Georgic Rhetoric, Virtue and the Commercialization of Agriculture in Pennsylvania from 1785 to 1870

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Georgic Rhetoric and the Commercialization of Agriculture
in Pennsylvania from 1785 to 1870

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Abstract

This research examines how farmers in Pennsylvania between 1785 and 1870 were persuaded by georgic agrarianism to take social, economic and even moral risks to abandon a semi-subsistence mode of production in favor of commercial production. The georgic rhetoric is derived from Virgil’s poem “The Georgics.” It discusses agriculture and man’s labor in nature. Virgil discusses the relationship between man, nature and his ability, or inability, to control nature to ensure his own survival. Beginning in the late 18th century, supporters of improved agriculture, mostly wealthy and upper-class gentlemen, tried to persuade common yeomen farmers to produce for the commercial market. Yeomen were pushed to use new and experimental methods to produce the highest yields possible using the most efficient methods. Common yeomen farmers scoffed at the idea. They saw experiments of gentlemen farmers as a needless risk and expense. Supporters of improved farming started three georgic institutions in Pennsylvania to put yeomen at ease. First were agricultural societies such as the Philadelphia Society for the Promotion of Agriculture in 1785. A distinct pro-improvement press began in the 1820s and finally, a state funded agricultural college in 1855 called the Farmer’s High School, now the Pennsylvania State University. In return for farmers taking on the hard work of manipulating the natural environment for the benefit of humankind, georgic agrarianism in the late eighteenth and nineteenth-century America promised farmers practical advantages as well as philosophical fulfillment. These benefits include, increased cash profits, a unique usefulness to the democracy and thus, most importantly, respect for their virtuous service providing food, fiber and fuel for the nation. In short, georgic ideals
pinned hopes of sustained independence and prosperity, of individuals and the nation, on the improvement of farmers’ moral and material status.
Introduction

This research examines how farmers in Pennsylvania between 1785 and 1870 were persuaded to take social, economic and even moral risks to abandon a semi-subsistence mode of production in favor of commercial production using georgic rhetoric.\(^1\) In return, georgic rhetoric promised farmers increased cash profits, unique usefulness to the democracy and thus, most importantly, respect for their virtuous service providing food, fiber and fuel for the nation. In short, georgic ideals pinned hopes of sustained independence and prosperity, of individuals and the nation, on the improvement of farmers’ moral and material status.\(^2\) Humans have been practicing agriculture, the selective management of plants, animals and the soil, for 10,000 years, perhaps longer.\(^3\)

For the vast majority of that time, the production of food, fiber and fuel necessary for human survival has been dominated by a model whereby farmers fed themselves and a small number of people around them. Today, the equation is flipped. The vast majority of the world population is fed, clothed and housed by a handful of farmers. For example, less than two percent of Americans feed the other ninety-eight percent. How has this shift, possibly the largest agriculture has undergone in its 10,000-year lifespan, come about? A farmer’s main efforts in the time period discussed here were for “basic self-

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\(^1\)The Georvic rhetoric discussed here is derived from the work of 1\(^{st}\) century Roman poet, Virgil. Virgil’s poem “The Georgics” discusses agriculture, its history and man’s labor in nature. Most importantly for the present work, Virgil discusses the relationship between man, nature and his ability, or inability, to control nature to ensure his own survival.


provisioning.\textsuperscript{4} Richard Bushman describes farming in this era as “less to do with scale than an idea.” The idea imagined that semi-subsistence agriculture could be a system whereby “…a family could provide most of what it needed for itself by its own labor using its own resources—something no other occupation could promise.” This “self-sufficient” idea was about personal security and autonomy, not to calculating profits. The life security found in agriculture was unavailable to urban, nonfarm laborers.\textsuperscript{5} Bushman asserts “farmers showed no signs of thinking like capitalists who measure success by the return on their capital” but rather measured success in how well they stayed in “balance”, relationally and financially, never owing or being owed too much. “By capitalist standards, American farmers were irrational and showed no interest in changing their ways.” Georgics were employed as a means to get farmers interested. Once progressives had successfully gotten yeomen on board with the georgic scheme at the end of the nineteenth century, they were armed with the means to navigate the social, economic and moral terrain of the new system of agriculture.

Global and complex phenomena in the eighteenth and nineteenth centuries transformed America from a society of farmers to a society with a few farmers. The implementation of science, increased connectedness to the global market and industrialization brought about changes in agriculture in every aspect. However, these processes only address the external, physical changes going on around farmers. They do


\textsuperscript{5} Jeremy Atack and Fred Bateman, \textit{To Their Own Soil: Agriculture in the Antebellum North}, (Ames: Iowa State University Press, 1987), 12.
little to address the social or moral conundrums of such large changes. Farmers needed a way to reckon with how they were being affected by such large changes internally, in their modes of thought and feeling, if they were to be persuaded to take the risks of transition to commercial production. They required new ways to think and feel about their work and themselves. A farmer in 1860s had to figure out not only how he could produce the most corn in the most efficient manner, perhaps using a recently invented corn planter, in exchange for cash in the market place, but also what it would mean about him when he did. Was he moral if he put himself into debt to buy a corn planter? Tradition answered with a most definite “no”, for he was putting his family’s security at risk. However, what if his efficient production efforts were reframed as contributing to the larger societal good, like national security or modeling thrift and hard work to rural youth? Adults feared such youth were being tempted to vice ridden lives in cities and towns and desperately sought ways to keep them at home. If the risk of debt he took contributed to his children being saved from the moral calamity of abandonment of rural values, perhaps the risk modernization was not that bad after all. Large scale changes towards commercial agricultural production had been happening so rapidly there were few to no established definitions of what constituted moral and respectable behavior in the new system. If risk taking could contribute to the large moral good of society like the agricultural progressives at the time were claiming, perhaps commercial production was part of the solution to stabilizing uncertain future. A certain form of agrarianism, georgics, provided the framework for how farmers should act, think and feel to be “good” farmers in commercial mode of production. It offered farmers a way to take on the risks
of transition to commercial production and feel good while doing it. Such actions would demonstrate to all they were the most virtuous citizens.

The georgic ethic views life as based in labor. It assumes life requires labor against nature to be sustained. Labor in a georgic view becomes estimable because it is what maintains life. Thus, the more labor one expends in sustaining life despite nature, the more they are worthy of respect. Further, one has the ability to expend the labor needed to sustain their own life, making them independent of owing that debt to another. Such a person is by extension free from all manner of unsavory circumstances that can come from creditor/debtor relationships. In georgic rational, farmers, reliant on no one for their existence, are believed to be the most independent of any occupation and consequently free of all manner of vices like sloth, corruption, greed, pride or disagreeable conditions like social, economic or moral subservience. In contrast to the georgic ethic is the pastoral ethic. The pastoral ethic is also a form of agrarian and also praises nature. It also originates from Virgil’s writings but offers a different view of nature than the georgic. In the pastoral rhetoric man’s relationship with nature is largely passive. The georgic “understands life as labor, the pastoral understands life as leisure.” Mankind fit in “easily and unobtrusively into their landscapes.”

Man in the pastoral only contemplates a sublime nature as it acts around him. Georgic proponents said his thoughts produce no useful (or life sustaining) outcomes. Man in the pastoral nature forfeits control of nature and thus his future. He becomes dependent on others to struggle against nature on his behalf. Further, georgic adherents say the pastoral man either

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perishes from a lack of control of nature or worse if he can coerce others to labor against nature to meet his needs, he becomes lazy, arrogant and ridicules the laborer as lesser. However, the innately hierarchal, pastoral ideal clashed mightily with the reality that most Americans were and could be landowners and thereby demonstrate their ability to manipulate nature in their favor. This meant unprecedented numbers of people could exhibit their independence from all manner of social, economic and moral ills.

