colonel Thayer.⁹⁹ Smith believed that these examinations not only tested the cadet but also offered an evaluation of the faculty members. He wrote, “an examination gives the board of trustees an opportunity to judge not only the progress of the class, but of the competency and fidelity of the professor.”¹⁰⁰

VMI was soon sending graduates, as teachers, all over Virginia and surrounding states. These graduates raised the standing of VMI throughout the South and exposed other states to the perceived benefits of Smith’s military and practical curriculum. Smith wrote that the VMI alumni serving as teachers “have carried with them the peculiar discipline and system of instruction to which they have been here accustomed. Boys thus early trained ...do much to strengthen the authorities of the college.”¹⁰¹ He also observed that the students taught by VMI alumni would also be better prepared in mathematics and technical subjects.

For fourteen years, from the early 1840s to the mid-1850s, VMI served as the only normal school in the state.¹⁰² There was a great need and demand for teachers during the first half of the 19th Century throughout the South. A Virginia study compiled during the 1850s

⁹⁸ Ibid., 30.

⁹⁹ Couper, *One Hundred Years at VMI* Vol I, 98.

¹⁰⁰ Ibid., 31.

¹⁰¹ Smith, *Introductory Address to the Corps of Cadets of the Virginia Military Institute on the Resumption of Academic Duties September 2nd, 1856*, 18.

¹⁰² Wise, “A Special Report to the Board of Visitors of the Virginia Military Institute on the History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture, Including a Sketch of the Physical Survey of Virginia by the School of Applied Science,” 10.

estimated that 60,000 adult whites (1850 Census indicated a total of 949,133 whites in Virginia) in the state could not read nor write.¹⁰³ While Virginia had several private academies for families that could afford them, there were no public schools as we currently know them. In 1810, James Barbour introduced a bill in the Virginia General Assembly to support public schools.¹⁰⁴ The bill was intended to educate poor white children whose parents or guardians could neither finance their education with tutors nor send them to private schools. Due to the poor students in the system, it became known as the “pauper system” and the schools known as “common schools.” Each county was divided into districts, and each district, in theory, had a common school run by a local commissioner. For example, Rockbridge County, where Lexington was located, had several “common schools,” including Ann Smith Academy, the Lexington Classical and Mathematical School, the Botsford School and others. The beginnings of a true, modern public school system in Virginia began around 1870.¹⁰⁵ Throughout the antebellum period, the number of college students in the state increased from 500 in 1845 to 2,000 in 1856, mostly due to the improvements made in state public education by VMI graduates according to a history of VMI.¹⁰⁶

The military system, while not a central cornerstone, did play an important role in the foundation of the new school. Besides the necessity of guarding the arsenal and benefits of drill in producing future militia officers, many politicians and educators saw other advantages in a military school system. Military schools were “touted as institutions that would instill submission to lawful authority and emphasize civil engineering and the sciences, yet be

¹⁰³Ibid., 21 The Census of 1850 listed 949,133 whites living in the Commonwealth of Virginia. “Population of Virginia - 1850,” 1970.

¹⁰⁴ Edwin Dooley, email to author, March 13, 2018.

¹⁰⁵ Ibid.

¹⁰⁶ Couper, *One Hundred Years at VMI, 4 Vols. I.*, 136.

egalitarian in nature,” the military system erasing any social distinction.¹⁰⁷ In addition to the mental and moral qualities necessary to become gentlemen, military drill had the added benefit of producing a healthy body.¹⁰⁸

His 1851 book, *College Reform*, was a how-to-guide for both educators and politicians to replicate the VMI experiment. Views espoused by Smith included: the instruction and discipline of students was the responsibility of a faculty; discipline included reports to parents noting the number of absences and diligence of a student, with reprimands, suspension, dismissals, or expulsion of a student; a merit system that combined both academic and conduct standing.¹⁰⁹ Smith wrote, “The young man needs this authority, the parent desires it, nay, demands it, and that college which fails to exercise it, is not meeting the end for which it was founded.”¹¹⁰ Smith wrote that his discipline system had influenced other states: Rhode Island, Maryland, Kentucky, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Tennessee, Arkansas and Louisiana.¹¹¹

General merit, a combination of conduct and scholarship, was Smith’s goal for colleges. It was the class merit and demerit system that gave moral power to military schools. The military aspect to the schools were part of the process and not a main focus. Young men may be attracted to the “‘pomp and circumstance’ of the parades, at first, but these soon become wearisome.”¹¹²

Colleges in the antebellum South were plagued with disciplinary problems. In 1840 a student killed his professor after a disagreement at the University of Virginia. The University of

¹⁰⁷ John Wands Sacca, “The Lost Cause: Myth as Educational Metaphor in the New South,” *History of Education Quarterly* 42, no. 2 (2002): 249.

¹⁰⁸ Bruce S. Allardice, “West Points of the Confederacy: Southern Military Schools and the Confederate Army,” *Civil War History* 43, no. 4 (1997): 314.

¹⁰⁹ Francis H. Smith, *College Reform* (Philadelphia: Thomas, Cowperthwait & Co., 1851), 15.

¹¹⁰ Smith, *College Reform*, 37.

¹¹¹ Smith, *Introductory Address to the Corps of Cadets of the Virginia Military Institute on the Resumption of Academic Duties September 2nd, 1856*, 17.

¹¹² Francis H. Smith, *College Reform* (Philadelphia: Thomas, Cowperthwait & Co., 1851), 54.

Alabama had numerous student fights, riots and duels in the decades before the Civil War, including a riot in 1848 that led to the suspension of all but three students.¹¹³ A Nashville newspaper addressed student violence, stating:

In the planting States where the great laboring force is black, and the climate unfriendly to field labor by white men, it is extremely difficult for parents to exercise the controlling restraints over youth, which their indiscreet tendencies and want of knowledge require. . . . [Military education] teaches obedience subordination and deference to authority, which constitutes a sound basis for good citizenship, and elevated morals.¹¹⁴

Francis Smith was a strong believer in discipline and its inclusion in the college experience. He wrote about discipline, “Now, young men have evil passions, which it should be the object of discipline to restrain; they have careless, idle, and procrastinating habits, which discipline should correct; and they have noble qualities, which discipline should properly cultivate and direct.”¹¹⁵ His experience teaching at Hampden-Sydney had crystalized his thoughts on both discipline and education. Misbehaving young men at the college were “rusticated,” or suspended, from classes or school for a time and not expelled. Smith thought this was, “a strange way of correcting idleness and bad conduct.”¹¹⁶ Smith further wrote that “discipline in its fullest sense, in its practical and essential character as a means of developing and training the whole man, was scarcely known” in other colleges in the South.¹¹⁷ To be productive citizens to their state, Smith believed graduates of the new institution should be gentlemen, disciplined and able to contribute to society as teachers, professors, engineers, and militia officers.

¹¹³ Edwin L Dooley, “‘A Fine College from This Time Forward’: The Influence of VMI on the Militarization of the University of Alabama,” 1997, 3.

¹¹⁴ *Nashville Union and American*, Feb. 14, 1855. The paper was advocating that the Federal Government should establish a “Southern West Point” due to the fact that West Point was in a far too northern latitude and “unfriendly to southern constitutions.” Jefferson Davis, then Secretary of War, was against the plan.

¹¹⁵ Smith, *College Reform*, 39.

¹¹⁶ Smith, “Old Spex of the V.M.I (Unpublished Manuscript),” 24.

¹¹⁷ Smith, *Introductory Address to the Corps of Cadets of the Virginia Military Institute on the Resumption of Academic Duties September 2nd, 1856*, 7-8.

VMI allowed Smith to implement his standards for discipline. Discipline extended to and defined every duty performed by cadets. Smith wrote that discipline could not wait until a cadet was “hopelessly vicious, but which aimed to train him in habits of order, propriety, study, decency and morality, by appropriate penalties graded to correspond with the offences committed.”¹¹⁸

Smith established a demerit system and recommended the system for other schools with discipline programs. Offences included profane language (10 demerits), irreverence during religious services (5 to 10), using tobacco (5), absent from college (5), absent from class (3), and talking in class (2 to 5).¹¹⁹ It is interesting to note that blasphemy and being disrespectful during religious services carried a heavier penalty than being absent from college or class or talking in class. If a cadet or student reached 100 demerits within five months, Smith recommended they be “immediately dismissed from the college.”¹²⁰

Religion played a large part in both Smith’s life and educational theories. As mentioned previously, Smith’s mother and many of the women in Smith’s life were very religious. Smith’s family, like many of the “old line” families in Virginia, were “high Church” Episcopalian.¹²¹ His mentor, West Point Superintendent Thayer, “maintained a strict neutrality on the subject [religion] but he did not interfere with the cadets’ often obvious indifference – and even hostility – to worship.”¹²² Attending Sunday chapel was required for every cadet, but Thayer did not

¹¹⁸ Ibid.,8.

¹¹⁹ Smith, *College Reform*, 41.

¹²⁰ Ibid.,43.

¹²¹ Edwin Dooley, email message to author, February 18 and April 27, 2018. “High church” Episcopalians emphasized the importance and need of the regular order of the church, rituals, ceremonies, images, and the priesthood. “Low church” Episcopalians deemphasized church rituals, ceremonies, images, and even the necessity of the church hierarchy for salvation of the individual believer. Closer to some features of the Protestant approach to religion.

¹²² Thomas Fleming, “The Father of West Point: The U.S. Military Academy Was as Ineffective as the Peacetime Army When Colonel Sylvanus Thayer Arrived in July 1817, but He Left It with a Reputation for Imparting Character as Well as Knowledge,” *Military History Quarterly* 20, no. 1 (2007): 91.

prevent cadets who did not want to participate from sitting during the service or reading textbooks during sermons.¹²³ Smith, on the other hand, would take a direct interest in the spiritual well-being of “his” cadets.

At West Point during the late 1820s and early 1830s, there was an outburst of religious fervor at West Point.¹²⁴ This religious enthusiasm seems to have had a great influence on Smith.¹²⁵ He eventually shifted along with his wife, from being a “high Church” Episcopalian to a “born again” Evangelical Episcopalian.¹²⁶ At VMI, religion would play a huge role in the lives of cadets. Smith wrote that the VMI regulations allowed the Superintendent to determine what religious duties should be prescribed. He decided “that all cadets, except those whose parents objected on the ground that the regulations would infringe on the liberty of conscience, were required to attend Bible recitation every Sunday.”¹²⁷ To ensure that cadets received instruction in all Christian denominations, and to quell suggestions that he was indoctrinating into one faith, Smith worked out a system where cadet companies would rotate among local Presbyterian, Methodist, Episcopalian, and Baptist churches depending on which Sunday it was in the month.¹²⁸ Smith also held prayer sessions for cadet in barracks and his quarters during the week. Starting with the first graduating class in 1842, Smith would present every graduate a Bible along with their diploma.¹²⁹ Smith and the few other Episcopalians in the town would form

¹²³ Ibid., 91. One of the cadet leaders of this revival at West Point was Leonidas Polk, Class of 1827, future bishop of the Episcopal Diocese of Louisiana, founder of the University of the South and Confederate General during the Civil War.

¹²⁴ Ibid., 91.

¹²⁵ Edwin Dooley, email message to author, February 18 and April 27, 2018. “Born again” Evangelical Episcopalians stress the immediate and personal relationship of the individual believer to Christ. In this regard, a Christian’s “rebirth” and salvation do not depend on priests, sacraments, or rituals but on faith alone. In general, Evangelical Episcopalians are considered “low church,” but even more so.

¹²⁶ Ibid.

¹²⁷ Smith, *The Virginia Military Institute Its Building and Rebuilding*, 83.

¹²⁸ Ibid., 94.

¹²⁹ Edward Dooley, email message to author, February 18, 2018. The tradition of giving a Bible to graduates remains to this day with a separate ceremony conducted by the Post Chaplain in the week before graduation. Cadets can request what religious text they want to receive.

Grace Episcopal Church in 1840, the first Episcopal Church in Lexington.¹³⁰

Smith visited West Point in the 1850s and was disappointed in what he saw. Later addressing the VMI cadets, he said, “The religious tone among the cadets was lamentably low....No Bible instruction prevails there.”¹³¹ However, this was not the case at VMI; Smith told the cadets that “the word of God was known and read and studied among us” and during the last session at VMI, all had been “enlightened by His Spirit and had been ‘born again’.”¹³²

Religion, for Smith, reinforced the goal of producing graduates that were good and moral citizens – his ideal of a “Christian gentleman.”¹³³ He believed individuals needed to develop “an inner sense of right, rather than depending on the dictates of society or some external authority.”¹³⁴ In almost all of his writing and speeches on colleges and college reform, there was a section on religious instruction. Smith wrote, “There is no part of my life at the Institute that I look back upon with more real pleasure than the cadets’ prayer meetings.”¹³⁵ He appealed to the VMI cadets not to imitate the West Point’s cadets’ lack of interest in religion, instead reminding them of their heritage and school’s reputation, saying, “I appeal to your State pride, - how dear it is to you, none but a Virginian can properly estimate, - to set a high tone of virtue and morality and order – that you may hand down to your successors the good name which has been transmitted to you.”¹³⁶

The fact that Smith was a “born again” Episcopalian in the majority Presbyterian town of

¹³⁰ Smith’s math tutor William Bryant became the first Rector at the church. Robert E. Lee attended this church while President of Washington College after the Civil War. After his death, the church was rebuilt and re-named R.E. Lee Memorial Church in 1908.

¹³¹ Smith, *Introductory Address to the Corps of Cadets of the Virginia Military Institute on the Resumption of Academic Duties September 2nd, 1856*, 23.

¹³² *Ibid.*, 24.

¹³³ Edwin L Dooley, email message to author, February 18, 2018

¹³⁴ Edwin L Dooley, “Francis H. Smith’s European Trip in 1858,” *Rockbridge Historical Society XIV* (2017): 157.

¹³⁵ Smith, *The Virginia Military Institute Its Building and Rebuilding*, 257.

¹³⁶ Smith, *Introductory Address to the Corps of Cadets of the Virginia Military Institute on the Resumption of Academic Duties September 2nd, 1856*, 26.

Lexington caused some friction upon his arrival at VMI. James Hutson wrote “Presbyterians worried that Colonel Francis Smith...a ‘thoroughly stitched Episcopalean [sic]’ was turning the college into a center for his denomination by bringing in an Episcopal chaplain, sponsoring services from the Book of Common Prayer, and selecting students mainly from Episcopal families.”¹³⁷ While these claims were unsubstantiated, they show that Smith had to contend not only with education and discipline at VMI, but also with the conduct and perception of religious education. Any criticism of religious instruction meant little to Smith. He wrote that there was not [a] “more comforting blessing than the effort to labor for the religious interest of young men at college, on the art of those charged with their training.”¹³⁸

VMI was the second public college in Virginia, and it was among the first colleges in the South to offer engineering and math courses.¹³⁹ The popularity of VMI and the military school concept (“practical courses” combined with discipline) soon spread throughout the South.¹⁴⁰ In a letter to the Governor of Virginia shortly after VMI opened, Crozet wrote, “There is, on the contrary, a very favorable feeling toward this infant institution prevailing, not only among the public of Virginia, but even in other states, from which applications have actually been made . . . and from every indication it may be expected that when the Institute is in full operation, the want of accommodations alone will limit the number of cadets.”¹⁴¹ As the reputation of both Smith and VMI spread, other states looked at creating or modifying existing colleges and universities to

¹³⁷ James H. Hutson, *Religion and the New Republic: Faith in the Founding of America* (Lanham, MD: Rowman and Littlefield, 2000), 45.

¹³⁸ Smith, *The Virginia Military Institute Its Building and Rebuilding*, 257.

¹³⁹ Thomas W. Davis ed., *A Crowd of Honorable Youths Historical Essays on the First 150 Years of the Virginia Military Institute* (Lexington, Virginia: The VMI Alumni Association, 1988), 303. The University of Virginia (1819) was the first public college in Virginia.

¹⁴⁰ VMI also had an effect on other Virginia colleges. Washington College and the College of William and Mary adopted a system of demerit and class standing and the University of Virginia introduced a system of state students. Couper, I., 210.