Historian Benjamin Cohen asserts that while the pastoral may have had more press coverage in the late eighteenth and early nineteenth from poets, artists and philosophers, it “was an abstraction” “and did not represent the actual relationship most Americans had to their land…and thus limits our access to that era.” In other words, the pastoral view on nature likely was more popular among upper-class folk who produced as well as consumed the bulk of documentary materials like poems, paintings and philosophy books. Yet most people, not being from the upper class, remained less exposed to such works and instead relied on their acute, lifelong interactions with nature in the raw to inform their opinions on it and leaned heavily towards the georgic. If agricultural progressives, who were largely of upper- and middle-class origins, wanted farmers to transition to commercial agriculture, they would have to abandon pastoral reasonings and take up what farmers knew to be the reality, that life was labor. Yeomen associated the pastoral as the philosophical system that propped up the indolence and false superiority of the small, landowning class in Europe for centuries. Progressives would have to convince yeomen that even though messages for scientific improvement and market integration were coming from their upper-class mouths, they were most certainly not advocating for a pastoral view of the land.
The early American republic was not particularly secure from its more powerful and predominantly European ancestors. The new nation was also not particularly competitive in the world market. Further, the nation had an image problem as backward and unrefined. A fair portion of this image problem stemmed from the fact that in 1790, approximately ninety percent of Americans were farmers. Agriculture was the default profession for many rather than the passionate choice. As such, farming even though widely practiced, was not particularly esteemed. Civil leaders and agricultural progressives (gentlemen farmers) saw the apathy with which many viewed farming and weak competitive ability on the world stage as something that put America’s independence and prosperity at risk. Such progressives saw unprecedented levels of individual land ownership, a seemingly endless supply of that land and increasing demand for agricultural products due to urbanization and industrialization in Europe as a means to address America’s shaky security, respectability and market fitness. In large part, their hopes of increased security, respectability and market fitness relied on their ability to convince yeomen farmers to modernize. If agriculture could be mobilized to be

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8 In this work “gentlemen farmers” will be understood as a network of men who shared a common but not exclusive set of traits. These include a certain degree of financial wealth, education, social status, leisure time, membership in an agricultural society, involvement in agricultural education, readership of prescriptive agricultural literature, use of new agricultural methods and technologies or at least an interest in agriculture. Gentlemen farmers were in the minority.

9 “Yeomen farmers” in this work will be understood to farmers on the opposite end of the spectrum from gentlemen farmers. These farmers were the large majority of farmers in Pennsylvania. Yeomen were
more productive and efficient, it could be a basis for capital creation and security.

Further, state and local governments within the United States desired to use agriculture to the same ends, increased security, esteem and market fitness. Scientific improvement based on the authority of the georgic form of agrarianism began to be seen yeomen as a solution to these issues troubling civil leaders, gentlemen farmers and governments. If yeomen could be persuaded to adopt science as a means to increase production and efficiency, they could stabilize not only their nation and states but also raise themselves to more respected status in society due to increased financial wealth and education.

Georgic rhetoric guided Pennsylvania farmers into modern, commercial production. The following thesis will explore georgic rhetoric in Pennsylvania from 1785 to 1870. The origins, components, spread and adoption of the rhetoric will be discussed in four chapters. The first chapter will provide the context required to understand why Georgics were adopted while the last three chapters will cover the three examples of georgic institutions. In order of creation, these are, agricultural societies, the agricultural press and agricultural colleges.

Chapter one will examine how georgics appealed to late-nineteenth-century Americans, particularly gentlemen farmers, looking for a method to establish their virtue. Before the American Revolution, these claims to rural virtue were, in part, in

almost always of humble social, economic and educational status. As improvement ideals made headway in the nineteenth century, dividing lines between gentlemen and yeomen farmers became more blurred as yeomen opened up to basing their farming practices in science, becoming members of an agricultural society, attending agricultural fairs which were centered around improvement or began reading agricultural reform publications.
resistance to the long-held idea that those at the top of the hierarchy, such as European monarchs and nobility, had a monopoly on virtue. After the revolution, georgics let wealthy men who did not work with their hands claim to be just another humble citizen in the republic. Simultaneously, these gentlemen farmers pushed for scientific improvements in agriculture as a method to resist being once again subjugated by a European power. Further, dabbling in science let them claim a level of prestige and fashion. If foreign powers relied on America for its food and raw materials, surely, they would not disrupt their supply chain out of self-interest. Further, if a majority of Americans were landowners not just subsisting off the land but profiting from it, it would produce a network of individuals who were immune to being taken captive through debt. Americans could also exhibit their refinement as a nation by using science to produce wealth and secure consumer goods. In so doing counteract accusations of backwardness by their European relatives. The majority of farmers, yeomen, however, did not so clearly see improvement as the answer. Their point of view in contrast to those who pushed improvement will also be discussed as a means to show how georgics had to fight for acceptance.

Chapter two will examine the actions taken by gentlemen farmers to address issues of national and regional security, competitiveness and low image of farmers. This came in the form of creating agricultural societies to gather wider interest and support for

11“Yeomen farmers” in this work will be understood to farmers on the opposite end of the spectrum from gentlemen farmers. These farmers were the large majority of farmers in Pennsylvania. Yeomen were almost always of humble social, economic and educational status. As improvement ideals made headway in the nineteenth century, dividing lines between gentlemen and yeomen farmers became more blurred as yeomen opened up to basing their farming practices in science, becoming members of an agricultural society, attending agricultural fairs which were centered around improvement or began reading agricultural reform publications.
their cause. The creation of the first agricultural society in the United States, the Philadelphia Society for Promoting Agriculture (PSPA) in 1785, addressed the above concerns. The mission of the society was to increase agricultural production in the nation through more efficient means. Dozens of other agricultural societies with the same mission were established in Pennsylvania into the nineteenth century. These societies desired to get yeomen farmers on board with improvement. Few yeomen trusted the pleas of societies because they overwhelmingly came from the lips of the wealthy gentlemen who were nominally involved in the everyday work of a farm. With low membership in societies and public interest in the cause of improvement lower, societies launched two main efforts to garner yeomen adherents, that of agricultural fairs and printed works. Both efforts were well received but the publication of agricultural books, newspapers and other printed materials brought improvement rhetoric into widespread familiarity with all yeomen.

The success of the agricultural press to popularize improvement rhetoric will comprise chapter three. The core goals of the agricultural press were to educate farmers and in doing so combat condescending opinions of farmers as ignorant and crude. In addition to making georgics obtain a wide level of popularity and dissemination, the press hammered out specifics of how to practice georgics and how that practice could guarantee respect for the farmer. For example, farmers were encouraged to be thrifty, hardworking and continuously educate themselves about the latest agricultural practices. These habits put together would allow them to successfully compete in the marketplace thereby ensuring their independence as individuals, the nation and affordable products for non-farmers. Farmers fought and harnessed the bounty of nature on behalf of others. In
theory, this would garner farmers monetary profits, credit for widespread social harmony
and especially, agrarian derived virtue. Local agricultural societies, the PSPA and the
press cooperated in 1851 to establish the Pennsylvania State Agricultural Society (PSAS).
The establishment of the PSAS came through funds by the Pennsylvania government,
signaling the beginning official state sponsorship of georgic rhetoric as a means to guide
the agricultural future. Still, the combined efforts of societies and press fell short. More
work was needed to bring all yeomen on board. Supporters of commercial agriculture and
improvement looked to public education.

The fourth and final chapter will discuss the continued state sponsorship for
georgic rhetoric through the establishment of the Farmer’s High School (FHS) in 1855.
The FHS was one of the first collegiate institutions dedicated to the instruction of
agriculture in the United States. Many other attempts had been made at agricultural
education in the first decades of the century but had largely failed. The georgic
foundations laid by agricultural societies and the press were clearly and intentionally
adhered to in the new school. For example, students were required to complete theory-
driven courses in such as chemistry or physics as well as practical courses like
horticulture and animal husbandry. The FHS was keen to be driven solely by proven,
scientific methods. It equally rejected what it saw as scientifically unsupported methods
that came from yeomen following oral tradition and inexperienced gentlemen farmers
alike. In doing so, it became an arbiter and source of legitimacy for commercial
agriculture. Yeomen, gentlemen, industry and governments alike sought out the school’s

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aid for financial and moral benefit. In 1862 the georgic rhetoric received further approval by a government, but this time the federal government, with the passing of the Morrill Land Grant Act. The school became the sole beneficiary of funds earned through the sale of lands in the western United States. These funds were “…for the benefit of Agriculture and Mechanic Arts” and only distributed to colleges whose main purpose was educating youth in agriculture and, in modern parlance, engineering.\textsuperscript{13}

In an effort to make georgic rhetoric and three institutions in this work more alive and accessible, their presence will be highlighted and supported in the life of a Pennsylvania farmer named Bucher Ayres. Ayres farmed in Rock Springs, Pennsylvania from 1859-1869. From the years 1864 to 1866 Ayres kept a daily journal. Each journal

entry included his expenses, the weather and social events. His estate still stands and includes his large home, a barn, outhouse, smokehouse, icehouse and carriage house and several artifacts. The rhetoric seen on the institutional level written about here takes on real physical and personal shape in his life. For example, he was unable to dissociate himself from the moral implications his farming practices could and would clearly reflect when he wrote to the *American Agriculturalist* to ask what kind of grapes would grow best on his Pennsylvania farm. Yes, the information he sought had very practical applications. However, these grapes and other improvements to his farm bolstered his desired status as a man who supported the independence, refinement and virtue building of himself and others. Ayres’ familial and social circles tied him closely to the improvement movement. Further, Ayres farm was a mere ten miles from the Farmer’s High School. He was inescapably positioned socially, geographically and temporally to not be influenced by georgic rhetoric. Each chapter will examine an institutional example of georgic rhetoric in Pennsylvania then turn to the life of Ayres for examples of how the institutions functioned on the ground.

The regional and personal story of Ayres and Pennsylvania story ties into a larger, national story of agricultural progressives, governments and institutions trying to persuade farmers to use science beginning in the late nineteenth century. The

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15Planters and plantations will not be discussed here. Plantations were places where production centered on commodity crops like tobacco, cotton, rice or sugar. Labor was also largely done by indentured servants, slaves or sharecroppers. Mixed husbandry or Yeoman farms produced a variety of crops and animal products mostly for subsistence of the nuclear family. Planters in from 1785 to 1870 sold their products mostly for cash and required heavy capital investment. Mixed husbandry farms provided most of their own labor through the family and gradually required more and more capital investment as the nineteenth century progressed. Planters were only a few percent of American society and were concentrated in the south whereas small holdings farmers made up the majority of society and all over the nation. Planters also took
persuasion story will not be completed by the time the present work ends in 1870. Many more efforts needed to be carried out by agricultural progressives as well as state and federal governments to complete the transition into commercial agriculture. For example, the Hatch Act of 1887 granting funds for every state to build agricultural experiment stations, a second Morrill Act in 1890 to extend land grant schools to former confederate states and persons of color and Rural Free Delivery (1896) of mail to farm families directly to their homes were all major events supporting further market integration in the nineteenth century. The twentieth century brought a flurry of additional, federal level integration efforts that touched all rural Americans. These include, the Smith-Lever Act of 1914 creating the agricultural extension service, the Smith-Hughes Act of 1917 which established agricultural education in American High Schools, The first United States Department of Agriculture radio broadcast of market prices in 1920 and The Rural Electrification Administration of 1935 which brought power to rural people who had previously been left out. Pinning down an exact date of full market integration and acceptance of scientific research produced in land grant colleges and universities is impossible. Farmers today may indeed sell almost 100 percent of their produce to a market. Yet whether it is potatoes, beef, milk or a vegetable garden, no farm family this author has ever met did not keep some of the products back from the market for self-consumption. Perhaps despite such large governmental and progressive efforts to bring up improvement activities, but their character and motivations had some notable differences than those in the north. For example, northern ideologies were widely inclusive of all classes and sizes of farms where as in the south the improvement struggled to take deep and widespread roots. Historian Ariel Ron has attributed this to planters’ hostile response to the notion that slaves should be educated to better perform their work and poor white farmers could increase their power through improved methods. Ariel Ron, “Summoning the State: Northern Farmers and the Transformation of American Politics in the Mid-nineteenth Century,” *Journal of American History* 103, no. 2 (September 2016): 362, 368-370.
farmers into the fold of the market place in the ninetieth and twentieth centuries, farmers will always choose to retain some degree of independence from it.
Chapter One:

Background, Agrarianism and Georgics, Introduction to Bucher Ayres

Bucher Ayres was concerned about being a virtuous farmer, so he wrote to the *American Agriculturalist* to ask what kind of grapes would grow best on his Pennsylvania farm. In the early and mid-nineteenth century independence was the highest form of virtue. Farmers and farming had an image problem. It was not seen as particularly respectable or useful to society. Something had to be done to try and assure others agriculture was worth respect. Some hoped agriculture could be a basis for capital creation. Ayres also bought several new implements including two new threshers, a reaper, a seed drill and two corn planters. He made architectural changes to his buildings like when he converted a portion in his basement into a dairy room. He bought a new carriage, planted flowers and strawberries and kept a lawn for pleasure to seal the deal.

In the 1860s, such actions meant Ayres was practicing a scientific-based, intensified agriculture meant to produce for the commercial market. Commercial agriculture is the production of agricultural products using scientific methods to earn cash rather than for simple subsistence. The implements and remodel would help him be more efficient in his work. The pleasure items to a degree also implemented science yet were just as important in the commercialization movement as the efficiency items. They signaled to others fashionable and conspicuous consumption in agricultural form. Both categories were

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17Bucher Ayres, Journal 1864 – 1866; Elwood Homan, interview; *Pennsylvania Furnace* (Pennsylvania: February 10, October 2, 1865.)
used to entice other farmers to follow his example. That is to say, the agricultural reform movement discussed here sought to achieve social and moral goals just as much as economic ones. Those who wanted to see the improved status and actual state agriculture turned to a certain agrarianism form, the georgic.

Agrarianism is the concept of rural life and labor being inherently superior to urban life and labor. The people who are involved in agricultural pursuits are thus also broadly superior. For example, the theory assumes urban labor goes toward the wealth making of a small class of elites all the while keeping workers dependent upon those elites and the power structure in place. Agricultural pursuits, however, were virtuous for their self and familial interest. In the new and old worlds, farming kept a family fed without groveling to elites (which may lead to distasteful behaviors) and kept farmers so busy it was presumed to also keep their hearts pure from desires or wealth and power; which more often than not corrupted people and subsequently societies. In this way, as idealized in America for the first century or so, the yeoman farmer achieved a blissful and pure existence that kept him from either having too much or too little power. Both of which could lead humans to go against the best interest of society. In agrarian thought, farming was the best way to obtain and maintain liberty.

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19James Madison, “Federalist number 51.” 1787.

Agrarianism developed not on the farm but in town. Rural life in eighteenth-century literature and journalism was depicted as morally pure, clean, natural, beautiful, free and independent. Initially, these messages were directed at those in growing cities to encourage good behavior. The messages were increasingly directed towards those actually in agriculture. They also took on a more serious and nostalgic tone in the nineteenth century. City life was accused of being morally degenerate, dirty, corrupt and its residents were seen as either poor who lived independent squalor or as greedy elites. Agrarianism became highly fashionable in mid-nineteenth-century Europe, particularly in England in the midst of several significant, intertwining, social and economic disturbances. The end of feudalism combined with enclosure displaced many peasants from their land. Capitalism around the same time at the end of the century began in earnest and funded manufacturing. The Colonial and new American republic imported agrarianism notions and resulting scientific improvements from the Old World. Agrarianism, in part then, was a romanticizing and longing for a social and economic order that was fading from view. In its early days, it was found in upper class European and American society. America due to a limitless supply of land and democratic values used agrarianism in different ways and advocated for it more broadly than England.