¹⁴¹ Couper, *One Hundred Years at VMI, 4 Vols.* I, 62.

military schools. Representatives from other states visited and wrote to Smith for information and advice on creating military colleges. He was quite pleased to provide information and opinions. The state of South Carolina established in 1842 its own military colleges, the South Carolina Military Academy (composed of the Citadel and the Arsenal), following the VMI pattern.¹⁴² Throughout the 1850s, a number of military colleges, both public and private, were founded throughout the south, also based on the VMI model. Major William T. Sherman, who was appointed Superintendent at the Louisiana Military Academy (now Louisiana State University) in 1859, wrote to Smith for advice on courses of instruction, uniforms, regulations, and a suitable location for the school.¹⁴³

The president of the University of Alabama, Landon C. Garland, wrote to Smith numerous times in 1856 while attempting to convince the Alabama state legislature to convert the school from a civilian institution to a military one. In the case of the University of Alabama, Garland's push to convert the school was not so much guided by the gathering war clouds as by student misbehavior. Alabama was rife with discipline problems including fights, riots, duels, drinking, inattention, and general rowdiness. Garland wrote the Alabama governor, "The old collegiate system had proved a failure. The Institution was doing more harm than good. For one good scholar it sent out, perhaps two, -- two who were rakes or drunkards or problems. This was an evil inherent in the system."¹⁴⁴ Garland had graduated from Hampden-Sydney (before Smith's tenure) and taught at Washington College in Lexington and other Virginia colleges before

¹⁴² South Carolina also had a problem with the state guards at its arsenals. There were two military colleges established in South Carolina, the Arsenal for freshmen in Columbia, S.C., and the Citadel in Charleston, S.C., for upperclassmen. They were combined into the South Carolina Military Academy in 1860. The same language that was used by the Virginia legislature in bills created VMI were used by the South Carolina legislature.

¹⁴³ Edwin L. Dooley, Jr., "Smith and VMI on the Eve of the Civil War," in *A Crowd of Honorable Youth*, ed. Thomas W. Davis et al. (Lexington: VMI, 1989), 17-18.

¹⁴⁴ Dooley, "A Fine College from This Time Forward': The Influence of VMI on the Militarization of the University of Alabama," 3.

heading to Alabama, so he was probably aware of the VMI system and Smith. Smith was only too happy to share his views on the benefits of military education and discipline. Heeding this advice, the University of Alabama became a military college in 1860. On Smith's recommendation, several VMI graduates joined the Alabama faculty and new military staff, including James Murfee, who became Commandant of Cadets during the Civil War.¹⁴⁵

Between 1842 and 1860, many states established or modified existing schools using the VMI template including, South Carolina (the South Carolina Military Academy), Kentucky (Western Military Academy, Kentucky Military Academy), Maryland (Maryland Military Academy), Louisiana (Louisiana Seminary of Learning and Military Academy – now Louisiana State University), Georgia (Georgia Military Institute), North Carolina (North Carolina Military Institute), Alabama (University of Alabama), Arkansas (Arkansas Military Institute, Pine Bluff Military Academy) and Florida (West Florida Seminary – now Florida State University).¹⁴⁶

Smith also believed that other non-military colleges could benefit from a VMI type system. He wrote two pamphlets, *The Regulations of Military Institutions as Applied to the Conduct of Common Schools* in 1849 and *College Reform* in 1851 emphasizing the benefits of discipline and a curriculum heavy in mathematics.¹⁴⁷ Along with information on VMI's curriculum and regulations, Smith recommended VMI graduates as faculty members; they were readily hired by the colleges. His advice was highly sought after, and he effectively ran a teacher-placement service for VMI graduates.

¹⁴⁵ Ibid.,3.

¹⁴⁶ Bruce Allardice, "West Points of the Confederacy: Southern Military Schools and the Confederate Army," *Civil War History* 18, no. 4 (1997): 310-331. The University of Alabama, the University of Nashville, and the University of the South, Sewanee all served as military colleges before the Civil War.

¹⁴⁷ Wineman, "Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform," 123.

By 1855, the *VMI Register of the Faculty and Cadets* showed that the Academic Staff had grown to eight professors and two cadets acting as assistant professors. Education consisted of four years of instruction, and the steady growth of cadets led to additional faculty hires.¹⁴⁸ The mathematic course of study continued to expand, along with science-based courses, creating an extremely advanced curriculum for the antebellum period. Fourth Classmen (freshmen) learned arithmetic, algebra and geometry, English grammar, geography, and French. Third Classmen (sophomores) had courses in trigonometry, analytical geometry, descriptive geometry, shades and perspective, surveying, differential and integral calculus, French, landscape drawing, and Latin. Second Classmen (juniors) had national philosophy, chemistry, Latin, topography, and linear drawing. First Classmen (seniors) took geology and mineralogy, military and civil engineering, infantry and artillery tactics, English literature, rhetoric and logic, geography, agricultural chemistry, moral philosophy, and Constitutional Law. Few colleges during this period offered anything close to the variety of these courses. VMI was the first college in the South to offer courses in general chemistry, mineralogy, geology, and agricultural chemistry.¹⁴⁹ Events and leaders in Virginia would soon push VMI towards more of an agriculture focus.

In Bruce Allardice's groundbreaking study on Southern military schools, he states that between 1827 and 1860, there were over one hundred military colleges, military academies, and universities with cadet programs in the slave states.¹⁵⁰ During the same time period, only fifteen military schools have been identified in free states, and many of these failed before the Civil War, the major exception being Norwich University.¹⁵¹

¹⁴⁸ Virginia Military Institute, "Register of the Officers and Cadets of the Virginia Military Institute 1855."

¹⁴⁹ Wineman, "Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform," 91.

¹⁵⁰ As Bruce Allardice states, "In the mid-1800's the line between a college and a high school was often unclear. Many antebellum schools calling themselves "colleges" were in fact nothing more than glorified academies/high schools." Bruce Allardice, "West Points of the Confederacy: Southern Military Schools and the Confederate Army," *Civil War History*, December 1997, Footnote 49.

¹⁵¹ Allardice, "West Points of the Confederacy: Southern Military Schools and the Confederate Army," 17.

Why did the South have so many military schools and colleges? In his book, *The Militant South*, John Hope Franklin argues that military schools in the South enjoyed support and popularity because of the Southern martial spirit, especially in the decade before the Civil War.¹⁵² Historian Rod Andrew maintains that southern militarism was less a regional phenomenon than a “received tradition” of republican ideals where good soldiers were good citizens.¹⁵³ While a large number of military schools was established in the 1850s, the Virginia Military Institute and the Citadel and Arsenal were established twenty years before the start of the war. These two military schools were not established simply to train militia officers, but to produce engineers and teachers for state service. Northern states had numerous advanced educational systems, (among them Rensselaer Polytechnic Institute, the Polytechnic College of Pennsylvania, Columbia University and Princeton University) and did not need a military college system to produce engineers and teachers.¹⁵⁴

As early as 1847, some Southerners were advocating for military colleges, not as much for their educational benefits as their military ones. Professor Augustus Longstreet of Georgia wrote, “We should have a military school in every State.... Tactics should be a part of the study and training of every college.”¹⁵⁵ Likewise, Georgia Governor Joseph Brown explained to the legislature 1860 during college debates, graduates of a military college would have a “knowledge of military science among the people of every county in the State, which all must admit, in these perilous times is a desideratum second in importance to none other.”¹⁵⁶ However, historian Bruce Allardice maintains that the growth of military schools in the South was a result of

¹⁵² John Hope Franklin, *The Militant South* (Cambridge: Harvard, 1956), 167.

¹⁵³ Sacca, “The Lost Cause: Myth as Educational Metaphor in the New South,” 249.

¹⁵⁴ Terry S Reynolds, “The Education of Engineers in America before the Morrill Act of 1862,” *History of Education Quarterly* 32, no. 4 (1992): 467-468.

¹⁵⁵ Franklin, *The Militant South*, 229.

¹⁵⁶ Allardice, “West Points of the Confederacy: Southern Military Schools and the Confederate Army,” 311.

educational needs and the desire to impose discipline upon students. Only Georgia Military Institute and certain Alabama state military schools, such as Glennville, were specifically founded due to “sectional conflict preparation.”¹⁵⁷

VMI gave Smith the perfect opportunity to accomplish his educational vision. By using West Point’s regulations, system of military discipline, and scientific education pioneered at the military academy, VMI would become to Virginia what West Point was to the United States. The regulations of the Institute and guarding of the Arsenal provided discipline, while science and mathematics would give prominence to a new type of educational system in Virginia. Smith knew that he was establishing a new type of school never before seen in the South. As historian Brad Wineman writes, “Smith became a true visionary by being the first to adopt the Academy’s core curriculum of science and mathematics to make more productive citizens, not simply better military officers.”¹⁵⁸ The liberal arts were not overshadowed by technical subjects at VMI. Smith was able to strike a balance between the classical and technical curriculums that dominated the first half of the 19th century. Smith himself ascribed the success of VMI to two reasons: “its peculiar discipline – and its still more peculiar course of instruction.”¹⁵⁹ Last, Smith was an antebellum “progressivist” who believed that teaching technical subjects was a way to free the South from material dependence on the North.¹⁶⁰ His non-traditional outlook on education and college made VMI a natural place at which to offer new programs, such as agricultural education, over traditional classical college campuses.

¹⁵⁷ Bruce Allardice, email message to author, 2013.

¹⁵⁸ Wineman, “Francis H. Smith: Architect of Antebellum Southern Military Schools and Educational Reform,”45.

¹⁵⁹ Smith, *Introductory Address to the Corps of Cadets of the Virginia Military Institute on the Resumption of Academic Duties September 2nd, 1856*, 7.

¹⁶⁰ Sacca, “The Lost Cause: Myth as Educational Metaphor in the New South,”248.

CHAPTER 5 COCKE, RICHARDSON, AND GILHAM

Smith was aided in his work at the Institute by three individuals who would become instrumental in the expansion of VMI into agricultural education. These gentlemen were Philip St. George Cocke, William Richardson, and William Gilham.

Philip St. George Cocke was born into a planter's family in 1809 and became one of most successful planters with one of the largest plantations in the state of Virginia by the 1850s. His father, John H. Cocke, was a co-founder of the University of Virginia, a successful planter and an early convert to the evils of tobacco farming. Philip St. George Cocke attended the University of Virginia for three years before entering West Point and graduating in 1832 as a lieutenant of artillery.¹ After two years in the Army, Cocke resigned his commission and married Sally Elizabeth Bowdoin, an heiress from Surry County, Virginia. In 1838, he bought a 1,800-acre plantation which he named "Belmead." Cocke subsequently acquired extensive agricultural holdings in both Virginia and Mississippi. By 1860, he owned more than 27,000 acres of land, 610 slaves, and had a net worth of more than \$1,000,000.² To manage these vast holdings, Cocke used overseers and provided them with detailed instructions. He also became interested in agricultural subjects, building a personal library of over 600 titles with many volumes dealing

¹ Albert K. Cocke and A. Robert Kuhlithau, "VMI's Forgotten Benefactor: Philip St. George Cocke," *VMI Alumni Review* (Spring 1992): 13

² Kenneth E. Koons, "Philip St. George Cocke (1809-1861)" *Encyclopedia Virginia*. March 24, 2016. https://www.encyclopediavirginia.org/Cocke_Philip_St_George_1809-1861#start_entry. In 1861, Cocke's estate was appraised at \$1,412,000, ten time greater than Ruffin's. Allmendinger, *Ruffin.*, 216.

with agriculture and plantation operations and eventually writing a book, *Plantation and Farm Instruction* in 1852.¹



Figure 6. Philip St. George Cocke, 1850s

Cocke and Smith had known one another since their time at West Point. Both were Virginians, and Smith was just one year behind Cocke. Their similar backgrounds and experiences in Virginia, West Point, and the Army, combined with interest in education and agricultural subjects caused them to form a strong and lasting friendship. Their correspondence was frequent, open, and warm, with Cocke writing Smith personal details about his family, plantations, and business.

¹ Philip Cocke, *Plantation and Farm Instruction, Regulation, Record, Inventory and Account Book of P. S. Cocke*, Barbour Papers, University of Virginia Archives.

Due to his family's reputation in Virginia and his impressive wealth, Cocke was first appointed by the Governor to VMI's Board of Visitors in 1846. He would serve on the Board as president from 1846 to 1850, and again from 1858 to 1861.² "Cocke," wrote a VMI historian, "was a man of great wealth who brought to the VMI Board a great enthusiasm."³ He remained a passionate supporter of VMI from the mid-1840s through the start of the Civil War in 1861. He was intimately familiar with the operation of VMI from his time on the Board and his friendship with Smith. As a testament to the esteem that Cocke held for VMI and Smith's educational views, Cocke's three sons would attend VMI: John Bowdin Cocke (1856), Philip St. George Cocke, Jr. (1866), and William Ruffin Coleman Cocke (1867).⁴

As president of the Board of Visitors, Cocke immersed himself into making VMI a better place of learning. The historian William Couper wrote that Cocke had two great goals for VMI: "to make it the great polytechnic institution of the South and to provide it with a physical plant of distinctive architectural excellence and taste."⁵ The main issues facing Smith and the Board of Visitors was the need for new barracks to house the cadets, lecture space, and a library. Cocke wrote that his, "negros were better quartered than the cadets were."⁶ Regarding the new barracks, he further wrote:

These new ones to be erected in part from time to time as required – always, however, as a part of the general design – until in the end an harmonious whole shall be procured – beautiful and inspiring in style as well as commodious and well adapted to the purposes in view.⁷

² Smith, *The Virginia Military Institute Its Building and Rebuilding*, 264-268.

³ Couper, *One Hundred Years at VMI, 4 Vols. I*, 196.

⁴ VMI Archives, "Historical Rosters Database," 2018, <https://archivesweb.vmi.edu/rosters/record.php?ID=318>.

⁵ Couper, *One Hundred Years at VMI, 4 Vols. I*, 196.

⁶ *Ibid.*, 197.

⁷ *Ibid.*, 196.

Cocke suggested to Smith and the state Adjutant General, William Richardson, that they employ the architect that Cocke had used to build “Belmead.” This architect was Alexander J. Davis, one of the “foremost architects in the country.”⁸ Davis would go on to design the barracks and other buildings on campus.

While having a close personal connection with the University of Virginia, Cocke was a proponent of VMI receiving additional funding from the state legislature. In his role as a member of the VMI Board of Visitors and later as the Board President, he frequently wrote about the need for VMI to have increased funding. In a letter to Smith on February 15, 1848, Cocke wrote that the State of Virginia was getting more out of VMI than it was investing. Using West Point as an example, Cocke claimed that cadets at the federal military academy cost \$10,080 a month, “a considerably larger sum than the whole annual appropriation towards the support of the Institute. I called the attention of the Committee to this and a few other facts.”⁹

Cocke’s acquaintance, William Richardson, also had a long association with the agricultural as well as the military establishment in Virginia. Born in 1795, Richardson had commanded a militia company as a 16 or 17-year-old officer in the War of 1812. In the 1820s and 1830s, he held numerous state positions, including Secretary of the Virginia Commonwealth and first librarian of the Virginia State Library.¹⁰

Richardson was appointed the Adjutant General of Virginia in 1841 and served in this position until 1876, aside from one year right after the Civil War. In this role, he was responsible

⁸ Ibid.,199.

⁹ Ibid.,196.

¹⁰ In a letter written in 1868, Richardson stated that he joined the Richmond Volunteers as a 16-year-old private volunteer. At the end of 4 months, the unit was recalled from Norfolk, and Richardson was a first lieutenant of the company. He continued in service with the company until the war was over, and he was promoted to captain. (Richardson Letter, 17 April 1868, transcribed by William Couper (#377), VMI Archives, Lexington, VA) As state librarian, Richardson gave duplicate copies of books located in the state library in Richmond to the newly formed VMI, establishing the school’s library.

for all state military forces. The Adjutant General was also a permanent member of the VMI Board of Visitors, and Richardson became an enthusiastic ally of VMI. He served as the school's representative in dealing with the state legislature, as well as with influential men in Virginia. Richardson was an early believer in the education system at VMI; he sent his son, William Harvey Richardson, Junior, who was a member of the school's third class in 1844.

Over the many years serving together both as the head of Virginia's armed forces and as a member of the VMI Board of Visitors, Richardson and Smith became close friends. Their voluminous correspondence spanned the period from 1841 until 1876. Smith wrote of Richardson (in a draft of a history of VMI):

When I consider the early history of the Institute, its rapid growth and development, and bring before me those who were the chief agents in this work, I know of no one whose pervading influence was so marked as Gen. Richardson's. He had been a soldier in the War of 1812, and though old timey in many of his ideals, there was always the ring of true metal about him. He was fearless and outspoken in the discharge of all of his duties and stood up for the discipline which he knew so essential for the perpetuity of the school. He was wise. He saw the dangers from the gathering clouds which were soon to burst upon the country in the dreadful Civil War of 1861-1865, and his mind was constantly occupied with devising ways whereby the Institute might do its full work for the State and Country. The voluminous correspondence with him during these long years abundantly testifies to all of this. . . . But I enjoyed through this long period the happiness of having in General Richardson as true and steadfast a friend as ever lived.¹¹

Richardson was a landowner and greatly interested in agricultural issues. He owned a farm west of Richmond, where he practiced "scientific agriculture techniques, and raised grain, fruit, and livestock."¹² In addition, he was active in promoting agricultural education throughout the state. Richardson was instrumental in creating the state Agricultural and Horticultural Society

¹¹Francis H. Smith III, "Old Spex of the VMI" (typescript). VMI Archives, Lexington, VA., 1941, 76. This passage was in the rough draft for Smith's *History of the Virginia Military Institute*, but not in the final book.