In its American form, georgic agrarianism was put to the task of convincing farmers that using science to produce for larger markets to raise their own material and moral status was the best way to farm. Bucher Ayres and the agricultural networks he was involved in were key to this convincing. Widely available land and a democratic society meant that a never before seen kind of agriculture was possible. It became possible feed, clothe and shelter unprecedented numbers of people. Supporters of improvement hoped the increased productivity would provide the individual farmer with a degree of status and physical comfort previously reserved for non-laborers. A society with a majority of farmers seemed to many early American thinkers to be key to sustaining their experimental democracy. The sustaining could materialize just as much in practical forms as ideological. For example, excess production meant that Americans would be provided for and that a waring, plagued and thus hungry Europe would think twice about destabilizing the United States. Even more, in the absence of much capital but the presence of abundant land, America could use its yields as a means to compete in a capitalistic marketplace. It would be very hard to catch up with sophisticated manufacturing in Europe, but making sure manufacturers were dependent on the United States to feed their workforce could ensure a seat at the table.24

Key aspects of georgics in early America include notions of practicality, profitability and virtue. In the framework described above, agricultural labor, products and even landscapes took on symbolic meanings. For example, historian Paul Bourcier

argues that fences and hedges in this period not only served a practical function for
gentlemen farmers like Ayres but also acted as a symbol of gentility, good taste and virtue
when used in certain ways. The virtue resulted from one’s labors to control the landscape
and thus one’s self, which resulted in security and independence. All these qualities came
from an abandonment of the “self-sufficiency” ethic to one of commercial production. In
the minds of progressive agriculturalists, abandoning the self-sufficient ethic was argued
to be noble by agricultural progressives for several reasons. One, it would allow millions
to turn to pursuits other than farming, like industry and thus help the United States usher
itself into the modern era. Agriculture in the georgic supported the larger capitalist
society by providing every citizen greater and more equal access to food, fiber and fuel
by increased production. This in turn, theoretically, made it harder for citizens to be
controlled by more wealthy, powerful citizens. In a sense, it was much wiser to rely on a
network of small, independent, diffuse, farmers who were in agrarian standards honest,
moral and Godly than someone like an industrial capitalist. Lastly, rural people would be
improving their own socioeconomic and moral status through their use of modern
practices. meant that gaining wealth through agricultural labor became a virtuous pursuit.
Thus, when Ayres planted Gladioluses & Lilies in his flower beds along with ornamental
boxwood trees he ordered by rail, he was making a strong claim to his gentility and moral
character.25 In theory, scientific methods published by an agricultural society, journal or
college would then help Ayres keep his ornamental plants healthy and beautiful for the
enrichment of himself and others. The rhetoric above created constant tension between

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25Paul G. Bourcier, “‘In Excellent Order’: The Gentleman Farmer Views His Fences, 1790-1860,”
those who pushed for what they thought was an improvement by those who were truly at risk of facing corporeal or economic damage from a failed agricultural experiment. Snide comments in progressive ideologies towards reluctant yeoman farmers were thus used as a tool to provoke fear of being left behind by commercial agriculture.

Ayres (1818-1889) did not need to farm. He was college-educated and already had an established career as a railroad engineer when he moved to his farm in 1859.26 His first six years of life were spent on his father’s farm but after that, he lived in town when his father became a lawyer.27 He farmed from 1859 to 1869 on a 175-acre mixed husbandry estate in Rock Springs, Centre County, Pennsylvania.28 It was slightly larger than those in his neighborhood. Ayres grew similar things to his neighbors such as wheat, corn, hay, potatoes, a garden, cows, swine, sheep and chickens. The farm Ayres worked was a wedding gift to Ayres and his wife Jane, from her father, John Lyon in 1854. Upon his arrival, only a small tenant house and barn were present on the property. During his time in Centre County, Ayres built himself a large, eighteen room home. He added Greek revival architectural elements, four fireplaces, (two of which are marble), a separate wing for servants, a cherry banister on a grand staircase and fine furnishings.29 His house is a

26Elwood Homan, Pennsylvania Furnace Homecoming 10th Anniversary (1982), 25; United States Federal Census record for “B Ayres,” 1870. The farm was technically in Jane Lyon Ayres’ name on the deed. However, all other documents relating to the farm are in Bucher’s name. The farm was a wedding gift to the couple in 1854 from John Lyon, Jane’s father.

27William Henry Egle, Pennsylvania Genealogies; Scots-Irish and German (Harrisburg, PA: Lane S. Hart, Printer and Binder, 1886), 55.

281859 Tax Assessment, Ferguson Township, Centre County, Pennsylvania; Centre County Tax Records 1859-1873, Centre County Library and Historical Museum, Bellefonte, Pennsylvania. 1869 Tax Assessment, Ferguson Township, Centre County, Pennsylvania.

clear sign of education, travel, refined taste and wealth. Ayres corresponded directly with the builder while he was still living in Tennessee. Ayres seems to have put great effort to build his dream house, even though his length of stay in Pennsylvania was initially undetermined. The land Ayres farmed had only been recently cleared of timbers for use in his father-in-law’s Iron furnace called “Pennsylvania Furnace.” On the same land that he farmed, Ayres built a new house. His work was governed by the seasons and moderately by the markets, just like his neighbors. For example, he received a record of $2 per bushel wheat prices during the high demand of the Civil War. Ayres was also connected to global markets. The same merchant he sold wool and grains to was

Ayres’ large home in Rock Springs, Pennsylvania. Another two-story wing where the servants lived is hidden behind the trees on the right.
embroiled in a lawsuit after the ship meant to carry flour from the Pennsylvania
countryside to Liverpool was trapped in a frozen Philadelphia harbor. The flour rotted
in a warm, damp hull. Someone had to cover the loss and Ayres’ merchant was
determined it would not be them. Such were the dangers of market integration. Ayres,
however, was more insulated from market elasticity and misfortunes than his neighbors.
This came from his status as a “Gentleman farmer.”

Gentleman farmers were a concept well known by Ayres and his contemporaries. Other names for gentleman farmers include “Book farmers,” “scientific farmers,” or “theoretical farmers.” Non-gentleman or yeoman farmers were often called “practical farmers.” For the practical farmer, their work was focused on familial

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31 1868 Tax Assessment, Ferguson Township, Centre County, Pennsylvania.


33 Philadelphia Society for Promoting Agriculture, Minutes of the Philadelphia Society for the Promotion of Agriculture, from its inception in February, 1785, to March, 1810 (Philadelphia: J.C. Clark & Son, printers, 1854) 74. The word “practical” was one of the most common buzz words used throughout the movement to convince farmers to adopt one new practice or another. It became weighted with significant and particular meanings associated with the agricultural reform movement. It was meant to signal the ease of use, effectiveness and affordable nature of a practice and therefore signal it was within the realm of possibility and desirability of the common, yeoman farmer. A critique of gentlemanly experiments was often their lack of practicality due to expensive and time-consuming nature. An early work that used the term was the “Practical Farmer: Being a New and Compendious System of Husbandry, Adapted to the Different Soils and Climates of America” by English immigrant John Spurrier, 1793. The term was so ubiquitous that several Pennsylvania journals had the word in the title such as the “Practical Farmer and Rural Advertiser” starting in 1863; “Practical Farmer, silk cultivator and educator’s advocate,” first published in 1837; and “Practical entomologist”, 1865-67. Many other agricultural improvement publications in later in the
subsistence and they often lacked the higher degree of wealth, education and leisure time of gentleman farmers.\textsuperscript{34} Practical farmers where the large majority of Pennsylvania farmers while gentleman farmers were a small class. For some gentleman their interest was a hobby while for others it was also a means, at least for a time and in part, to earn a living. Ayres for example owned close to $17,000 worth of railroad stock in 1869 currency.\textsuperscript{35} Given this and other assets like household furnishings, farm tools, tools, implements, livestock and crops Ayres was able to comfortably take risks the average yeoman farmers could not.\textsuperscript{36} In short, Ayres was a man who farmed with money, not for money or a primary means of subsistence.

In the absence of modern, well-proven scientific methods as applied to agriculture, the regular farmer in the nineteenth century left the risk-taking up to men like Ayres. His outside income meant he was sheltered from the unpredictable aspects of agriculture. Most notably, the weather and increasingly, the markets. This measure of safety encouraged them to experiment with agricultural practices. Regular farmers had to find security in traditions passed down from familial links and personal experience. Neither the dabbling by gentlemen or low risk methods of yeomen fully met increasing demands for agricultural products in a growing nation. Traditional farmers did not

\textsuperscript{34}Loehr, "The Influence of English Agriculture," 3.

\textsuperscript{35}Ayres, Journal, No Date. 155-156.

\textsuperscript{36}Elwood Homan, the current owner of the estate, recalls as a boy a large bedroom with 9-foot ceilings filled full with fine furniture left by the Ayres family when they moved to Philadelphia in 1870. Elwood’s mother bought the estate from Ayres’ grandchildren in 1914. Homan, interview. 23 May 2013.
generally have much in the way of excess yields. Gentleman farmers may have had some increase in yield or efficiency, but again, not enough to meet demand. What improvers wanted most was for all agriculturalists to find was predictability through science. By extension, individual states, the nation and American democratic ideals could find stability. But how to convince a “backward”, cautious yeoman class to adopt scientific methods? Gentlemen farmers made hopeful promises as well as fear tactics. The hopeful promises centered around ease of transition and combined with specters of economic, political, social and ecological disaster if improved methods were not adopted. Ayres wrote to one of the premier agricultural journals of his day for advice because he wanted to follow, or at least be seen as following, farm practices that would avoid prescript georgic rhetoric that promised to avoid disaster in all forms.

Practicing the georgic ethic meant Ayres was judicious with his time, money and labor. He is contemplative but with purpose rather than whimsey. His physical labor, informed by critical thinking, was believed to be an outward sign of his inner humility, honesty, independence and strength. Following the pastoral ethic, however, would have made his grape growing efforts just amateurish, frivolous and marked him as an idle, gentlemanly dabbler. Ayres was not a farmer but rather a civil engineer with money, college education and family connections. He was new to the occupation and only stayed in farming for ten years. Still, Ayres was aware enough to know agriculture was undergoing change, not only change in how it was practiced but also how it was thought.

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about. Traditional agriculture was a semi-subsistence form of production in which land use was extensive; meaning that more land had to be brought under cultivation to gain higher yields. The new form of agriculture called for intensified production. Intensive production called for using more inputs like fertilizers on the same amount of land to obtain higher yields. The distinction between extensive and intensive farming is an important one to note. Intensive production and the georgic rhetoric behind it have defined most of America’s agricultural production history. Management was intensified to produce more; it is not simply that more acres were put into production (though that did also happen). In practical terms, this meant using mechanized equipment rather than hand tools or feeding and breeding livestock more precisely. All areas of increased management, however, required improvement of the mind. Increasing production meant critical thinking had to be applied to labor, both your own and that of others. As a result, every aspect of agricultural improvement based on the georgic ethic promoted fastidious advocation of self-education and application tested methods.

This specific regional story ties into a larger, national story of agricultural progressives, governments and institutions trying to persuade farmers to use science. It worked. Science and efficiency began their transition from being held with skepticism in the mind of the yeoman to virtuosity in this period. In order to produce the surplus needed for sale in a market, a farmer had to make the most efficient use of his land, labor and capital. A farmer could, of course, produce surplus without scientific methods, but not as much as he could with it. Experimenting with new methods was a risk. Making the full transition was an even bigger risk, farmers were not waiting in line to do either. In response, institutions and individual supporters of commercialization attempted to make
scientific agriculture virtuous. The persuading was done in several ways and over several decades. The first main method of convincing was based on the supposed ease of making the switch. This method extensively used the term “practical” as a slogan to assure farmers that trying out new methods would be efficient financially and in labor. The second main line of reasoning used was that commercial agriculture was profitable. It is essential to note however that this does not at all exclusively mean financial profitability. Georgics also promised social and moral benefits for the individual farmer as well as his community, state and country. The moral profit came in the form of virtue, honor, freedom, independence, respectability and stability. To be sure, making the transition was not as easy as reformers constantly told farmers. For example, newly invented implements frequently broke down, farm laborers could be hard to find and long-distance trade was often complicated by larger systems such as diplomatic tensions. The language used by improvers touted the ability for commercial agriculture to ensure all the moral qualities like virtue, honor, freedom and independence to individuals and corporate bodies alike. Most farmers, however, saw the reality that making the change was not as risk-free as advertised—and they hesitated. While the

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38 In the present work virtuous will be understood to mean morally and ethically upright, correct or righteous. In this context, virtue is equally important in deed as it is in thought and appearance. Correct deeds, or the appearance of them were, were markers of correct and admirable heart motives and built towards the very important and ever-present notion of respectability in the 19th century. (See Richard Bushman’s *Refinement of America* for excellent exploration of how gentility and refinement ideals went so far as to be seen as determiners of one’s worth as a person, 402).

39 On June 28, 1864 Ayres’ Buckeye mower broke, on July 1, 1864 knives broke on the same mower, on July 16, 1864 the platform on the Buckeye mower also broke, on August 1, 1864 a harrow broke on Ayres farm, June 17, 1865 Ayres had to completely overhaul his mower, and on January 25, 1865 Ayres had extensive damages done to his thrasher and treadmill caused by a frightened horse. Philadelphia Society for Promoting Agriculture. *Minutes of the Philadelphia Society for the Promotion of Agriculture, from its inception in February, 1785, to March, 1810* (Philadelphia: J.C. Clark & Son, printers. 1845) 42-43. In 1788 the king of England halted any entry of American wheat into his country over fears of the Hessian Fly believed to be in the wheat. 39 Lucius F. Ellsworth. "The Philadelphia Society for the Promotion of Agriculture and Agricultural Reform, 1785-1793." *Agricultural History* 42, no. 3 (1968). 191.
average farmer may have been frozen in fear of moving forward with commercial practices, improvers also used fear as a last line of rhetoric. However, this they played upon the fear of being passed-by one’s own neighbors, other states and even nations. If they did not take advantage of improved technologies and practices, someone else would, meaning missing out on the promises of profit and respect. Three institutions, agricultural societies, press and colleges were central to spreading these messages.

The three institutions discussed here, agricultural societies, press and colleges, were all begun to persuade farmers to take risks by educating them on how to take the commercialization risk most wisely. For example, these institutions conducted their own agricultural experiments and research to supply farmers with the best knowledge of how to increase their yields and efficiency, such as by using a mechanized grain harvester called a reaper. Further, these institutions tacked on heavily, morally toned systems of reason to their advice. The thinking may follow something like this—if a farmer lost a significant portion of his wheat crop in his attempt to use a reaper, well, at least he played a noble part in bringing the United States one step closer to challenging European agriculture which was widely accepted to be more productive and efficient.\(^\text{40}\) Thus the farmer’s efforts, though failed, could still support, in a roundabout way, societal goals much bigger than himself, like the idea that the American democratic republic was morally superior to any European monarchy. The farmer also demonstrated he was willing to take risks for the moral benefit of himself and his community. Institutions and individuals in the commercialization movement coopted notions of virtue already in put in place by agrarianism as a way to promise that farmers that even if after adopting new

methods the economic returns were slow, the very acts of educating himself, contributing the improvement of the land, economy and society meant a moral and social benefit was surely imminent.\footnote{Agrarianism is the notion that rural life and labor is better, more respectable, healthy, virtuous and useful to society than urban life and work.} Agricultural societies, press and colleges all inundated farmers with such messages and desired farmers to eventually think in these georgic modes all on their own.