¹² Charles Turner, "William H. Richardson, Friend of the Farmer," *Virginia Cavalcade* 20, no. 3 (1971): 16.

in 1841 and was elected its first president. Under his guidance and organization, two state agricultural fairs were held outside of Richmond in 1846 and 1848.¹³



Figure 7. William Richardson

In 1852, the now defunct Agricultural and Horticultural Society was re-organized as the Virginia State Agricultural Society. Edmund Ruffin was elected president and Richardson was elected as a member of the executive committee. The following year, Ruffin was succeeded by Philip St. George Cocke as society president. At this time, Richardson, being a member of the wrong political party, was removed from his position as Secretary of the Commonwealth but remained as Adjutant General of Virginia.¹⁴ With the loss of one of his political positions, he had additional time to dedicate to state agricultural affairs. Cocke convinced Richardson to serve as the society's general agent. As general agent, Richardson would be responsible for traveling around the state, recruiting members for the society, soliciting funds, and educating farmers and

¹³ Ibid.,16.

¹⁴ Richardson was a Whig and the new governor, John B. Floyd, was a Democrat. Couper, *One Hundred Years at VMI, 4 Vols.* I, 223.

planters in subjects such as the necessity for deep plowing, proper care of stock, and overall farm management.¹⁵

In this role as general agent, Richardson was very successful, visiting every corner of the state with his son and VMI graduate, William Richardson, Jr. He was extremely effective in recruiting members and gaining revenue for the society; in a few years, membership increased from 339 to over 5,000 members and funds increased from \$268 to over \$40,000.¹⁶ Richardson's work, Cocke later wrote, of "enlisting members and life members, securing stock and articles for exhibition at the annual fair, obtaining the aid of the newspaper press, conciliating the railroads and other transportation companies, and spreading his correspondence over the whole State...was influential."¹⁷ Newspapers also praised Richardson's ability to connect with farmers from all over the state. One noted Richardson's appointment and performance, calling it "a master stroke which gave vitality to an institution that had hitherto dragged out a sleepy and precarious existence."¹⁸

Building on his success with prior agricultural fairs, Richardson created new fairs for the state society. During the fall of 1853, the first fair was held in Richmond and met with great success. By using contacts and information gathered during his travels throughout the state, the event was a "great and imposing assemblage of worth, intelligence, wealth, and enterprise of the whole state."¹⁹ Additional fairs would be held throughout the late 1850s, and Richardson would serve as president of the agriculture society before the Civil War.

¹⁵ Turner, "William H. Richardson, Friend of the Farmer," 19.

¹⁶ *Ibid.*, 19.

¹⁷ *Ibid.*, 19.

¹⁸ *Ibid.*, 17.

¹⁹ *Ibid.*, 19.

Richardson also advocated for an agricultural college for the state of Virginia. In an 1843 letter to the *Richmond Enquirer* (quoted in the *Southern Planter*), he advocated a state agricultural school based on a manual labor school at Hofwyl, Switzerland.²⁰ Richardson, “foresaw the advantage of creating at the Institute a new department to include instruction in chemistry, geology, and mineralogy, and to adapt the work of the chair to the agricultural and industrial needs of the State.”²¹

Cocke, Richardson, and Smith, would play a central role in obtaining state funding for VMI, advocating for agricultural education in Virginia, and eventually placing an agricultural school at VMI. By the beginning of the 1850s, all three had become savvy promoters of the school. They used their many political contacts to encourage visits by state representatives to VMI and had cadets travel to Richmond for parades and reviews while the legislature was in session. For example, during the 1849-1850 legislative session, Smith, Cocke, and Richardson stayed in Richmond during the winter to lobby the state legislature for \$46,000 in appropriations for a new barracks and other improvements to the Institute. In March 1850, the legislature voted to approve all the funds.²²

At an earlier legislative session during 1845-1846, Richardson lobbied to expand instruction in chemistry, geology and mineralogy. He succeeded in securing an additional \$1,000 from the state assembly for VMI.²³ This additional funding was earmarked for the creation of two positions: a physical sciences professor, and a commandant of cadets.

²⁰ Brown, "Agriculture Science and Education in Virginia before 1860," 205.

²¹ Wise, "A Special Report to the Board of Visitors of the Virginia Military Institute on The History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture,," 12

²² Couper, *One Hundred Years at VMI, 4 Vols. I.*, 214.

²³ Wise, "A Special Report to the Board of Visitors of the Virginia Military Institute on the History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture, Including a Sketch of the Physical Survey of Virginia by the School of Applied Science," 12.

Advertisements were placed in Virginia newspapers, and inquiries were made through Army channels.²⁴ One of the officers recommended to Smith from the Army was a Virginian and West Point graduate, Lieutenant George H. Thomas.²⁵ Smith sent correspondence to Thomas about the position but Thomas, part of the forces engaged in the Mexican War, was preparing for the upcoming offensive in Mexico and declined the offer. Thomas did, however, recommend his West Point classmate, Lieutenant William Gilham, for the position.

Gilham was born in Vincennes, Indiana in January of 1818. Gilham's parents were originally from Virginia but had migrated to Indiana in the early 1800s. As a boy, Gilham had tutors and received very little formal schooling.²⁶ In 1836, he won an appointment to West Point through a Virginia connection and attended the military academy as a Virginia cadet.²⁷ He graduated fifth in his class four years later.²⁸

Gilham was then commissioned as an artillery officer. After his initial posting, Gilham returned to West Point as assistant professor of natural and experimental philosophy from 1841 to 1844.²⁹ He married Cordelia Adelaide Hayden, the daughter of a senior army officer, in 1843. When the War with Mexico started, Gilham fought under General Zachary Taylor at the beginning of the conflict and was distinguished for gallantry at the Battles of Palo Alto and Resaca.³⁰ Upon receiving a letter from VMI inquiring about his interest in the teaching position,

²⁴ West Point Professor Mahan recommended Lieutenant W. S. Rosecrans, then an instructor at West Point, for the position.

²⁵ Thomas, a Virginian, did not join the Confederacy and rose to become a general in the Union Army. He is famous for being the "Rock of Chickamauga." Thomas' family in Virginia always spoke of him in the past tense after he cast his lot with the North.

²⁶ Robert R. Stevens, "Vincennes-Born Man Led Dixie Troops against Hoosiers," *Valley Advance*, May 31, 1977.

²⁷ William Couper, "William Gilham" (Lexington, Virginia, n.d.), Virginia Military Institute Archives, Lexington, Virginia.

²⁸ Stevens, "Vincennes-Born Man Led Dixie Troops against Hoosiers."

²⁹ *Ibid.*, There is some confusion on whether Gilham was at this post when he was offered the job at VMI. In Wise's *Military History of the Virginia Military Institute*, Gilham was teaching at West Point when offered the VMI position, but Couper's *One Hundred Years* has Gilham's teaching at West Point before going to fight in Mexico. Stevens newspaper article also has Gilham teaching at West Point before service in Mexico.

³⁰ Jennings C. Wise, *The Military History of the Virginia Military Institute* (Lynchburg: Bell, 1915), 55.

Gilham sent back his positive response and endorsements, one of those being his former company commander, Braxton Bragg.³¹

Gilham became the Commandant of Cadets, Instructor of Tactics, and Professor of Natural and Experimental Philosophy (akin to modern day physics) and Chemistry with the rank of major in 1846.³² The selection of William Gilham was fortuitous for VMI. Besides being a capable professor of philosophy and agriculture, he was an outstanding commandant and instructor of tactics. Within a year of arriving at VMI, Smith said that Gilham was “quick, accurate and self-possessed, he had a magnetic power of command which made the drill of the corps the equal, if not the superior of that at West Point. In the command of the Battalion of Cadets, Major Gilham has no superior.”³³ He was also popular with the cadets. Cadet Munford wrote that Gilham “was the brightest professor we had in his day – scientifically – and was a superb drill master, the best I ever saw.”³⁴ James T. Murfee, who graduated in 1853 and would serve as the Commandant of Cadet at the University of Alabama during the Civil War, wrote in later years,

I thought then, as the cadets thought, that Gilham exerted more influence upon the characters of the young men than any other officer or professor there. “Old Gill,” as we all called him, was our beau-ideal of an educator, gentleman and drillmaster; he commanded our profound respect, admiration and love. To us he was almost the whole institution.³⁵

The contributions that Gilham made to the educational and military aspect of VMI have largely been overlooked due to the Civil War exploits of another VMI instructor, Thomas J. (Stonewall)

³¹ Couper, *One Hundred Years at VMI*, Vol I, 158.

³² *Ibid.*, 55.

³³ Smith III, “Old Spex of the VMI,” 78.

³⁴ Smith, *The Virginia Military Institute Its Building and Rebuilding*, 111.

³⁵ James T. Murfee to Thomas T. Munford, 18 July 1903, Munford-Ellis Family Papers, Duke University.

Jackson. However, without Major Gilham, VMI and its Corps of Cadets would not have had the positive reputation they did in the state of Virginia prior to the Civil War.³⁶

³⁶ Gilham also provided many other services to VMI including installing gas lights in barracks before the Civil War. The gas lights were some of the first in the state of Virginia, another indication of his leadership.



Figure 8. William Gilham

In his early years at the Institute, Gilham seemed to be everywhere and doing everything. As Commandant of Cadets, he lifted the burden somewhat from Smith in dealing with disciplinary problems and ensuring that the Corps of Cadets received military training. Gilham was also involved with the building of the new barracks. While traveling to New York City to purchase scientific equipment, he met with the architect Cocke recommended, Alexander Davis, and successfully negotiated terms with Davis to design the new barracks.³⁷

Teaching two academic disciplines with the additional duties of commandant soon became too much for Gilham. In 1850, Gilham's teaching position was eliminated, and two separate chairs in industrial chemistry and experimental philosophy were created. Gilham took the chemistry chair, while Major Thomas Jackson was hired to teach experimental philosophy and artillery instruction.

In 1851, Gilham composed a special report for Superintendent Smith on how he proposed to organize his new chemistry department. In addition to suggesting courses in general chemistry, mineralogy, and geology, he also proposed a course in agricultural chemistry. In justifying a course in agricultural chemistry, Gilham wrote that four-fifths of the VMI cadets' fathers were farmers. He further wrote, "It is but fair to infer that a large proportion of these young men will in their turn engage in the pursuit of agriculture sooner or later, and that those who do not, will, from early association if from no other cause, feel deeply interested in the agricultural prosperity of their state."³⁸

Historian Jennifer Green has researched and written exhaustive studies of antebellum Southern military colleges and the emerging middle class in the South. She contends that

³⁷ Couper, *One Hundred Years at VMI, 4 Vols. I.*, 203.

³⁸ Wise, "A Special Report to the Board of Visitors of the Virginia Military Institute on the History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture, Including a Sketch of the Physical Survey of Virginia by the School of Applied Science," 14.

military schools allowed non-elite families to send their sons to schools that offered practical training.³⁹ The data she analyzed indicates that families engaged in professional employment enrolled their sons in military schools at higher rates than those families engaged in agriculture. Additionally, after graduation, those same sons avoided agriculture. Green's research shows that "fully 78.8 percent of men with a single occupation remained outside of agriculture; all alumni, regardless of single or multiple careers, maintained a high nonagricultural rate of 76.6 percent."⁴⁰ Green surveyed several different military colleges and alumni career fields over the antebellum period. However, if one looks at the later careers of VMI cadets in the early 1850s such as the VMI Class of 1852 when Gilham wrote his report to Smith, agriculture was the most common profession among its graduates.

The Class of 1852 entered VMI in 1848 and contained 59 cadets. Of the 59, 20 would list their post-graduation careers as either farmers or planters.⁴¹ As for the rest, eight were engineers, nine were lawyers, five doctors, eight teachers or professors, and six alumni "disappeared." The remaining were ministers, U.S. Army officers, ship or whaling crewmembers, railroad workers, and businessmen. Over one-third of the class was involved in agriculture at some point in their careers. They included Thomas Banks, a planter and slave owner, Edmund Ruffin's son Charles, and George Waddill, who became a prominent cotton planter in Mississippi and Louisiana.⁴²

While VMI did teach practical subjects such as mathematics and engineering to prepare students for a variety of jobs, there was a substantial interest by families and cadets in agricultural

³⁹ Jennifer R. Green, "Networks of Military Educators: Middle-Class Stability and Professionalization in the Late Antebellum South," *The Journal of Southern History* 73, no. 1 (2007): 44.

⁴⁰ *Ibid.*, 166.

⁴¹ This number contains alumni that listed planter/farmer and other professions. However, it was not uncommon for planters or even farmers to have secondary professions throughout their lives. Jennifer Green wrote, "In the diversifying southern economy, men could mix agriculture and nonagricultural careers...while working professionally." Green, *Military Education and the Emerging Middle Class in the Old South*, 26.

⁴² Archives, "Historical Rosters Database." All information on the Class of 1852 was obtained from the VMI Archives. A notarized list with professions is included as Appendix 1. Charles Ruffin did not graduate from VMI.

training and education. Gilham recognized this fact and proposed a plan to start the foundation of agricultural education at VMI.

Gilham's special report, forwarded by Smith to the governor and legislature, detailed how Gilham would implement agricultural education and how this would benefit agriculture in the state. He started this report by proposing that VMI adapt the same course of general chemistry that was taught at West Point and, "found so successful in that institution."⁴³ This course would be taught to cadets in the second class (junior) year. Additionally, Gilham proposed a course in mineralogy and geology. He wrote that this course would "make the class familiar with the most commonly occurring and useful minerals."⁴⁴ Particular attention would be paid to the geological features of Virginia. VMI, Gilham wrote, already possessed a cabinet of minerals and fossils and continued to receive more, which would aid in teaching the course.

He then recommended a course in agricultural chemistry. In justifying the course, he wrote:

The necessity for instruction of this kind will become manifest when we consider the fact, that no institution of learning in the state has as yet given such a course of instruction as to give its graduates a thorough scientific knowledge of the principles of agriculture and that the greater portion of the educated community are either interested or actually engaged in agricultural pursuits.⁴⁵

This agricultural chemistry course would be beneficial to even those cadets not desiring a career in agriculture. He wrote that the mission of the Board of Visitors "has always been to give our young men such an education as will be best calculated to make them practically useful."⁴⁶

Gilham could not think of a better course, embracing theory and practice of agriculture, to help

⁴³ Wise, "A Special Report to the Board of Visitors of the Virginia Military Institute on The History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture,,"13. Wise's report contains Gilham's report verbatim.

⁴⁴ Ibid.,13.

⁴⁵ Ibid.,13-14.

⁴⁶ Ibid.,14.

make graduates more useful in their various professions. The agricultural chemistry course would be taught to cadets in the first (senior) class and would be based on and provide a follow-up for the chemistry and geology course.

Gilham next proposed a course in practical and analytical chemistry. Where most colleges provided students the “privilege” of witnessing experiments and partly performed analysis in class, the VMI course would require cadets to perform these experiments themselves. After cadets had completed the general chemistry course, they would be divided into smaller sections and taken into the laboratory one at a time. There they would be required to, “make use of the apparatus in preparing various substances, re-agents, etc.”⁴⁷ After cadets became proficient in using the equipment, Gilham proposed to require that each cadet go through a course of chemical analysis, both qualitative and quantitative, including the analysis of soils. Gilham added that great schools of chemistry in Germany and within the United States, specifically Harvard and Yale, taught students in this manner. This hands-on instruction was instrumental in understanding chemical interactions and provided a practical knowledge of chemistry that could not be obtained otherwise.⁴⁸ In order to be able to provide this type of coursework, the VMI laboratory would need to be fitted for practical instruction at a slight expense. There would also be annual expenses associated with the program, such as repairing apparatus and replacing chemicals, but Gilham thought these would be too small to require any “specific appropriations.”⁴⁹

His next suggestion to the governor and legislature was an inspired example of combining academic instruction and learning at the publicly-supported Institute with service to

⁴⁷ Ibid.,14.

⁴⁸ Ibid.,14.