Gentleman farmers were the largest group of individuals on the ground in this era implementing and modeling the ideas of commercial agriculture to their neighbors. Ayres was one such gentleman farmer. They also played a key role in organizing the agricultural societies, press and colleges in Pennsylvania. Commercialization in Pennsylvania was no accident. Ayres followed the advice from the agricultural journal he wrote and planted at least four of the nine grape varieties it suggested. Two of the varieties, Grizzly Frontignan and Black Hamburg, he ordered by rail from Pittsburgh and planted in his “hothouse.”\footnote{Ayres, Journal, May 2, 1864; May 20, 1864; and May 25, 1864.} The answer he got was (mostly) based on science. Ayres did of course not write the American Agriculturalist explicitly looking for advice on how to be a virtuous farmer. However, the overabundance of examples of his efforts to modernize his farming practices demonstrates his striving to be and be seen, as one. Successfully growing grapes in an ill-suited Pennsylvania environment was a signal to others of agricultural sophistication.\footnote{Bourcier, "In Excellent Order," 54, 547, 556, 564.} He was signaling that he was no an uneducated rube who grubbed out a basic subsistence from the soil. Rather, using planning, science and capital investments, Ayres was able to (theoretically) conquer nature and take part in
the campaign to persuade farmers to fully engage in the dangerous world of the global market place. An orderly nature would then in theory support larger state and national agendas all the while raising a farmer’s socioeconomic status. The agricultural societies, press, colleges and gentlemen hoped by spreading information they would bring about the liberation of farmers from rudimentary subsistence and low social standing. A prosperous, orderly, materialistic middle-class life would be their new lot. Ayres’ life is not exceptional but rather exemplary. He reveals how a network of Pennsylvania farmers adopted agrarian rhetoric and built agrarian institutions to make sure commercial agriculture became the dominant form in Pennsylvania. Along the way, science became virtuous for agricultural use and profit-making.

In the late nineteenth and early nineteenth-century context, American farmers had unlimited natural resources and land, unlike in the old world. Land equaled access to independence, in a personal, governmental and even spiritual sense. The unlimited land meant greater access to freedom for an unparalleled number of people. Even with a lack of capital and imperfect political freedoms, the sky really did seem to be the limit to personal advancement in comparison to feudal Europe. The supporters for agricultural improvement in agricultural societies, press and colleges wanted the productive potential of the land to be harnessed not only for individual benefit but also for larger agendas. Hard work could take the place of capital. Hope (and maybe some willful blindness) in democracy could take the place of a repressive, exclusive system of agriculture in the old

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45 Atack and Bateman, To Their Own Soil, 4.
world where land and ultimately the means for human subsistence and shelter, was owned by a few. This is the larger context into which Ayres fits. Historian Ben Cohen has termed it an “improvement ethic” that was inescapable in the early nineteenth century. Cohen describes the “zeal for improvements” to be linked to Enlightenment ideals promoting progress, rationality and knowledge production to reach economic, social/cultural goals. In the context of agricultural improvement in the United States, this meant these philosophical ideals were not only carried over but took on an emphasis on practicality. Improvements like the Erie Canal and railroads are examples of improvements made for the benefit of farmers and society alike.

The task of men like Ayres was in part, to convince American farmers that taking the risk of growing mostly for a market rather than self-consumption, was worth it. And to enthuse their neighbors that they could attain greater freedom, economic security, material goods and improved social standing by making the switch. Supporters of agricultural improvement also had the task of getting governments to support improvements financially and legislatively. Chief among reasons progressives pushed the virtue of science and commercial production was that they believed would ensure freedom, for the individual farmer, his state and his country. To think commercialization came to pass primarily out of greed is incorrect. Men and their families (who were equally important to the production enterprise) were implored to abandon their ways that relied on oral tradition and personal experience. Instead of relying on superstitions like “moon” farming, a farmer should cling to practices that are based on scientific

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observation and experimenting. Farmers were told to cast aside legitimate fears about the risk of larger market involvement. Proven science would make the transition safe. Or so, progressives repeatedly said. This would turn out to be only partially true. One complicating factor was that “scientific” methods were not always so scientific. Purveyors of sham fertilizers or the fact that most all implements meant to save work could add work due to design flaws yet to be worked out made attaining the benefits far from certain. In a way, science was a means as well as an end in itself. For farmers, it was supposed to be a means to greater independence, material goods and prestige from increased profits and status. For progressive institutions and individuals, they wanted farmers to use science to increase production and thus fuel larger economic goals by having farm productivity act as capital. To help farmers overcome their often-valid skepticism in the less than proven implements and methods, agricultural press, societies and colleges used agrarianism. In general, it told farmers they were a more virtuous breed but did not get down to the details of what kind of practices to do or markets to produce for. Progressives used agrarianism already in place but added the qualification the truest form of agrarianism was to cling to a “produce as much as possible as efficiently as possible” model of production. They should not cling to this model for the shallow reason


of making a profit, but because it would ensure the success of the agrarian class as well as their state and nation. In short, progressives promised farmers that if they used science, they could gain new access to the vital nineteenth notion of “respectability.” This came from being educated, materially wealthy and patriotic by safeguarding their nation’s and their own independence.

Improvers would use a combination of promises and fear to get individuals and groups to buy into their plans and set the terms for what a “good” farmer did and what his farm looked like and what a “bad” farmer did and what his farm looked like. Any examples of change made in the following pages in the name of improvement can be understood to be promoting individual/group benefit using promise/fear reasoning. Much of what makes a “good” farmer in modern times was decided in this era and by these ideas. Agricultural improvers firmly believed all other non-agricultural fields to function like the arts, manufacturing, medicine, law and government by proving those sectors with food, fiber and shelter. The organizing document to form a state agricultural society in Pennsylvania, for example, stated agriculture was the “stay and anchor of the State in times of danger and difficulty.” To a young nation looking to grow its non-agricultural sectors as well, progressives argued agriculture had to logically come first for that to be a


reality. The convincing will not have been completed when this story ends in 1870. However, the rhetoric and institutions needed to get every farmer on board with the scientific project was firmly in place.

The main concern of agricultural societies, journals and colleges was to educate farmers. Perhaps more precisely, convince them that commercial farming was indeed the best way to be a farmer. This required a gradual but fundamental shift on how farmers saw themselves, their work and their purpose. All of these institutions make obvious appearances and influences on Bucher Ayres’ life and the Pennsylvanian farmers more broadly. The three institutions and how they occur in his life will be discussed chronologically in the present work. They functioned interdependently by midcentury. Men with less education, money and more daily contact with nature certainly were members of agricultural societies but were few and far between. The societies, like the press and later colleges, included more practical farmers as the century progressed. Their real and perceived exclusiveness was critiqued by members and practical farmers alike. The establishment of a press devoted to agriculture in the 1820s made the first real attempt to educate the regular farmer on scientific practices en masse. As county agricultural societies became more populated by yeomen, they pushed for publications that covered the issues of their trade. A member of a society was sure to at least know of someone who consumed farming publications and vice versa. Quite often, a participant in one institution was a participant in the other. Societies and the press both spent several decades advocating for schools that formally taught scientific agriculture. Some small

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schools were established but most of them failed. This changed with support from the federal government by the passing of the Morrill Act in 1862. In the Act, each state was promised funds to support one institution of higher education that focused on agriculture and engineering. The Pennsylvania state government had already established the Farmer’s High School in 1855. After the Morrill Act passed, it assumed the status of Pennsylvania’s land grant school and became The Pennsylvania State University. When Ayres moved the Pennsylvania Furnace in 1859, he was less than ten miles from Penn State’s campus. He had not only close physical proximity to the state’s agricultural school but also ties to the community of men and ideas behind it. Agricultural colleges and Penn State were a direct product of agricultural societies and the press.

Some facts need to be stated before an in-depth discussion of the institutions begins. The farmers discussed here, were not at the mercy of a big, bad capitalist or nationalist/ regionalist machine pushing for commercialization. The institutions and people who advocated for scientific agriculture and market integration had quite a hard time of it. In fact, they had a hard time for more than a century in terms of getting full support from a majority of farmers. The full integration would not happen until long after the years covered here. If and when farmers adopted scientific practices like using machinery or plant breeding it was selectively and little risk as possible. Further, they did use new methods, they were eager for a variety of benefits. This included, less physically grueling work, greater access to consumer goods and standard of living through more

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55 Ayres’ uncle was on the board of the Pennsylvania State Agricultural Society that founded Penn State and he was related to the first president of Penn State, Evan Pugh, through his wife. Egle, *Pennsylvania Genealogies*, 396, 440.
cash flow, a greater degree of control and predictability in their work and finally, a
degree of prestige “Improvements” or “science” were not always so improving or
scientific. Further, some historians have suggested georgic rhetoric may have been
intentional in efforts by elites to preserve nineteenth-century class structures who
benefited from them.\textsuperscript{56} The caution and skepticism of farmers were fully warranted. The
current system of agriculture that requires specific and continuing scientific education
and large amounts of capital was not a forgone conclusion.