⁴⁹ Ibid.,15.

agriculture and farmers throughout the state. He proposed that the legislature pass a law making the VMI chemistry professor (Gilham) the “State Agricultural Chemist.”⁵⁰ For a small annual appropriation to cover traveling costs (Gilham recommended \$1,000), the state agricultural chemist and assistant would “make annual tours through different parts of the state, during the months of July and August when academic duties are suspended at the institute.”⁵¹ While on these trips throughout the state, he would visit as many farms “as time permits,” collect specimens of soil for analysis, and become acquainted with the “modes of conducting farming operations” such as manuring, saving manure and crop rotation.⁵² The chemist would also recommend improvements to current farming techniques in subsoiling, draining, liming, marling, and manuring and “endeavor to enlist every framer on the side of agricultural improvement.”⁵³ Finally, the chemist should be prepared to lecture on the benefits of agricultural chemistry, promote the formation of agricultural societies, and show the great importance of agricultural journals. During the academic year, the state agricultural chemist would engage with students and analyze the soil specimens collected during the summer and get results back to the farmers.⁵⁴

Gilham figured out a way in which “book-farming” could be used to help educate farmers throughout Virginia, while also training cadets in both agriculture and agricultural chemistry. This would reinforce VMI’s mission of producing “practical” graduates and would create a more well-educated generation of farmers. Gilham wrote that in previous years, great strides had been made in agriculture, but these improvements had only reached a small part of the state.

Experimental planters and farmers discovering agricultural advancements, such as Ruffin with

⁵⁰ Ibid., 15.

⁵¹ Ibid., 15.

⁵² Ibid., 15.

⁵³ Ibid., 15.

⁵⁴ Ibid., 15.

marl, were only having individual influence, not state-wide influence. Agricultural societies and journals were helpful in distributing new information, but Gilham believed that farmers also had to be made to feel that “his farm may be improved, that he may do something for the general cause, and that in so doing he will be enriching himself.”⁵⁵ The state agricultural chemist could accomplish this during his trips throughout the state, meeting farmers and collecting and sampling the soil.

To further illustrate his point, Gilham wrote that Maryland currently had an agricultural chemist. This chemist, who traveled throughout the state meeting farmers, lecturing, and analyzing soil samples, had “awakened such an interest and suggest such improvements that the value of the land is rising all over the state.”⁵⁶ Last, Gilham reminded the readers that VMI was a natural home for both agricultural chemistry and for a state agricultural chemist. It would soon have a laboratory fitted with special equipment for analytical chemistry and analysis, as well as a body of assistant professors and cadets to practice and perfect soil sample analysis. The agricultural chemist, wrote Gilham, “would be enabled to impart to his class all that he had learned in relation to the condition of agriculture in the state...knowledge so imparted would be diffused throughout the state more readily than in any other way.”⁵⁷

Gilham’s suggestions were adopted, and he traveled Virginia for the next ten years collecting soil samples from all areas of the state. The department of scientific agricultural chemistry was the first of its kind in the South.⁵⁸ His efforts did much to raise the profile of both agricultural chemistry in the state and VMI as a scientific and agricultural college.⁵⁹

⁵⁵ Ibid., 16.

⁵⁶ Ibid., 16.

⁵⁷ Ibid., 16

⁵⁸ Brown, "Agriculture Science and Education in Virginia before 1860," 206.

⁵⁹ Couper, *One Hundred Years at VMI* Vol I, 297.

In his new faculty position and state role, Gilham began a long association with the agricultural journal *Southern Planter*. In the June 1852 edition, the editors of the journal wrote about the “fitness” of Gilham for the task of analyzing soils. They reminded the Virginia farmers not to send their samples for analysis in the North. “We are thoroughly convinced,” they wrote, “that he will do so far more faithfully than it will be done by the majority of those who offer to do it at the North.”⁶⁰ At the back of almost every issue in the 1850s could be found his request for farmers to send in soil to be analyzed:

ANALYSIS OF SOILS, &c.

The undersigned is prepared to execute the analyses of Soils, Guano, Marls, Plaster, &c. &c at the Laboratory of the Virginia Military Institute. Packages may be forwarded through Webb, Bacon & Co. Richmond, or Echols & Pryor, Lynchburg. Persons desiring further information will please address WILLIAM GILHAM, Prof. Chemistry and Agriculture, V.M.I. Lexington, Va.⁶¹

His analyzed results were also published in *Southern Planter* along with recommendations to improve soil content. It is interesting to note, that Gilham was using the title of “Professor of Chemistry and Agriculture” in the early to mid-1850s. As will be described later, a formal agriculture program was not established at VMI until 1859.

In addition to providing analysis of collected soil samples, he also wrote articles on a variety of agricultural subjects for *Southern Planter*. In the June 1852 edition, the editor informed readers that “Major Gilham of the Military Institute at Lexington will commence a series of familiar essays on the very important subject of Agricultural Chemistry.”⁶² Over the next few years, Gilham wrote on a variety of subjects for the journal. In April 1853, he wrote an article on “Analyses of Marls of Lower Virginia” and in the same year wrote an article on

⁶⁰ “The Southern Planter,” June 1852.

⁶¹ “The Southern Planter,” February 1854.

⁶² “The Southern Planter,” June 1852.

“Scientific Agriculture.”⁶³ These articles were written in a technical style and included tables that served to substantiate his conclusions. For example, in the marl essay, he included tables on the equivalence of bushels of marl, pounds of lime, pounds of potassium, pounds of phosphoric acid, and pounds of ammonia that could be used for improving soil health.

Gilham’s work quickly won praise from many planters and farmers throughout the state, including Edmund Ruffin. In the summer of 1852, Ruffin wrote in *Southern Planter* that Gilham’s report on marl, “is a valuable addition to the before existing information on the subject.”⁶⁴ Ruffin continued that Gilham was “the first, and so far the only aid of this kind rendered by a scientific investigator to the agricultural laborers in this department of Virginia.”⁶⁵ Gilham also won praise from the Virginia Agricultural Society. In the January 1854 edition of *Southern Planter*, the Committee of the Virginia Agricultural Society wrote, “Regarding his analyses of marls, a report of which is herewith presented, as very valuable and interesting, take pleasure in awarding him the premium” award from the society.⁶⁶

Gilham also earned the respect of farmers by testing and exposing producers of “super-phosphates,” which were being advertised as miracle cures for soil woes. Many he found were “spurious and utterly valueless if not detrimental to the soil,” and a waste of money.⁶⁷ Gilham’s work on this subject sometimes elicited responses from the companies who manufactured these products. In August 1857, a Mr. B. M. Rhodes of the Rhodes Company of Baltimore, Maryland, wrote a letter to the editor of *Southern Planter* regarding Gilham’s critical review of the “Rhodes Super-Phosphate” product. Rhodes wrote that Gilham “assailed” his product, which Rhodes

⁶³ Ibid., March and April 1853.

⁶⁴ Wise, “A Special Report to the Board of Visitors of the Virginia Military Institute on The History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture,” 17.

⁶⁵ Ibid., 17.

⁶⁶ “The Southern Planter,” Jan 1854.

⁶⁷ Wise, “A Special Report to the Board of Visitors of the Virginia Military Institute on The History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture,” 18

claimed was made from a formula, “furnished by our State Chemist” of Maryland.⁶⁸ Gilham had discovered in his chemical analysis that the product contained super-phosphate of lime and carbonate of lime. Rhodes claimed that this “is a chemical impossibility; it never has existed, never can exist and never will exist in the same.”⁶⁹ Rhodes then added that Professor Gilham should “again examine the Rhodes super-phosphate and correct his chemistry.”⁷⁰ Rhodes closed his letter by stating that his product contained more soluble phosphoric acid than any other product, that he had made arrangements to meet increasing demands, and he asked farmers to order his product from agents in Richmond and Petersburg.

Over three years later, another letter from Mr. Rhodes appeared in the pages of *Southern Planter*. Rhodes wrote this second letter because Gilham recommended another one of Rhodes’ product to a farmers’ assembly. Rhodes, embarrassed and amazed that Gilham had recommended his product, sent the letter to the editor and stated it was, “an act of justice to this gentleman, which should have been long since rendered him.”⁷¹ His *mea culpa* began that in 1857, he did not know Gilham but now knew of Gilham’s reputation in the state. Rhodes, whose company did not make the “super-phosphates” product, had “full confidence” in the manufacturer and was, “assured by him [manufacturer] that you were in error, [so] we consented to take up the defense.”⁷² However, the company did receive other complaints about the product. Upon further testing, Gilham’s analysis of its composition was proven correct. Rhodes wrote:

We immediately suppressed the stock in market, discarded the party we had employed, and repaired the damage as far as we were able. Costing us many thousands of dollars – besides *mortification*, which money could not restore.

⁶⁸ “The Southern Planter,” Aug 1857, 179.

⁶⁹ *Ibid.*, Aug 1857, 179.

⁷⁰ *Ibid.*, Aug 1857, 179.

⁷¹ *Ibid.*, Aug 1857, 179.

⁷² *Ibid.*, Aug 1857, 179.

Rhodes then apologized to Gilham:

We also prepared communication of the facts, with apology for yourself; but yielding to personal appeals, suppressed this act of justice – although against our convictions, and which we have deeply regretted, - and while made at this late day, hope you will receive as earnest of our gratitude for your magnanimous allusions to our *present* article.

Gilham would continue with *Southern Planter*, becoming a co-editor with James E. Williams in 1859. Due to Gilham's work at VMI and his contributions to *Southern Planter*, the journal gave considerable support to the idea of agricultural education throughout the 1850s.⁷³ Gilham continued to submit articles after the Civil War, including one on "The Culture and General Management of the Strawberry as a Market Fruit."⁷⁴

At VMI in 1852, the Committee of the Board of Visitors on Instruction recommended adding a chair of agricultural chemistry, since Gilham was serving in the role of State Agricultural Chemist.⁷⁵ This new chair would replace the Chair of Industrial Chemistry that Gilham currently held. For unknown reasons, the Board of Visitors did not act upon the recommendation, but Gilham continued to teach and expand his agricultural chemistry course. In 1856, a large chemical laboratory was erected and fully equipped with apparatus.⁷⁶ By 1857, extensive practical work was performed by both Gilham and the cadets in the laboratory; samples of soil, fertilizers, lime, minerals and other materials were received from all over the state, analyzed and returned, "with full reports containing careful and expert advice."⁷⁷ Among the text books used by Gilham were Dana's *Mineralogy*, Adams' and Cray's *Geology*, Norton's *Elements of Scientific Agriculture*, and Johnston's Turner's *Chemistry*.⁷⁸ Gilham also ensured

⁷³ Carr, "The Southern Planter, 1841-1861."50.

⁷⁴ "The Southern Planter," July 1868, 297.

⁷⁵ Wise, "A Special Report to the Board of Visitors of the Virginia Military Institute on The History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture,"18.

⁷⁶ *Ibid.*,18.

⁷⁷ *Ibid.*,18.

⁷⁸ *Ibid.*,18.

that the VMI library contained many volumes dealing with agriculture, agricultural chemistry and similar subjects. Out of 76 volumes in the Department of Chemistry, Mineralogy, Geology and Agriculture Department, 31 dealt with zoology and husbandry, geology, or farming and agriculture.⁷⁹

The superintendent of VMI, Francis H. Smith, had many advocates for the expansion of the academic program at the school, especially through Philip St. George Cocke and William Richardson. With their wealth, political connections, and close friendship with Smith, they were untiring advocates of obtaining state funds for the expansion of the agricultural education program at VMI and the promotion of the school throughout the state. Smith was also extremely lucky to have as his chemistry professor, William Gilham. Gilham understood the need of Virginia farmers and planters and started programs at the school to help educate not only cadets in agriculture but the state's farmers. His soil analyses were also vital in cementing the idea of VMI as an agricultural education school. Over the later part of the 1850s, the demand for formal agricultural programs at Virginia's colleges would come to the forefront. Due to Gilham's actions, VMI was well positioned to compete for resources as one of these schools.

⁷⁹ *Catalogue of Library, Virginia Military Institute* (Lexington, Virginia: Smith & Fuller, 1855).

CHAPTER SIX A SCHOOL OF AGRICULTURE AT VMI

In 1848, agricultural and educational leaders in Massachusetts founded an agricultural school, the first of its type in the United States.¹ Many Northern states soon followed, which resulted in a rapid rise of agricultural schools and technical colleges. The state of Michigan, in its 1850 Constitution, called for an agricultural school; this became the current Michigan State, and was the first organized higher education school of agriculture in the United States. Pennsylvania incorporated the Farmers' High School (modern Pennsylvania State) in 1855, and Maryland and Massachusetts chartered schools of agriculture in 1856.² Virginia planters and politicians were aware of the growing popularity of agriculture and agricultural education in the North, mainly through agricultural societies and journals.³ The establishment of agricultural schools north of the Mason-Dixon line pushed the issue of agricultural education to the forefront in Virginia during the 1850s.

State and local agricultural organizations in Virginia began to request that the General Assembly establish an agricultural school. In 1851, the Virginia State Agricultural Society petitioned the state assembly to aid in "agricultural instruction and improvement."⁴

Accompanying the petition was a committee report prepared on the subject, with Edmund Ruffin

¹ Wise, "A Special Report to the Board of Visitors of the Virginia Military Institute on the History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture, Including a Sketch of the Physical Survey of Virginia by the School of Applied Science," 19.

² Ibid., 19-20.

³ Charles Turner, "Virginia Agricultural Reform 1815-1860," 88.

⁴ Brown, "Agriculture Science and Education in Virginia before 1860," 206.

as chairman of the committee. The report reminded the assembly of the aid given to other educational disciplines, including medicine and law, and described agriculture as a profession equal to those. Agriculture's "pitiable plight," the report stated, was due to "the lack of scientific agricultural knowledge."¹ The report further argued that training students in agricultural science would benefit the state materially, and recommended the creation of a state board of agriculture, the permanent organization of county agricultural societies, the appointment of agricultural chemists, establishment of experimental farms, and the creation of a professorship of agriculture at a state college. The assembly took no action on the petition. Many of the ideas contained in the report were expounded on by Ruffin two years later in "Premium Essay on Agricultural Education." This document would lay the groundwork for establishing agricultural education in Virginia and in the South. Written in 1853 for the Southern Central Agricultural Association, which was primarily composed of farmers and planters in Georgia and Alabama, the document presented all of Ruffin's arguments on the necessity of Southern agricultural education. In the first paragraph, Ruffin directly addressed the state of agricultural knowledge declaring, "Agriculture, as an employment of labor and the means of drawing subsistence from the earth, may be, and generally has been, conducted with less knowledge and skill than any other ordinary business or exercise of either physical or mental labor."² Even ignorant humans could farm, "by covering seeds in the soil and weeding the growing plants," producing "fruits...obtained for the subsistence of the cultivators."³ The popular opinion held by both the vast number of farmers and non-farmers alike was "agriculture needs but little knowledge, and no preliminary instruction."⁴

¹ Brown, "Agriculture Science and Education in Virginia before 1860," 206-207.

² Edmund Ruffin, *Premium Essay on Agricultural Education. Submitted to the Executive Committee of the Southern Central Agricultural Association*, Second Edi (Richmond, VA: J. W. Randolph, 1853), 5.

³ *Ibid.*, 5.

⁴ *Ibid.*, 5.

However, Ruffin thought this way of thinking about agriculture and farming was incorrect and short-sighted. In the next paragraph, he wrote of agriculture,

There is no employment of man, whether of science or art, which requires to secure its greatest rewards and benefits, so much and such varied knowledge, skill and judgement, as does agriculture; which is both an art and a science, and also a business requiring much administrative talent for conducting it with proper economy, and due adaptation of means to the ends sought.⁵

Continuing, Ruffin observed how different divisions of labor helped each other, although they might not be aware of it. Using navigation as an example, he wrote that the astronomer who studies and charts the stars and the engineer creating the steam engine have both contributed to make navigation “a highly advanced condition.”⁶ Navigation benefited from the work of astronomers and engineers who “scarcely know of the existence of other co-laborers, or of the purpose for which their own labors will ultimately serve.”⁷ However, in agriculture, there seemed to be little division of labor. The farmer did everything on the farm, directing all the “hundreds of various details” with no apparent “co-laborers.”⁸ This lack of the division of labor caused farmers to view farming as an art without much regard for a scientific aspect. A farmer knows how to plow, hoe, drain fields, reap and harvest crops, and keep their implements, machines and appliances in good working order due to prior generations instructing them. According to Ruffin, this “art,” while important, was the lowest form of agricultural knowledge. Like the navigator helped by the actions of the astronomer and engineer, farmers did not realize how much science had influenced their art. Science, according to Ruffin, directed the farmer with “why, when, how, and under what circumstances, each and every mechanical labor or

⁵ Ibid., 6.

⁶ Ibid., 6.

⁷ Ibid., 6.

⁸ Ibid., 7.

process shall be either performed, modified or wholly omitted.”⁹ Farmers suspicious and dismissive of “book farming” were “directed in their almost every labor and process by doctrines which were derived indirectly from scientific agriculturists.”¹⁰ In Ruffin’s opinion, each farmer did not need to be a scientific agriculturist, but they needed to be acquainted with the science of agriculture.

In addition to having familiarity with the contributions of science to agriculture, farmers and planters needed to have an administrative ability, or as Ruffin wrote, “a turn for business.”¹¹ The art and science of agriculture meant little if the farmer did not understand the business side of the field, including proprietor operations and how to govern both agents and laborers, manage equipment, and “guard against waste” in every department.¹² Ruffin believed that business competence in agriculture was more important than any other part of the field. “It is this all-important capacity for good general management,” Ruffin wrote, “which enables many cultivators to thrive though greatly deficient in the other requisites of knowledge and skill.”¹³

Unfairly, farmers were expected to understand the artistic, scientific, and business aspects of farming without any formal instruction. Ruffin noted that in every other pursuit requiring skill and knowledge, beginners received instruction from “some person supposed to be well-informed, and competent to instruct in the business.”¹⁴ Aside from a father or other family member, a young farmer did not have the means to receive any formal instruction. They would then repeat mistakes and lessons learned during their careers. It did not make any sense that agriculture, vital to the well-being of the country, was not treated as other businesses that, in Ruffin’s opinion,

⁹ Ibid., 7.

¹⁰ Ibid., 8.

¹¹ Ibid., 8.

¹² Ibid., 9.

¹³ Ibid., 9.

¹⁴ Ibid., 10.

were less important. Without successful farmers and planters, other industries would be non-existent. Farming was treated almost as an afterthought by large segments of the population. If other professions ran their businesses without “any knowledge or theory, in their fields, every voice would pronounce that any business pursued must inevitably end in bankruptcy.”¹⁵ Ruffin summed up his argument for agricultural education, writing,

When so much study and research are required for attainments in the science, so much skill and judgement for the art, and so much ability and varied talent for the business in general, it scarcely need proof that no other pursuit more needs instruction for its young votaries than does agriculture.¹⁶

Even if colleges taught agriculture, Ruffin believed the current educational structure was inadequate for instruction in the discipline. A planter’s son could attend a college or university, but it would not familiarize him with the land he would eventually farm. Receiving instruction in dead languages and sciences that “afford very little knowledge” of agriculture, the graduate would only be prepared for a career in law or medicine.¹⁷ If the graduate selected agriculture as a career, he would be expected to “overcome all the disadvantages of his own ignorance...to become a good farmer, notwithstanding all the enormous obstacles in his way.”¹⁸ Poorer farmers, a “far more numerous class of men of small possessions, and very limited education,” were worse off in obtaining an agricultural education. A farmer, “confined to his daily toil,” had neither the means nor the time to obtain knowledge at college, and could only expect agricultural information from their family or neighbors.¹⁹

¹⁵ Ibid., 10.

¹⁶ Ibid., 9.

¹⁷ Ibid., 11. Ruffin was not against all instruction in literature and science at colleges. “It would be not less erroneous and absurd to infer that all education in literary and scientific institutions is unnecessary, because without such aid, a Franklin could not reach a station of great celebrity in science, and in general and useful knowledge.”

¹⁸ Ibid., 11.

¹⁹ Ibid., 11.

Firmly establishing the need for agricultural education, Ruffin next turned to the issue of who should pay for this education: each individual state. According to him, in the Southern States, agriculture was the number one business and paid, “all the taxes” in the state.²⁰ Aside from ensuring that the state had enough food to feed its population, farming had both direct and indirect economic benefits; plow makers and blacksmiths benefitted directly, while industries gained indirect benefits. State governments already gave money to both private and public “seminaries for the higher branches of learning,” to include education for schools of law and medicine.²¹ If law and medicine instruction was funded by the state, Ruffin wondered, where was the funding for agricultural education? State governments “thus pay liberally, and in some cases profusely and improperly, for all other kinds of instruction, of high or of low order, not a dollar has been paid by any of the States for instruction in agriculture.”²² State investment in agricultural education would improve the land of the state (ruined by tobacco in Virginia, Maryland, and North Carolina), the profits and wealth of planters and farmers (taxes to the state), and “consequently of the whole community.”²³

Thus, laying out the reasons why agricultural education was vital, who should fund it and the benefits, Ruffin presented his ideas for how an agricultural institution should be structured and run. Writing for the essay’s Georgia and Alabama audience, he named the school the Agricultural Institute of Georgia, but he incorporated some features of VMI in his plan. The state would be responsible for establishing the agricultural college, as well as providing land, stock, infrastructure and buildings, and salaries for faculty. Student tuition would be enough to meet the annual expenses of the school, but the state would pay for a limited number of poor youths,

²⁰ Ibid., 12.

²¹ Ibid., 13.

²² Ibid., 13.

²³ Ibid., 13.

“eminent for their moral and mental qualifications.”²⁴ Three to four hundred acres of land, with suitable soil and farm buildings, would be needed for the institute. Starting with one hundred students, the total number would grow to three hundred. Discipline at the school would be, “to the degree of military precision,” with a superintendent as the head of the school.²⁵ Physical training would also be conducted to reinforce discipline and health.

The three-year curriculum of the institute would “embrace the higher branches of arithmetic, geometry, mensuration, land-surveying and leveling.”²⁶ Other general courses would include natural philosophy, mechanics, hydrostatics and hydraulics, mineralogy, geology, and the “portions of chemistry applicable to agriculture.”²⁷ Indeed, given Ruffin’s background in agricultural chemistry and his experiments with both marl and lime, he wrote that agricultural chemistry would occupy an important part of the whole curriculum and the instructor “would be the most valuable member of the faculty.”²⁸ Agricultural chemistry would be emphasized in the first two years of the program to prepare students for advanced scientific agriculture topics in the third, and last, year.

Ruffin also advocated farm labor while students were receiving instruction in their various subjects. This “hands-on” instruction would afford students the best means of learning the “art” of agriculture. It would also allow students and school visitors the chance to see agricultural machines in operation. Finally, experiments could be undertaken, “to throw light upon, or to decide, every important controverted opinion” in various agricultural questions.²⁹

²⁴ Ibid., 15.

²⁵ Ibid., 18.

²⁶ Ibid., 16.

²⁷ Ibid., 17.

²⁸ Ibid., 17.

²⁹ Ibid., 17.

Students would be required to go to the farm for half a day, two times a week. Working on the farm would not be viewed as a punishment or less important than classroom time. Instead, “it should be made a point of honor, as well as of duty, for the pupils to disregard fatigue and any required privation – and of earnest emulation to acquire skill and ability in the performance of every labor.”³⁰

With courses covering agricultural science and a working farm to teach students the “art” of farming, the last area for the institute to provide instruction was in agricultural business and farm management. The school should provide instruction, “of a good system of farming and general management, conducted with judgment, economy and profit.”³¹ Instructors in this area needed planters and farmers from throughout the state, judiciously selected, profitable cultivators and examples of good managers. These “distinguished farmers” would serve as adjunct professors of practical agriculture and farm economy. Students would be encouraged to ask these adjuncts to serve as farming mentors at school and after graduation.

Ruffin finished his essay by informing readers that his proposed institute would offer the best course of education for not only future farmers but also “all persons of varied and active life, and for pursuits in any fixed business.”³² In a few years of operation, the graduates of the institution would go out into the state and surrounding areas to pass on the information they had received, making themselves and others better planters and farmers.

While the essay was written for an agricultural society in Georgia and Alabama, the intended audience was, in fact, the entire South. The essay incorporated Ruffin’s own lessons in managing a large farms and growing crops. His two years at William and Mary did little to

³⁰ Ibid., 18.

³¹ Ibid., 21.

³² Ibid., 22.

prepare him for running his family's plantation after his father's death; Ruffin had to teach himself the art, science, and business of agriculture. He wanted to make sure that others would not have to repeat his travails. Because Ruffin was highly regarded for his agricultural experiments and expertise, his essay spoke to both allies of the agricultural education movement, and to politicians who were hesitant to support such legislation. A colleague of Ruffin's, James Hammond, wrote to him that there were "Medical Colleges – Religious Seminaries – Law Schools etc. etc. in abundance – but no school to teach especially Agriculture."³³ Further, Hammond continued, "I am only provoked to think how many years I was flogged & flogged through Latin & Greek & how carefully the keys of all this knowledge [agriculture] were withheld from me & are still withheld from those who ought to be as familiar with them as A.B.C."³⁴ For Ruffin, the argument was simple; agricultural education would lead to a strong agricultural base which would be vital for the South to survive in a growing, increasingly industrial United States. In 1852, Ruffin wrote that advances in farming would bring an "increase in political power...especially important to the well-being of the Southern States, and the preservation of their yet remaining rights."³⁵

Ruffin also incorporated aspects of VMI into his essay. He was friends with both Smith and Gilham and familiar with the academics and discipline of the school due to his son, Charles, attending.³⁶ Agricultural chemistry was successfully being taught at VMI when Ruffin wrote his essay. William Gilham, the VMI agricultural chemistry professor, was one of the most important instructors at the institution. His recommendation for the head of the school to be a

³³ Ruffin Papers (UNC), Hammond correspondence, James Hammond to Edward Ruffin, 1 February 1846.

³⁴ Ibid.

³⁵ Mathew, "Agricultural Adaptation and Race Control in the American South: The Failure of the Ruffin Reforms," 129.

³⁶ Charles Ruffin would not graduate from VMI. Despite returning to his father's plantation, he eventually pursued civil engineering and railroad construction. Allmendinger, *Ruffin*, 80.

superintendent instead of a president or provost and a “military precision” discipline also mirrored VMI’s structure. Last, VMI’s successful experiment with “state” and “pay” cadets was very similar to Ruffin’s plan for the state to sponsor poorer students at the institute.

Ruffin and Smith exchanged letters during the late 1840s and early 1850s, mainly concerning Ruffin’s son, Charles. However, agricultural topics were also discussed. In a letter to Smith on December 14, 1850, Ruffin wrote that he was requesting a copy of an address he gave to the Agricultural Society of the Eastern Shore of Maryland be sent to Smith. “The recommendations of the scientific and practical agricultural instruction on education,” he wrote, “very probably suggest to your mind some suitable connection of these with your Military Institution.”³⁷ Another letter to Smith in May of 1851, included this postscript, “Please say to Major Gilham that I will procure and send two specimens of soils which he wants - & that should he find it convenient to visit me, or my son Edward, in Prince George, either of us will take pleasure in showing to him the marl localities he wishes to see.”³⁸

Not everyone in Virginia shared a high opinion of the new military institute and the new courses being taught there. Since its founding in 1839, VMI had been viewed by other, older schools in the state as a different sort of institution on par neither academically nor socially. Given that VMI focused on practical subjects over the traditional classics and had a state cadet system for poorer pupils, students and graduates of Washington College and the University of Virginia were especially critical of the caliber of education and students who attended VMI. In the early 1840s, students at Washington College drilled with the cadets at the newly established VMI. Showing their disdain of the cadets and the newly-formed school, the Washington students

³⁷ “Letter from Edmund Ruffin to F. H. Smith, December 14, 1850.”

³⁸ “Letter from Edmund Ruffin to F. H. Smith, May 6, 1851.”

called the cadets “rats.”³⁹ The cadets responded by calling the Washington students “minks,” “since they appeared to the cadets as mean and sly.”⁴⁰

Smith was not afraid to tout his views of VMI’s successes in various reports to the Board of Visitors, the legislature and governors, essays, and in annual addresses to the Corps of Cadets before fall academic duties. Smith used these Corps addresses to introduce new cadets to the VMI system and remind older cadets of the history of the Institute, the reasons for its success (“it’s [sic] peculiar discipline – and it’s [sic] still more peculiar course of instruction”)⁴¹, and its actual achievements. Smith would also include his own comments on a wide range of subjects near and dear to his heart, including the failure of the current “system of instruction” employed by most colleges in the United States.

In his 1856 address to the Corps, Smith wrote about the current state of education,

Although living in a practical age, and emphatically a practical people, the agriculturalist, the merchant, the mechanic and the manufacturer, who wanted for their sons education a knowledge of those sciences by which labor might be profitably directed must give them from five to ten years of study in Greek and Latin if they coveted for them an academic degree.⁴²

He then turned to the state of Virginia. Smith further wrote that VMI “placed the terms of admission so low as to admit talent from any and every quarter; and yet high enough to meet the usual demand of the colleges, saving in Greek and Latin.” Smith then listed the successes of VMI. No longer did Virginia need to look abroad for civil engineers and educators. Smith wrote that, “The successful introduction of the high scientific standard ... (of) the Virginia Military Institute, paved the way for a material modification of the course of studies in the colleges of the

³⁹ Shaffner, *The Father of the Virginia Military Institute A Biography of Colonel J. T. L. Preston*, 81. The term “rat” is affectionately used to describe a freshman at VMI.

⁴⁰ *Ibid.*, 81.

⁴¹ Smith, *Introductory Address to the Corps of Cadets of the Virginia Military Institute on the Resumption of Academic Duties September 2nd, 1856*, 7.

⁴² *Ibid.*, 11

state.”⁴³ In fewer than twenty years, VMI had produced more proficient scholars of mathematics, engineering, and science. Smith continued, “Ask the educated men of the State, in all of the professions, and their testimony will be uniform, and almost universal, to the inefficiency of the scientific instruction in our college prior to 1839.”⁴⁴ VMI was also responsible for sending many new teachers into the state’s schools, which resulted in students who were better prepared academically and better behaved when they entered college. In Smith’s summary, VMI had revolutionized scientific and mathematical instruction, offered a practical education of interest to more Virginian parents, and produced teachers that better prepared Virginia’s youth for college.

Smith’s rosy picture of VMI and his claim that the school single-handedly revolutionized higher education in the state of Virginia did not impress everyone and led to very public disagreements in newspapers and journals. In March of 1857, an article appeared in the magazine *Southern Literary Messenger* entitled “Progress of Education in Virginia.” The author, who remained anonymous, wrote the article in response to Smith’s 1856 address to the Corps of Cadets on the resumption of academic duties. Calling Smith “widely mistaken” in the causes of educational progress in the state, the author proceeded to critique Smith and VMI for its supposed academic contributions to the entire state. The author wrote that Smith “claims for his semi-college, semi-academy, nearly all the honor and glory of all the progress that has been made by the University [of Virginia] and all the colleges and schools in the State, for the last seventeen years at least.”⁴⁵ Continuing, the author wrote,

Can we make no higher progress, than is to be found in banishing Greek classics and Greek literature from our colleges, and cloistering them in the theological schools of the country; and then cutting the Latin down to a mere Sophomore course? Such seems to be

⁴³ Ibid., 14

⁴⁴ Ibid.,17

⁴⁵ Unknown, “Progress of Education in Virginia,” *Southern Literary Messenger* XXIV, no. 11 (1857): 161-162.

the kind of progress such the kind of *college reform* advocated by the Superintendent of the Institute.⁴⁶

VMI was an excellent scientific and military academy and made engineers and business men, “but not scholars.”⁴⁷

Continuing, the writer stated that advances had been made in education within the last 30 years, but progress had been more rapid in the last 15. Colleges were extending their classical studies courses, not reducing them, “because of the patronizing influence of another institution – a new institution – which set out upon the plan of ignoring classical studies altogether.”⁴⁸

Additionally, graduates of these classical colleges had become classical teachers, establishing schools that were the chief sources of the “best material” at the University [of Virginia].⁴⁹

Finishing his critique, he wrote the following: “As a valuable appendage, but outside of the system stands the Military Institute – the best school of the kind in the South – not a college, but an institution *sui generis* – the institution to which we may safely look in future for our engineers and State military officers.”⁵⁰

It was Preston who responded to the anonymous writer and defended both Smith and VMI.⁵¹ In the April 1857 *Southern Literary Messenger*, he wrote, “We are sure the author of the Lecture would not desire a single statement he has made, to be defended, except upon the broad basis of reason and truth.”⁵² Preston championed VMI by noting the successes in the number of teachers graduated, the discipline and demerit system which had been adapted by other Virginia colleges, and the Institute’s scientific and mathematical instruction. “The Virginia Military

⁴⁶ Ibid., 163.

⁴⁷ Ibid., 163.

⁴⁸ Ibid., 164.

⁴⁹ Ibid., 165.

⁵⁰ Ibid., 169.

⁵¹ Shaffner, *The Father of the Virginia Military Institute A Biography of Colonel J. T. L. Preston*, 120.

⁵² Unknown, “Progress of Education in Virginia,” 241.

Institute,” Preston wrote, “while it supplies all that the colleges give but Greek, has substituted for Greek, French, Drawing, Engineering, Military Tactics, and a more extended course of scientific studies, with special reference to the practical demands of our state.”⁵³ VMI did not seek rivalry with other Virginia colleges, but instead they were guided by the needs of and usefulness to Virginia.