The convincing of farmers was in a large way a simultaneous attack and support
of the farmer’s identity. They themselves, by the very reckoning of basic agrarianism,
were “better” than non-farmers. Yet somehow the rhetoric seems to only support a certain
kind of farmer, one who is “pure”, sacrificial, independent and willing to leave behind
“archaic” tradition. The contradictory nature of speeches, letters, articles and advice from
the time has been mentioned but not thoroughly explored by scholars.\textsuperscript{57} Why put up with
the constant verbal castigation from those spreading georgic improvement ideas? To be
sure, not all farmers read or heard the things being put forth in this period. It was that
even while farmers were being attacked, georgic advocates offered the only real promise
of blanket respect in society; and then offered a way to increase that respect if farmers
educated, professionalized and capitalized themselves. For example, the 1860 agricultural
census states that improvements can on the national and state-level “command
respect…and confidence” at home and aboard through “improving tastes” and “enlarging

\textsuperscript{56}Clinton B. Allison, “American Public Schools and the Agrarian Myth,” \textit{The Agrarian Tradition on
American Society: a focus on the people and the land in an ear of changing values} (Knoxville: University

knowledge” of individual farmers.\textsuperscript{58} It seems farmers were never quite good enough even in their own eyes.

After his father-in-law’s death in 1869 Bucher and his family moved to Philadelphia and he returned to railroads. Whether he farmed out of family pressure or personal desire cannot be known. The record of his actions though indicates he was not sure how or where he fits into the world around him. Modern agriculture as a career requires education and capital that is out of the reach of many, even those who are raised in it. Ayres could traverse back and forth between consumer and producer realistically. Not so today. His actions towards implementing science and market integration helped transition farming from a way of life to a business.\textsuperscript{59} The institutions he was connected to, agricultural societies, press and colleges, were supported by governments and elites because they offered security to a new nation and regions within it. Coming from millennia where land was the basis of power and going towards the modern era where it was based in capital, their support was not ill-founded. Sincere belief in the virtue of agriculture and agriculturalists was also a factor for governmental support. Getting farmers themselves on board in large numbers took simultaneous attacks on and building up again, of their identities through the rhetoric of georgic agrarianism. The debate was what kind of farmer was the best farmer. There was never a debate around whether in

\textsuperscript{58} Kennedy, \textit{Agriculture of the United States in 1860}, v.

general farming was good or not, even by the less than supportive public. However, a flood of factors like better access to the global market, industrialization, loss of soil fertility in the east, westward movement of populations to western territories and fear of losing rural values pressured agriculture to conduct some sort of change to better fit the needs of a modern nineteenth-century society a beyond. Was the best farmer for the

There is no known map of the grape vines Ayres planted. However, the above map drawn by his hand includes seventy-four individual apple trees in twenty-one different varieties. Ayres took pains to document other fruits he planted. He grafted some of the trees and then to record how many succeed in the bottom right hand corner. “Whitehall Road” at the top of the map was then part of the “Great Road to Pittsburgh”, now known as Pennsylvania Route 45.
future one who reads books, used science and greater marketplace integration or yeoman who relied on traditional knowledge and limited his market involvement and thus risk and debts? What type of practices would allow farmers to retain the most independence as well as gain the most esteem? Georgic arguments overwhelmingly won out. For example, as the nineteenth century progressed, to be a good farmer, science, capital and efficiency were increasingly required. It further demanded the farmer to continually educate himself and trust that producing as much as possible, as efficiently as possible was the noblest way to farm.
Chapter Two:
Agricultural Societies, Philadelphia Society for the Promotion of Agriculture,
Pennsylvania State Agricultural Society, Societies in the Life of Ayres

A majority of the initial organizers in the commercialization of agriculture were men who earned a living with their minds, not hands. Agricultural reformers did not want farmers to simply change their practices, but also dramatically alter their notion of what being a "good" farmer entailed. The first agricultural society in the United States was founded in 1785 in Philadelphia.\(^{60}\) Named the Philadelphia Society for Promoting Agriculture (PSPA), the society established the model for how to spread agricultural knowledge. This knowledge was intended to proselytize the yeoman farmer into risking transition to commercial production. To be sure, surplus production that could be bartered or sold for cash was desirable to any farmer. Producing surplus for the market required extra capital and labor the farmer may or may not have. Those who most wanted commercial agriculture in this period desired a majority of agricultural products to be for the consumption of others, not the farmer and his family. Adopting new practices was a bigger risk than farmers were comfortable taking. However, by establishing agricultural societies and spreading information on the latest in agricultural improvements, members of the PSPA hoped to assure farmers that a scientific mode of production was both safe and profitable. From the beginning of the century onward, societies nationwide pushed

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\(^{60}\)Ellsworth, "The Philadelphia Society for the Promotion of Agriculture and Agricultural Reform," 189.
for an agricultural press. After floundering for a few decades, a sturdy press emerged in the 1830s. Supporters of the press, in turn, lobbied for agricultural colleges in the 1840s to 1860s. The PSPA had a direct hand in creating the Pennsylvania State Agricultural Society which parented Penn State University. Therefore, any discussion about the commercialization of farming movement in Pennsylvania must begin with an acknowledgment of its dependence on gentlemen farmers and the agrarian rhetoric they subscribed to. Agricultural reformers and their ideas had a significant impact on one of the largest demographic shifts in the nation’s history, the shift from rural to urban. In the United States, this clearly shows up in census data recording the citizenry’s occupation. While not necessarily intentional, making such a large demographic shift in Pennsylvania and the United States required coordinated efforts. The gentleman farmers and agricultural societies in Pennsylvania were key to making that shift happen. Agricultural and political leaders of the late nineteenth and early twentieth-century Pennsylvania realized that continuing in a semi-subsistence form of agriculture would be a very large missed economic opportunity. They would need to mobilize farmers in order to meet their economic aspirations. This is where the role of gentlemen farmers begins. They claimed a new form of agriculture was the way of the future and their efforts towards increased and efficient production helped embed into the Pennsylvanian mind the virtuosity of a scientific mode of production.

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Gentlemen farmers had a specific role to play in early American agriculture. Their role was that of a transmitter of progressive agricultural practices and ideas. Ayres typified a gentleman farmer and tax records in 1868 assigned him that title. He was educated, financially comfortable, well connected and possessed leisure time. Gentleman farmers sought to harness the economic potential of America by combining agriculture, commercial trade and science. They would apply their notions of georgic agrarianism to the trio to make their plans socially and morally cohesive. Most farmers, however, lacked the time, finances and inclination to experiment with the new practices needed to reach production and efficiency goals gentlemen farmers hoped they would. Men like Ayres and those in agricultural societies were left to fill the void. Before agriculture could become a means to earn a profit by every farmer, it had to be fostered along by men for whom survival was not a concern. The rise of gentlemen farmers help us understand agriculture as it transitioned from a means of subsistence to a commercial enterprise. These gentlemen farmers relied on a number of different messages to convince farmers, governments and the general public of the usefulness and virtuosity of agriculture. They consistently stuck with the notion that agriculture was useful; however, that alone was not enough to persuade farmers to risk trying out, or spending money on, new methods. It was also not enough to persuade the general public to view agricultural work as dignified

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63 1868 Tax Assessment, Ferguson Township.
as other lines of work or get financial support from the government.  

Therefore, societies had to provide additional justification beyond merely practicality and profit. They appealed to commercial agriculture’s supposed ability to nurture virtuous traits in the human heart and soul. This included notions of freedom or respectability. In theory, a farmer could use the increased profits he had to refine himself, his family, and his farm. A yeoman could buy his wife and daughter refinement tools, such as a piano or send his children to an academy.  

As more agricultural societies were established in Pennsylvania, gentlemen farmers were able to more effectively reach the ears of those they wanted to hear their message most, farmers themselves.