The anonymous writer, in a July continuation of his first letter, further attacked VMI and Smith in another article, and Preston once more responded, this time in the August 1857 edition of the magazine. Re-stating many of the same arguments he had made before about VMI and its unique discipline and curriculum, Preston also mentioned the agricultural program. Quoting Edmund Ruffin’s praise for William Gilham in an 1852 *Southern Planter* article, Preston also wrote that Gilham had been instrumental in pointing out frauds selling super-phosphate fertilizers, saving farmers hard-earned money. Preston used a second quote from Ruffin stating that VMI, “was now the best agricultural school in the South.”⁵⁴ Preston closed the section on agriculture stating, “And this is one of its legitimate fields of labour, as a scientific institution. But in cultivating this field of physical enterprise, it does not reject or neglect ‘lighter accomplishments.’ It cultivates ‘Latin’ as well as ‘French.’”⁵⁵ The anonymous writer did not respond to Preston’s last letter.

Despite Ruffin’s essay on agricultural education and the success of Gilham’s agricultural chemistry and soil program, getting support from the state for agricultural education was still a struggle in the first half of the 1850s. In 1852, the state and local agricultural societies again petitioned the state legislature for a scaled back version of their requests from a year before.⁵⁶

⁵³ Ibid., 247.

⁵⁴ Unknown, “Progress of Education in Virginia, August 1857,” *Southern Literary Messenger* August (1857): 61.

⁵⁵ Ibid., 61.

⁵⁶ Ibid., 207.

The petition requested the ability to collect statistical facts on the agricultural condition of the state and further develop the connection of science to agriculture. The assembly shelved this petition as well. The Union Agricultural Society petitioned the assembly in 1856 for funds to create an agricultural school next to its model farm at Petersburg, Virginia.⁵⁷ No action was taken on this petition by the legislature. Despite the failure of the state legislature to move on any of these bills, the fact that both state and local agriculture societies continued to petition for agricultural education indicates that the idea was a popular one for the major planters of the state.

Later in 1856, in a report in the *Journal of the Virginia State Agricultural Society*, the executive society of the group proposed to establish an endowment for an agricultural professorship at one of the state institutions. Cocke, then president of the society, used Ruffin's argument about the lack of education for farmers to justify the endowment. Writing to the society, he stated, "Whilst the farmer, he who is to follow agriculture as his vocation, is either left entirely without education or with such defective partial learning as to be acquired in school which ignore the whole subject of the theory and practice of agriculture."⁵⁸ Overtures about the endowment had already been made to the University of Virginia and VMI, and both had expressed interest. The schools "assured the committee that they would use the authority confided to them to have the professorship established in the manner best calculated to meet the wishes and objects of the Society and insure that farmers of Virginia a course of agricultural instruction upon the scale of the most rigid economy."⁵⁹

⁵⁷ Ibid., 207.

⁵⁸ Philip St. George Cocke, "Report of the President of the Virginia State Agricultural Society Made to the Farmers Assembly, 1856," 1856.

⁵⁹ Brown, "Agriculture Science and Education in Virginia Before 1860," 208.

Due to larger facilities and “advantages,” the Society recommended that the professorship go to the University of Virginia.⁶⁰ Society President Cocke requested that the University of Virginia Rector and Board of Visitors lobby the state legislature during the 1856 session for funds to create an agricultural professorship that would be endowed by the society. The University Board of Visitors received permission from the legislature to increase the number of University schools, permitting a new agriculture professorship if an endowment was established.

In late October of 1856, Philip St. George Cocke proposed to the Farmer’s Assembly of the Virginia State Agricultural Society that he would bestow \$20,000 on the University of Virginia towards the endowment of the agriculture professorship.⁶¹ The \$20,000 would be “vested in the bonds of the University of Virginia to enable that [Virginia State Agricultural] society [sic] with consent of the Board of Visitors of that institution to establish as professorship of agriculture – using only the annual interest on the said bond.”⁶² However, the donation had stipulations, among them that Cocke would be able to nominate the professor (with approval of the University’s Board of Visitors) and upon his death the Farmer’s Assembly would nominate any future faculty. Another term in the endowment allowed Cocke, and the Farmer’s Assembly after his death, to appoint two scholars which would attend the University “free from the charge for tuition fees.”⁶³ The University of Virginia’s Board of Visitors declared that it was unable to accept Cocke’s gift because the restriction would tie the hands of the administration.⁶⁴ The General Assembly likewise refused the endowment. Cocke and the Virginia State Agricultural Society dropped the plan in the spring of 1857. Though disappointed at the University of

⁶⁰ Ibid., 207.

⁶¹ Ibid., 210.

⁶² VMI BOV, “Virginia Military Institute Board of Visitors Minutes,” 1858, 212.

⁶³ Ibid., 213.

⁶⁴ Turner, “Virginia Agricultural Reform, 1815-1860,” 85.

Virginia's Board of Visitors decision, Cocke did not give up. He wrote in 1857, "We must have our agricultural schools or institutes for those who cannot afford the time and money required for a university education, and our sons must fill these schools to overflowing."⁶⁵

The rejection of Cocke's gift was good news for VMI. Richardson kept Smith abreast of the University of Virginia Board of Visitors endowment debate, first writing to Smith about it in January 1857.⁶⁶ Once it was refused, Richardson used his position as Adjutant General and his friendship with Cocke to convince Cocke that the endowment should go to VMI.⁶⁷ At the time, Cocke was the president of the Board of Visitors and was intimately familiar with the work of Major Gilham, his agricultural chemistry course, geological and agricultural surveys, and his evaluation of soil samples from around the state. Cocke wrote to Smith in August 1857 that:

Gilham's recent geological and agricultural survey of this county [Fluvanna] will at once place his school at the head of agricultural science in the State and himself high in the confidence and esteem of the farming interest. Your school of engineering and architecture is not only the best but the only one at the South. Next will come a School of Mines and Metallurgy, which is destined to be a luminous point from which will emanate the knowledge and power to develop the untold millions of wealth now lying dormant in the bowels of the earth throughout the Southern States.⁶⁸

Cocke turned his attention, and sizable endowment, to establishing an agriculture professorship and more at the military college.

By 1858, Francis Smith had been Superintendent of VMI for almost twenty years. During that time, he had not taken one vacation from the Institute. In his later biography, Smith wrote, "The strain of official duty was severely felt by me during the incessant calls made on me at the

⁶⁵ *Ibid.*, 210-211.

⁶⁶ Couper, *One Hundred Years at VMI, 4 Vols.* Vol I., 349.

⁶⁷ *Ibid.*, 349.

⁶⁸ Philip St. George Cocke, "Letter from Philip St. George Cocke to Francis H. Smith, August 14, 1857," 1857.

time.”⁶⁹ Sensing it was time for him to take a break, the VMI Board of Visitors granted Smith a six-month leave of absence from June to December 1858. The board wrote that Smith was,

Authorized and requested to visit various seminaries of learning and other Institutions of Education in Europe, with a view to ascertain the operations and successes of the various systems of education which exist there, and to enquire into the interests which are covered in the operations of the Military Institute of the state of Virginia.⁷⁰

After returning from Europe, Smith was to create a report for the Board of Visitors. Smith also had the full backing of Virginia’s governor, Henry Wise, who provided Smith with a letter of introduction.

Cocke provided financing for the trip, and VMI alumni and a future cadet accompanied Smith. His companions were Francis Smith (VMI 1856 and Smith’s nephew), John Cocke (VMI 1856 and Cocke’s son), Robert Taylor (VMI 1857), Robert Terrill (VMI 1858) and Albert Grandy (VMI 1865).⁷¹ Cocke had ulterior motives to both pay for the trip and to send his son along with Smith. Cocke wrote to Smith in November 1857, “I have to confess to you – in strict confidence – that John has gotten himself into a most unfortunate love affair with his cousin which I felt constrained to oppose.”⁷² The romance had distracted John Cocke from his graduate studies but what concerned the elder Cocke was the “obvious nature and physical deprency [sic] of offspring in so many families of Virginia when such inter-marriages have taken place.”⁷³ Sending John on the trip under Smith’s guidance and company would be good for both Cocke and his son. The group left in June 1858 and would travel to Ireland, Scotland, England, France, Holland, several German states, Austria, Switzerland, and Italy over the next six months.⁷⁴ Smith

⁶⁹ Smith, *The Virginia Military Institute Its Building and Rebuilding*, 149.

⁷⁰ BOV, “1858 Virginia Military Institute Board of Visitors Minutes,” Virginia Military Institute, Lexington, Virginia.

⁷¹ Dooley, “Francis H. Smith’s European Trip in 1858,” 145.

⁷² Philip St. George Cocke, “Letter from Philip St. George Cocke to Francis H. Smith, November 1857,” 1857.

⁷³ *Ibid.*

⁷⁴ Edwin L. Dooley, Jr., “Francis H. Smith’s European Trip in 1858,” *Proceedings Rockbridge Historical Society, Lexington, Virginia* 14 (2017): 142.

wrote about the trip almost every day to his wife, Sarah, providing an interesting look at Europe in the late 1850s, as well as European education. Upon his return to the United States, his secretary copied all the letters into three letter books for safekeeping. Two of the books survive and have been donated to the VMI Archives. Smith's letter book, combined with his report to the governor and Board of Visitors upon his return, present a very detailed account of the trip, the schools visited, and knowledge gained.

In England, Smith visited Oxford and Cambridge University, and the military school at Addiscombe; in France the *École Polytechnique* and military school at St. Cyr; in Prussia, the military stables at Berlin and in Württemberg and the agricultural school at Hohenheim; and in Sardinia, the military school at Turin. While touring Oxford University, Smith noted, "Agriculture, too, was daily becoming more closely connected with science."⁷⁵ At the English military college, Addiscombe, Smith noticed that much attention was being devoted to the new art of photography. Photography was replacing drawing by engineers in the planning of forts and buildings. Touring the *École Polytechnique*, Smith marveled at the history and influence the school had created since its founding in 1794. Smith wrote, "No intelligent traveler can visit Europe, without seeing the impress of the polytechnic school upon the progress of education, in all the forms of its development."⁷⁶ Smith pointed out that the *École*, while founded as both a military and a civil school, had shifted in the last several years to more of a civil school. The best graduates were "selecting the civil in preference to the military services, because they open wider fields for distinction and advancement."⁷⁷

⁷⁵ *Ibid.*, 59.

⁷⁶ Francis H Smith, "Scientific Education in Europe," 1859, 35.

⁷⁷ *Ibid.*, 36.

Smith received a special tour of the “great” agricultural school at Hohenheim in Wuremburg, six miles south of Stuttgart.⁷⁸ Hohenheim (High-Home) was originally a palace that had been converted into the agricultural school. Smith wrote that the numerous court rooms, servants’ rooms, halls, and stables were very well suited to an agricultural school. The massive halls were used for exhibition and instrument rooms, the stables to keep cattle and sheep, while the numerous second floor rooms provided dormitories for 130 students. Smith called Hohenheim, “a great scientific and practical school of agriculture.”⁷⁹

The curriculum of the school was based in scientific agriculture. These courses included chemistry, geology, mineralogy, mechanics, physiology (animal as well as vegetable), and subjects devoted to the diseases of animals and stock. Adjacent to the school was a 1,000-acre farm where experiments could be conducted and observed. If an experiment yielded positive effects, the results were distributed to farmers throughout Germany. The Hohenheim farm was not a manual labor school; if students wanted to participate in labor, they were free to do so, but were not required to spend time working in the fields.

Hohenheim was regarded throughout Germany “as the authority on agricultural matters, which determines all questions of policy in this branch of industry.”⁸⁰ Because of this, professors were slow to express an opinion on a certain topic until conclusive evidence pointed to an answer. All new agriculture tools and implements were also sent to Hohenheim for testing. Before using a tool in the field, a professor would explain to the students the mechanical principle of the tool, as well as the intended effect it was to have. As an example, Smith wrote

⁷⁸ Ibid., 43.

⁷⁹ Ibid., 43.

⁸⁰ Ibid., 44.

that oxen at the school pulled their yokes using their horns instead of their shoulders. This was due to testing performed at Hohenheim.

The school also contained model and seed display rooms. The model room contained “every variety of agricultural implements, among which I noticed with pride the reaper of our own countryman, McCormick.”⁸¹ The implements in the room, Smith noted, were carefully constructed models and not for use in the fields. The seed room contained every variety of seeds and roots in rows. Lecturers used these specimens with their “peculiar properties” to instruct students. Smith, picking up a common potato, was shocked to find that the potato was not real, but a carefully constructed wooden model. In another part of the room, every variety of wool specimen was arranged by classification. Over twenty-five mechanics were employed in making the implements and models, some of which were sold to farmers and other schools.

Next, Smith visited the hall of forestry. The hall contained every variety of wood in Prussia, classified by region and characteristics. These characteristics included wood which could be bored without splitting, which could be turned, and which could be reduced to thin strips. Smith was extremely impressed with the hall and lamented that American education had nothing similar. Smith wrote, “So little attention is paid to their study...and yet is there any part of agriculture so well deserving of attention as the culture, preservation and properties of our forest timber.”⁸² The last part of the tour was the cattle stables. Smith estimated that between 70 to 80 cows were housed there. Feeding experiments were conducted on the cows and calves were raised and sold for labor. Smith noted that the school was self-sustaining, and the average

⁸¹ Ibid., 44. It is interesting to speculate if Smith was talking about McCormick as an American or as a Virginian. McCormick’s farm was located in Rockbridge County, the same county in which Lexington and VMI were located.

⁸² Ibid., 44.

Hohenheim student paid about \$300 a year in tuition. This low tuition cost was due to profits from the sale of livestock, produce, and farm models.

Smith was impressed with many aspects of European education. In many ways, the various educational systems he saw in England, France, and in the German states reinforced his existing beliefs that higher education should be comprised of both the liberal arts and practical subjects, producing a well-rounded graduate. However, the trip demonstrated to Smith that he needed to go further than what he had established at VMI; he needed to establish special schools of application. Upon Smith's return from the trip in December 1858, he set to work writing a report of the trip for the governor, General Assembly, and the Board of Visitors. The *Special Report of the Superintendent of the Virginia Military Institute on Scientific Education in Europe* was published in February 1859 and was both a summary of his trip and a recommendation for incorporating European agriculture, engineering, and fine arts into the curriculum of VMI. Smith wrote that his time in Europe showed:

That the education demanded by the agriculturist, the merchant, the manufacturer, the engineer, and, in general, by those whose position, whether as large landed proprietors or monied men, exercises a commanding influence in the destinies of the country, is not met by the "worn out routine of the old systems" on the one hand, nor by a restricted technical course on the other, but must be at least as liberal, although of a different kind, as that provided for the so-called learned professions; and finally, that art in pressing its claims to public attention, as an essential element in liberal education; not only from its intimate connection with trade and commerce, but from the important office it discharges in developing in their true harmony the faculties of the human mind.⁸³

Expounding on this idea, Smith held that establishing special application schools such as Hohenheim or the French engineering schools alone would neither benefit students nor fulfill the needs of the United States or the South. Students entering these programs first had to receive a preparatory course of liberal general education. These preparatory courses would include

⁸³ Ibid., 68.

mathematics, languages (including English, Latin, and French), chemistry, physics, drawing, and geography. After these preparatory courses were mastered, a student could then move into a specialty such as engineering or agriculture. Combining predatory courses with a special application school would make VMI into a great school of applied science not just for the state but for the whole country. Writing in his report to the governor, he stated, “The line of duty seems plainly marked out before it; the field is open and unoccupied; and the command comes with significance at this time – GO FORWARD.”⁸⁴

To accomplish this at VMI, Smith made a series of recommendations to change the curriculum and add facilities. The curriculum changes were numerous. Starting with scientific instruction, Smith wrote that the standard should be increased. Students were entering VMI with a better background in science and demanding higher standards. Along with science, the course of experimental philosophy should be extended, and the course in engineering and mechanics adapted to include machines. Other recommendations included adding courses in Spanish and Italian, political economy, and modern history. More attention also needed to be paid to English instruction. Preparing an educated man, as a speaker and writer, should neither be forgotten nor neglected. “The engineer,” Smith wrote, “would be but poorly fitted for his work, who could not prepare an intelligible report.”⁸⁵

New facilities would also be required at VMI. Smith recommended that a model room be provided to display implements, machines, models, and works of art. Additionally, a museum should be established which would contain items needed for instruction, including specimens of forest timber, soil, seeds, wool, cotton, tobacco, and other products. A large hall would be needed for public lectures, given by VMI professors on a set schedule, covering all branches of

⁸⁴ Ibid., 70.

⁸⁵ Ibid., 71.

science but especially related to agriculture. To teach these additional courses, three instructors would be needed, and state funds authorized to pay for the additional buildings. In closing, Smith reiterated that the schools he was proposing at VMI would be unlike any other school in the state or the country. He wrote,

I cannot doubt the ultimate success of such a scheme. It may be delayed for want of means; but the onward and upward spirit which has placed it in its present position, will still press it forward to higher and higher fields of usefulness, until it has reached the summit of the proud destiny that awaits it. Let us do our part now, and the generations following will reap where we have sowed.⁸⁶

While Smith made curriculum recommendations in his report, additional recommendations on the formation of an agricultural school were made in an addendum to Smith's report, authored by William Gilham. Setting the tone of his report in the opening paragraphs, Gilham wrote, "Agriculture is the leading occupation of the people of Virginia, and of the south; that one upon which depend all other pursuits, and which affects the prosperity of the state itself."⁸⁷ Reminding readers that a large majority of the cadets were the sons of farmers and would probably return to farming, he stated that "it appears reasonable that provision should be made for agricultural instruction."⁸⁸ He added that the prevailing sentiment in Virginia and other southern states was in favor of agricultural colleges and schools. Those against agricultural education, calling it "book farming," were wrong not to consider that a young farmer "might derive something of the same sort of benefit from a professional education suited to his wants, as the lawyer, the divine or the medical man does from his."⁸⁹ Gilham also wrote that the Southern agricultural system had to be modified due to the "institution of domestic slavery."⁹⁰ Since slaves

⁸⁶ Ibid., 72.

⁸⁷ Ibid., 73.

⁸⁸ Ibid., 73.

⁸⁹ Ibid., 73.

⁹⁰ Ibid., 76.

did nearly all of the farm labor, Southern farmers had responsibilities that free state farmers did not have: ensuring slaves were productive during all seasons, as well as the “moral responsibilities” of taking care of slaves for their entire lives.⁹¹

In proposing the curricula, Gilham stressed that students needed to be familiar with the principles of science. He believed that this would enable future farmers to properly observe scientific phenomena and their various effects in nature. The goal of agricultural education was “to give the student such a course of theoretical and practical instruction, that when he enters upon the practice of his profession, his education may be of great assistance to him, enabling him to conduct his farm operations with greater skill.”⁹² The following subjects were listed by Gilham as necessary for agricultural education: mathematics, including surveying; natural philosophy and meteorology; chemistry; mineralogy and geology; natural history (botany and zoology); engineering and architecture; right-lines and topographical drawing; medical and veterinary practice; science and practice of agriculture, including farm operations and the economy and management of slave labor.

Along with a course in the practice of agriculture, Gilham wrote that a farm would have to be purchased. This farm should contain the necessary buildings, implements, machinery, and crops, as well as house horses, cattle, and sheep. Imitating the Hohenheim school, Gilham wanted a small part of the farm to be used for experimental purposes before recommending farming changes to the public. Other parts of the farm would be put aside for vegetables and fruit in attrition to field crops. He also recommended that a museum be attached to VMI. The museum would contain models of approved agricultural implements and machines, and agricultural products including grains and grasses, tobacco, wool, wood, and models of fruit and vegetables.

⁹¹ Ibid., 76.

⁹² Ibid., 79.

Gilham wrote that his suggestions followed curricula from the Royal Agricultural College of England and the Hohenheim school in Prussia. To help teach these new agriculture classes, at least one additional professor would be needed.

In addition to the governor, General Assembly, and the Board of Visitors, Smith sent thousands of copies of his report to politicians, college presidents and faculties, Army officers and alumni of West Point, and alumni of VMI. A separate special report was written for the Board of Visitors in June 1859, which presented a detailed plan for the reorganization of the Institute as a general and scientific and military school containing three separate, special schools of application: a School of Agriculture; a School of Engineering; and a School of Fine Arts.⁹³ The overall course of study was expanded to five years. All cadets would take the same foundation courses for the first three years. At the end of the third year, cadets would decide whether to enter the School of Agriculture, the School of Engineering, or remain in the School of Fine Arts. The School of Agriculture would include a department of chemistry, a department of scientific agriculture, and a department of human physiology, anatomy, and veterinary medicine. Agriculture cadets in their last two years would take courses in botany, veterinary science, agricultural chemistry, dietetics, toxicology, and zoology, which were advanced classes for the late antebellum period.⁹⁴ It is unknown how much Smith and Gilham were influenced in their agricultural school plans by existing agricultural schools in the North. Through agricultural journals, societies, and people such as Ruffin and Cocke, both Smith and Gilham would have been aware of programs, curricula, and courses offered by northern institutions. Perhaps owing

⁹³ Wise, "A Special Report to the Board of Visitors of the Virginia Military Institute on The History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture," 21.

⁹⁴ Virginia Military Institute, "Register of the Officers and Cadets of the Virginia Military Institute 1860." October 26, 2015, http://www.vmi.edu/Archives/Records/Board_of_Visitors/Board_of_Visitors_Records/.

to sectionalism or the feeling that northern agriculture was too different from southern agriculture, neither Smith nor Gilham made any reference to northern agricultural school curricula in their plans. Interestingly, Cocke attended a national agricultural meeting in 1859 where an early version of the Morrill Land Grant Act was presented. However, it is unknown if the Act had any bearing on the creation of the agriculture program at VMI.⁹⁵

The Board of Visitors adopted, without changes, the recommendations of the entire report and a School of Agriculture was established with two professors. To augment the new agriculture department, a great hall was authorized which would contain an Agriculture Museum, a Forestry Museum, and a Museum of Agricultural Implements. A working farm would also be purchased to allow for experimental and practical agricultural work. Smith wrote that the museums and farm would “afford facilities to the agriculturists equaled by few institutions of the kind in this or any other country.”⁹⁶

To pay for this new department and faculty, Cocke offered to the Board of Visitors his previous \$20,000 University of Virginia endowment. Presenting a letter to the Board at their July 1859 meeting, Cocke wrote:

And seeing that in the cause of development of the system of scientific education imparted in the Virginia Military Institute as proposed by the Superintendent since his recent return from Europe and an examination of the scientific schools abroad – that a school of applied science in agriculture can at once be established in the Institute in entire harmony with and in fact in furtherance of the public usefulness and higher scientific development of the Institute. And still earnestly inquiring myself in what manner it may be practicable to make effective my own humble efforts on behalf of the advancement and elevation of the great interests of Agriculture, I desire hereby to tender to the Board the Visitors of the Va Mil Institute the \$20,000 of the bonds of the U of Virginia heretofore abovementioned, and upon the terms proposed to the University of Virginia.⁹⁷

⁹⁵ “The United States Agricultural Society,” *The Cultivator* VI, no. 3 (1858): 44.

⁹⁶ *Ibid.*, 21.

⁹⁷ BOV, “1859 Virginia Military Institute Board of Visitors Minutes,” 213. Further investigation is necessary, but if the bond were still invested in the University of Virginia, then that school would have, in fact, been paying for VMI’s agricultural faculty.

The Board quickly accepted the endowment, despite the fact it carried the same condition Cocks had placed on it before: that he choose the professor. Not surprisingly, Cocks chose Gilham as the Professor of Agriculture.⁹⁸ The Board also recommended that the professorship be named the, “Cocks Professorship of Agriculture.”⁹⁹ Cocks replied that he appreciated the Board’s compliment but preferred that it be simply called the “Professorship of Agriculture.”¹⁰⁰ The second professorship was endowed with another \$10,000 from Dr. W. Newton Mercer of New Orleans. Dr. Robert L. Madison, a Virginian residing in Baltimore, was elected to fill this chair as Professor of Natural History and Animal and Vegetable Physiology.¹⁰¹ A Hall of Natural History was funded by Mrs. E. L. Claytor who gave \$5,000 for the building to be named after her deceased son, an alumnus of the Institute.¹⁰² Smith also wrote letters to other potential donors for donations and endowments. Writing to solicit money from Colonel George Tuley in August 1859, Smith wrote that he hoped the endowments of both Cocks and Newton would “furnish a guarantee that your confidence will not be misplaced – or misused.”¹⁰³

While Smith and Gilham were preparing and organizing their new departments, events were occurring around the state that would directly affect the work they were doing. On Sunday, October 16, 1859, John Brown with a small band of twenty-two antislavery supporters seized the United States Armory at Harpers Ferry. Located at the lower end of the Shenandoah Valley, it was only 150 miles from Lexington. Brown’s objective was to seize the weapons at the arsenal

⁹⁸ There is a note in the VMI Board of Visitors Minutes regarding Cocks’s condition of choosing the faculty member: “Upon the appointment of a Professor of Agriculture, Col. Cocks declined exercising his right to nomination & requested that the nomination be made by the Board in the usual way, but upon being urged by the Board to make the nomination he nominated Major Gilham.” *Ibid.*, 215.

⁹⁹ *Ibid.*, 214.

¹⁰⁰ *Ibid.*, 214.

¹⁰¹ Couper, *One Hundred Years at VMI, 4 Vols.* I, 351.

¹⁰² Wise, “A Special Report to the Board of Visitors of the Virginia Military Institute on The History of Agricultural Education in Virginia and the Virginia Military Institute as a School of Agriculture.” 21.

¹⁰³ Francis H. Smith, “Letter from Francis H. Smith to Colonel George Tuley, August 8, 1859,” 1859.

and then arm and lead thousands of slaves in rebellion against Southern slave owners. President Buchanan sent a detachment of Marines from the Washington Navy Yard and Lieutenant Colonel Robert E. Lee, U.S. Army, took command of all Federal troops in Harpers Ferry. The next morning, the Marines, led by Lee and Lieutenant J.E.B. Stuart, rushed the engine-house and quickly subdued Brown and his followers. All of Brown's followers were killed, except Brown and three others. Not a single slave had flocked to Brown's call for rebellion.

A week after his capture, John Brown was brought to trial in Charlestown, Virginia, for treason to the Commonwealth, conspiring with slaves to commit treason and murder.¹⁰⁴ On November 2, 1859, Brown was found guilty of the charges brought against him and sentenced to hang on December 2. On the evening of November 25, eighty-five cadets and two Howitzers departed Lexington for Charlestown with Gilham commanding 64 cadets and Jackson commanding 21 cadets of the artillery unit. The cadets joined over 650 soldiers from the US Army and the Virginia Militia.

On December 2, a small crowd assembled on a clear, warm Friday for the hanging. Among the cadets was "an old gray-haired gentleman, whose long silvery locks hung over the cape of his cadet overcoat."¹⁰⁵ The gentleman was Edmund Ruffin, and Smith allowed him to join the cadets. Ruffin later recalled of the event, "My position was very amusing, and perhaps ludicrous, to the young men, and it required all the restraint of their good manners to hide their merriment."¹⁰⁶

The Virginia General Assembly also acted to prepare the state for war. On January 21, 1860 they appropriated \$500,000 for the manufacture and purchase of arms and munitions of

¹⁰⁴ Both of Brown's appointed lawyers had a connection with VMI. Charles J. Faulkner was a former member of the VMI Board of Visitors and Lawson Botts was a member of the VMI Class of 1844.

¹⁰⁵ W. N. Mercer Otey, *Confederate Veteran*, VII-120 (March, 1899).

¹⁰⁶ Craven, *Edmund Ruffin Southerner*, 176.

war. The administrators of the act, named the Commission of Public Safety, was a group of three members selected by the governor. Governor Wise appointed Philip St. George Cocke, Captain George Randolph, and Francis Smith to the post. The choice of the three was not surprising as Cocke and Smith were graduates of West Point and Randolph was a graduate of the United States Naval Academy. The three members threw themselves into the task, soon traveling with Governor Wise on a ten-day trip through the North where they visited arm makers in Springfield, Harpers Ferry, Wilmington, and the West Point Foundry.

The state soon tasked another member of VMI's faculty. Shortly after the cadets returned to VMI from the Brown execution, the governor detailed Gilham to "prepare a synoptically work for the instruction of the militia service. He will in as short space as possible plainly describe in his own way the duties of officers, field and company, adding matter at his own discretion."¹⁰⁷ At the time, Scott's *Infantry Tactics* (in use at West Point and VMI) and the recent *Rifle and Light Infantry Tactics*, by Colonel Hardee, were the only drill manuals available. The new militias forming around the state, however, wanted a manual not only to provide instruction for various arms but in giving forms of reports, requisitions, muster-rolls, and pay-rolls necessary for new citizen-soldiers units.¹⁰⁸ By November 1860, Gilham had finished a manual which was 743 pages long, not the "short space" the governor directed.¹⁰⁹ The manual was used for a short time by the United States Army before the war and then for the duration of the war by the Confederate Army.

By 1860, VMI was poised for a sweeping transformation into a school of applied science. Building on his educational beliefs and supplemented by new views gained on his trip to Europe,

¹⁰⁷ Couper, *One Hundred Years at VMI, 4 Vols.* II, 27.

¹⁰⁸ *Ibid.*, II, 26.

¹⁰⁹ *Ibid.*, II, 27. Richardson implored Gilham to prepare an abstract because of the high cost, "neither the state nor the officers will buy it." When it was published the text was 559 pages long.

Smith was excited to further develop a school that would be unique in the United States, and especially in the South. After almost ten years of striving for an agricultural department at VMI, both Smith and Gilham had realized their dream. However, war clouds at the end of 1859 would shift the focus of educators and state leaders, preventing the full implementation of the agricultural education plan. The coming war would destroy the lives of numerous VMI faculty, alumni and cadets, raze the school, and extinguish the agricultural school before it could begin instruction.

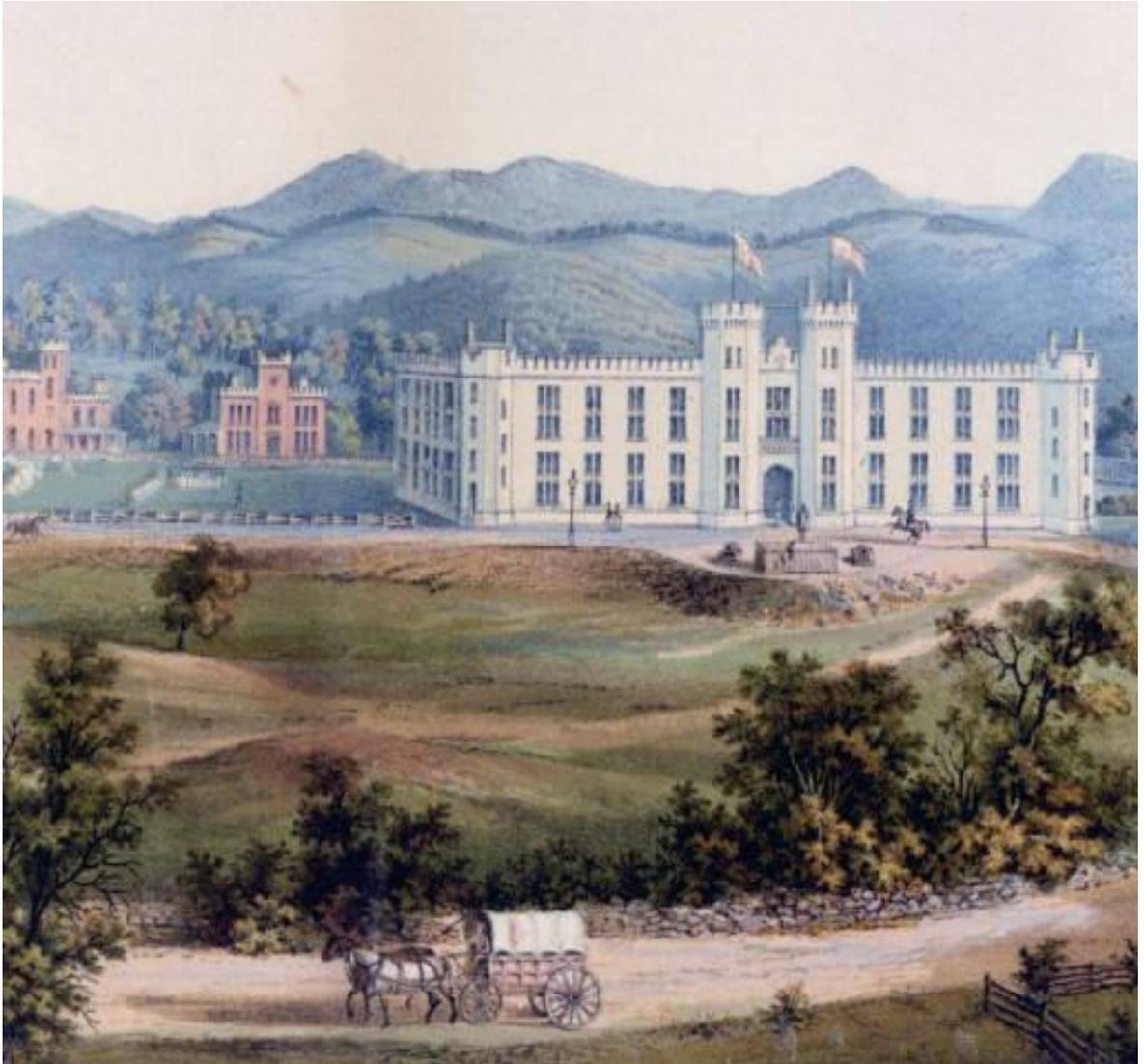


Figure 9. VMI in 1857

CONCLUSION

In April 1861, Virginia voted to secede from the Union. Although VMI remained open during the conflict, the war drained faculty, students, resources, and revenue from the school. Due to participation by the entire Corps of Cadets in the Battle of New Market in May 1864, the Union Army burned VMI that June. Allowed to re-open after the war in October 1865, the Institute struggled financially. The agricultural course of study was abandoned, leading the state to create the Virginia Polytechnic Institute – currently Virginia Tech – using the Morrill Land Grant Act funds in 1872.¹

Francis H. Smith continued as the Superintendent and re-built VMI in the period after the Civil War. His dreams of making VMI into the premier scientific and agricultural institution of the South never materialized. Ironically, VMI's performance in the war, supplying numerous officers to the Confederate Army, made the school famous for its military program over its academic curriculum. After fifty years as Superintendent, Smith retired on December 31, 1889, and died on March 21, 1890.

Edmund Ruffin would also be present at another important event, joining the Palmetto Guards in Charleston, S.C., and firing one of the first shots on Fort Sumter in 1861. During the war, several of Ruffin's plantations would be occupied and plundered by Union forces. After the Confederate surrender, Ruffin committed suicide on June 18, 1865.

¹ "Virginia Agricultural and Mechanical College Its History," *Virginia Tech*, last modified 2017, http://www.unirel.vt.edu/history/historical_documents/1872_history.html.

Philip St. George Cocke received a commission as a brigadier general in the Virginia forces at the beginning of the war. When Virginia's forces consolidated with the newly-formed Confederate Army, Cocke was demoted to colonel. Fighting in the First Battle of Manassas, Cocke distinguished himself and was promoted to brigadier general in the Confederate Army. However, unhappy about his Confederate Army rank relative to other generals, and what he considered a lack of praise from the first Battle of Manassas, he killed himself the day after Christmas in 1861.

William Richardson was again appointed as Adjutant General the year after the Civil War ended. He remained a strong supporter of VMI through Reconstruction, but the war ruined him financially. He died on September 1, 1876, practically penniless.

William Gilham fought as a regimental commander during the Civil War under his VMI faculty colleague Thomas "Stonewall" Jackson. After the Romney Expedition, part of Jackson's Valley Campaign, in early 1862, Jackson brought charges against him; he was relieved of his command and allowed to resume obligations at VMI. After returning to his duties in Lexington, his house was burned, along with VMI, in 1864. Destitute, Gilham left VMI after the Civil War and worked at a Richmond fertilizer factory, dying in 1872.

For a brief moment, VMI was poised to become the leader in practical education in Virginia and throughout the South. In the space of twenty years, through sheer force of will, Francis Smith transformed a small arsenal school into an institute offering an advanced educational and technical curriculum. Cadets received a strong background in the liberal arts and were then free to choose a major in fine arts, engineering, or agriculture. This plan was a substantial change from the customary classical education in fashion during the antebellum period and was very similar to the design of contemporary higher education degrees. Smith's

belief in providing applied knowledge for the white middle class allowed the agriculture program to take root in the early 1850s and develop into its own department by the end of the decade. Combining merit and discipline with a unique academic program, he created a popular educational system with a goal of producing graduates that were methodical, religious, virtuous, and productive citizens. His friends and colleagues, Cocke and Richardson, possessing agricultural interest, financing, and government connections, were vital to the success of establishing an agriculture program at VMI.

Smith was also extremely fortunate to have an outstanding faculty member in William Gilham. Gilham's knowledge of agriculture and chemistry was matched by his understanding of the need for agriculture education in the state. His leadership in helping farmers with soil samples and geologic surveys created and strengthened numerous ties with powerful patrons and established VMI as a center for agriculture.

As Roger Geiger writes in *The American College in the Nineteenth Century*, the teaching of college and university science and engineering courses started in the 1840s as the "railroad boom created employment for engineers and as advances in organic chemistry promised applications to agriculture."¹ While dozens of antebellum institutions offered courses in engineering and agriculture, many colleges and universities discontinued them after a few years due to financial concerns or pushback from conservative faculty.² As a new institution enjoying steady state funding and possessing faculty who shared Smith's educational goals, VMI did not have these difficulties. This resulted in VMI being capable of continuously offer engineering and later agricultural chemistry courses without interruption during the Antebellum period,

¹ Geiger, Roger L., ed., *The American College in the Nineteenth Century* (Nashville: Vanderbilt University Press, 2000), 26.

² Reynolds, "The Education of Engineers in America before the Morrill Act of 1862,," 459, 477.

increasing the school's influence in Southern higher education. The Institute's academic success can be measured in the numbers of engineering graduates. Between 1839 and 1859, VMI graduated 52 engineers, while the University of Virginia graduated only 80 during the much longer period of 1825 to 1874.³

If the Civil War had not occurred, it is probable that VMI's curriculum of preparatory liberal arts courses combined with special application schools would have been successful and popular with both parents and students. This new way of organizing courses of instruction was a direct challenge to curricula in place for hundreds of years. It would soon spread throughout Virginia and the rest of the United States due to powerful patrons, Smith's understanding of public relations, and the large number of graduates of VMI would go on to teach at other schools. Would classical curriculum colleges have felt the need to produce a second Yale Report? Additionally, it is interesting to contemplate the effect the new VMI curriculum would have had on the Morrill Land Grant Act or similar legislation.

Analogous parallels may be drawn from this dissertation and higher education in the late 2010s. Debates still occur over the value of a degree and the practicality and need of majors in STEM, liberal arts, and social sciences. Colleges and universities seek government appropriations for new majors, to help prepare state citizens for practical professions. Donors are approached for gifts and endowments and the stipulations that accompany them. Resistance to new degree structures occurs and online education has the possibility to turn in-residence instruction on its head. Last, faculty still complain that students need additional courses in English composition.

³ Ibid., 480.

VMI continues today as a state military college. Unique among other senior military colleges, it awards only bachelor's degrees, and graduates have the option of accepting a commission in the U.S. armed forces or pursuing a civilian career. In 2018, cadets can choose majors in engineering, arts and humanities, information and social sciences, life sciences, and natural sciences. While some aspects of life at the Institute have changed, other parts have remained as they were in 1859. Cadets still live in un-air-conditioned barracks and must roll up their mattress every morning, but indoor plumbing has negated the need for cadets to visit Woods Creek behind barracks. It is, however, still referred to as the Nile.

Outside of Preston Library at VMI, there is a memorial dedicated to the Roman general Cincinnatus. Having left his family and home to rejoin the Roman army when the empire was under attack, he represents VMI's "Citizen-Soldier" concept. Given VMI's brief association with agricultural education, the memorial is fitting for another reason; becoming a farmer after initially leaving the army, Cincinnatus left his plough to defend Rome.

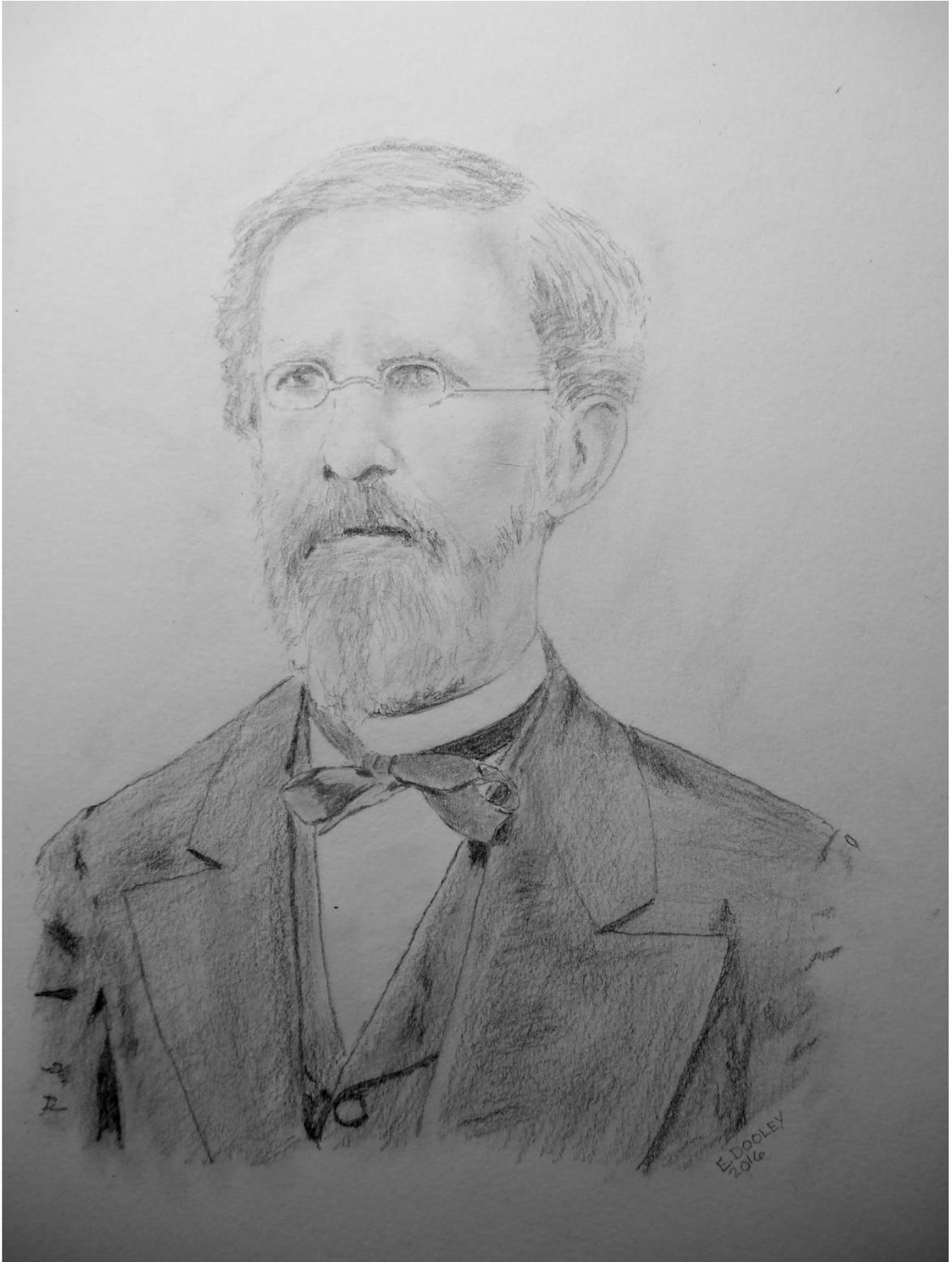


Figure 10. Francis H. Smith in Later Years

by Edwin Dooley

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APPENDIX A

VMI Class of 1852 Careers Farmers/Planters in Bold

Source: VMI Archives, Lexington, Virginia

1. James Lewis Ashby, Career: Civil Engineer; Miller.
2. **Thomas William Banks, Career: Planter, Slave owner.**
3. James E. Blankenship, Careers- Teacher; U.S. Coast Surveyor; Cadet Acting Assistant Professor of Math 1851-52; Professor of Math at Lynchburg College before the War; Taught Math and Military Tactics at Randolph Macon College 1862-64.
4. Powhatan Bouldin, Career: Lawyer, Journalist.
5. **Thomas Mundie Burke, Career: Farmer.**
6. **Abram Cabell Carrington, Career: Planter.**
7. William Fitzhugh Carter, Career: Whaling, Shipping.
8. Marcellus Palmer Christian, Career: Doctor.
9. **Samuel Shrewsbury Cook, Career: Farmer.**
10. John Fletcher, Career: Railroader.
11. **John Arthur Ellison, Career: Farmer.**
12. **William Randolph Fleming, Career: Planter.**
13. Simeon Beauford Gibbons, Career: Civil Engineer, Teacher, Merchant, VMI Board of Visitors 1859-60.
14. **George Augustus Goodman Career: Teacher, Farmer.**
15. William Milburn Gordon, Careers: Teacher, Principal Hillsboro Military Academy; Civil Engineer.
16. John Cooke Grayson. Career: Practiced medicine in Washington DC until the beginning of the Civil War.
17. James Virginius Hall, Career: Teacher.
18. Thomas Lewis Harman, Career: Business.
19. **Nathaniel Hope Harrison, Career: Planter.**
20. John F. Henderson, Military Record- U.S. Army.
21. **Benjamin Franklin Hudgins, Career: Farmer, Mercantile Business.**
22. George P. Jacob, Career: Unknown.
23. Edward Ker, Career: Unknown.
24. Hugh Ker, Career: Purser on Steamer Line.
25. **Thomas Lewis, Career: Farmer, Insurance Business.**
26. Fayette Augustus Lovell, Career: Lawyer.
27. **Robert Terrill Lovell Career: Farmer.**
28. John Graves Lumpkin, Career: Physician.
29. Miles Benjamin Manser, Career: Physician.
30. **Charles Tayloe Mason, Career: Civil Engineer; Farmer; Real Estate Business.**
31. Maynadier Mason, Career: Unknown.
32. John Campbell Mayo, Careers- Physician; practiced in partnership with Dr. Wat. Henry Tyler (his father-in-law) until 1857; practiced in Westmoreland Co. Va. after the war until his death.

33. Joseph Mayo, Career: Lawyer, editor ("The South," in Richmond, VA; "South Side Democrat" in Petersburg, VA). Member VMI Board of Visitors, 1860-1861 & 1873, 1874. Two brothers attended VMI- John C. Mayo, Class of 1852, and Robert M. Mayo, Class of 1857.
34. Jonathan Fleming Bingham Mays, Career: Baptist Minister.
35. John Gaw Meem, Career: Civil Engineer; U.S. Civil Service.
- 36. Thomas Taylor Munford Career: Planter; Farmer; Businessman.**
- 37. Colin Neblett, Career- Farmer and Lawyer.**
38. Leonard Jacob Nottingham Career: Deputy Sheriff; Postmaster.
39. George Smith Patton, Career: Studied law and practiced in Charleston (WVA).
40. William I. Preston, Career: Militia Officer, Civil Engineer; Educator.
41. Isaac Smith Robins, Career: Unknown.
42. Arthur Lee Rogers, Career: Lawyer.
- 43. Charles Lorraine Ruffin, Career: Farmer, Civil Engineer.**
44. James T. Snead, Career: Unknown.
- 45. Hiram Jackson Strickler, Career: Farmer, Civil Engineer; Adjutant General of Kansas.**
- 46. Thomas Dorsey Taliaferro, Post War Career- Lawyer; Cotton Planter; Farmer and stock raiser; In 1895 moved to the Chickasaw Nation Indian Territory (now Oklahoma) and founded the town of Madill, OK. Was on the County Seat of Marshall Co. OK.**
47. John William Tayloe, Moved to Birmingham, Ala. after the war.
48. John Addy Thompson, Career: U.S. Army Officer.
49. Robert Augustine Thompson, Career: Editor; Civil Servant; County Clerk; Appraiser Port of San Francisco.
50. Thomas Rowe Thornton, Career: Teacher.
- 51. Marius Pendleton Todd, Career: Planter, Magistrate of King and Queen Co.**
52. Martin Fletcher Tutwiler, Careers: Teacher; Civil Engineer; Chief Engineer of Madison, Monticella Railway Co.; Asst. Chief Engineer of East Va. & Georgia Railway; County Surveyor in Spaulding Co. Ga.
53. Douglas Tyler, Career: Lawyer.
- 54. George Clarence Waddill After the War he was a prominent cotton planter in Miss. and La. He was president of the Louisiana Levee Board and a director of the Vicksburg, Miss. and Pacific Railway until it's absorption by the Southern Pacific. He retired in 1895.**
55. James Alexander Walker, Career: Lawyer; Politician- Va. Legislature, Lt. Gov. of Va., U.S. Congress.
- 56. William Macon Waller Careers: Farmer before and after the Civil War.**
57. Henry Augustine Whiting, Career: Civil Engineer.
58. Charles Bruce Williams, Careers: Teacher.
59. William Overall Yager, Careers: Public official; Banker in Luray Co. Va.; County Treasurer; Unofficial source says he was a Postmaster and Judge in Kansas before the War; Superintendent of Schools in Page Co. Va. after the War; Represented Page Co. in Virginia House of Delegates 1874-75 and 1879-80.