The constitution of the PSPA reveal the organization’s goals and that of all agricultural societies broadly. Most notably, after establishing their name the society stressed their “attentions shall be confined to agricultural and rural affairs; especially for promoting a greater increase of the production of land within the American States.”  

Greater yields obtained by more efficient means was the aim and all the following ideas are oriented towards obtaining this overarching goal. For example, the movement hoped that the use of science and would increase profitability and consequently increase their respectability in the public opinion. In the early to mid-nineteenth century context, these two points would have been possibly the most significant points to address in bettering the esteem of farming in society. Adopting science would hopefully distance farmers and rural populations from centuries of superstitious beliefs in the late enlightenment period.

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Profitability meant that freeholding farmers with cash income were starting to share essential traits that had for centuries almost exclusively been held by nobles in feudal Europe, such as leisure time and access to material goods. In a nation with abundant land, one could theoretically upset the long-held social order from the old world. Money and land equaled power. Farmer access to these threatened elites’ monopoly on power. In addition, when the term “profitability” was used in the movement, it was not exclusively meant as a financial profit, but also social and even moral profit. Social profit came from the freedom and equality that financial profits could help ensure (at least equality and freedom for white males and in the supposedly backward-looking context of the old world). Moral (personal and corporate) profit came from the supposed Godly work of agriculture, which promoted a peaceful society supported by freedom and equality and the general “improving [of] tastes” of farmers.68 The fear of missing out on these types of benefits was used as an inducement to change. In summary, reformers played on both the hope of opportunity and fear of missed opportunity to appeal to farmers and then bolstered those emotions by ensuring farmers that new methods would be affordable, easy (practical) and virtue building.

Other key bylaws of the PSPA, amongst housekeeping issues like how to run elections, were goals that would shape the agricultural improvement program in Pennsylvania as it unfolded in the nineteenth century. First was the mandate to publish new agricultural information (this usually came in the form of excerpts from longer books and treatises) and findings from members’ or others’ agricultural experiments. However, publications by early agricultural societies had limited success. Societies found

it hard to cover the costs of publishing and the content was repeatedly criticized for being long-winded, impractical and high-minded. The readership of society publications was small and many yeoman farmers balked at the idea of taking advice from “pleasure farmers.” Progressive agricultural publications would not have wide readership until the establishment of a separate agricultural press in the 1820s. Second, prizes would be given to those who submitted the best ideas for improvements or had the best results with farming experiments. For example, the first competition was won by a PSPA member for his essay and plan for an efficient barnyard. A final pillar of the society was dedicated to helping establish and support other agricultural societies. The PSPA further committed to corresponding with them to trade information and solutions and welcomed members of other societies from other states and countries. This and society meeting minutes make clear that the PSPA was an interregional and internationally connected organization from the start. This type of networking would carry on throughout the movement and was vital for its success. Leadership of the societies by men who were to a degree connected, educated and wealthy community leaders were the norm. Prominent men like Benjamin Rush, Robert Morris and George Clymer were charter members of the PSPA. All three were signers of the Declaration of Independence and members of the Continental

69 Marti, To Improve the Soil and the Mind, 125, 131.
70 Trustees of the Massachusetts Agricultural Society, “Extracts from the Museum Rusticum,” 190.
73 Philadelphia Society for Promoting Agriculture, Minutes of the Philadelphia Society 1785-1810, 55, 117, 113.
Congress. Judges, planters, physicians, bankers, professors and politicians were some of the other professions included in the society.\textsuperscript{74} Aside from the majority of gentlemen farmers, some local practical farmers were also members. The PSPA’s membership and meeting attendance policies were intended to reach the widest audience possible. Their meetings were open to any member of any other agricultural society that they corresponded with, which were numerous. These “honorary members” were “invited to assist us whenever they come to Philadelphia” and “always” had the “right to attend our meetings, without being invited.” Furthermore, the society declared that “strangers with a propensity to agriculture…” were also welcome to attend meetings if they knew a member.\textsuperscript{75} The elitist tendency of agricultural societies, as well as the commercial movement in general, was a frequently critiqued issue. Critiques lessened as improvement information became more accessible and gentlemen farmers altered their sometimes-condescending tone yeomen. By the time this story ends in 1870, many of the same criticisms were still present.\textsuperscript{76} This was typical for societies in Pennsylvania and the nation overall. Even still, the attempts by societies to live up nineteenth-century standards of inclusivity appear truly genuine. By midcentury, local and county agricultural societies cropped up all over the state. Common farmers would increasingly grow in numbers in society membership. These features and goals of the PSPA were common for all agricultural societies in Pennsylvania. Though Ayres seems to have never joined a

\textsuperscript{74}Gambrill, “John Beale Bordley,” 417, 419.

\textsuperscript{75}Philadelphia Society for Promoting Agriculture, Minutes of the Philadelphia Society 1785-1810, 4-5.

society, he was deeply affected by the agrarian rhetoric they propagated nonetheless. In fact, his actions clearly show ordered his life around georgics while a farmer.

To sell the commercialization project coded rhetoric and language had to be used. The most basic reason given for farmers to try new technology or methods was its practicality. Practicality meant efficiency or cost-effectiveness and this line of reasoning was used almost universally as a baseline argument in favor of commercialization. Other, usually more abstract, lines of reasoning would then be added on, some of which will now be discussed. The transition in many ways was agriculture developing from millennia of having similar practices to the modern era. For example, the exchange of animal and human power for mechanization had monumental impacts on agriculture’s ability to produce higher yields, particularly in the realm of small grains. As will be discussed in detail later, Ayres directly participated in this transition by purchasing two threshers. Of course, mechanization had been involved in agriculture before, but what makes this particular adoption of mechanization unique is its relative availability to all farmers compared to earlier eras and subsequent and intentional leveraging for personal, regional, national and company gain. Thus, when farmers were encouraged to do something like mechanize, in theory, it not only saved them from the practical repercussions of heavily taxing physical labor but also contributed to the success of the larger society by producing agricultural and moral abundance.77 Some sources advocating for improvement made very general statements about supporting local, regional and

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national economies. However, Ayres’ actions to mechanize did indeed contribute to these economies and such statements were not empty. For example, Ayres his regional economy though one of his threshers which was delivered to him by rail from New York.\textsuperscript{78} It is very likely his Buckeye reaper mower was also delivered to him at the Spruce Creek train stop several miles from his home. His mechanization efforts also contributed to his local economy. For example, he records paying $9.50 to Mr. Swartz, likely a store owner, for reaper parts and possibly his labor to fix it. Ayres, in fact, records multiple instances of buying parts and repairing his equipment.\textsuperscript{79} But whether buying manufactured goods or producing products for the market, farmers, who made up the majority of the society, possessed a very significant amount of capital waiting to be integrated into the market.

Gentleman farmers and agricultural society members had part of the capital needed to cover their educational, experimental and developmental goals, but lobbied state and federal governments for more.\textsuperscript{80} For example, in several of their earliest meetings in 1786, the PSPA planned a petition for the Pennsylvania General Assembly to fund the building of a bridge across the Schuylkill River. It was hoped the bridge would make travel from the rural west bank into Philadelphia more efficient than the ferry system.\textsuperscript{81} The petition was successful and in 1806 the bridge opened. The bridge’s intended use as a facilitator of commercial agriculture was shown not only in the society’s

\textsuperscript{78}Ayres, Journal, October 1, 1864.

\textsuperscript{79}Ayres, Journal, August 5, 1865, June 17, 1865, June 25, 1864, July 19, 1864, September 6, 1864.

\textsuperscript{80}Ron, “Summoning the State,” 352, 354, 357, 367.

\textsuperscript{81}Philadelphia Society for Promoting Agriculture. Minutes of the Philadelphia Society 1785-1810, 25-28, 32.
express statement as such but also in its ornamentation. The eastern entrance of the bridge that faced Market Street was decorated with sculptures of “commerce” while the western entrance, that welcomed incoming agricultural produce, was decorated with sculptures of “agriculture.” While “handsomely ornamented,” the society stressed that the minimum amount of money that would be used on the bridge. This ensured all who used it that the society and farmers it represented possessed a certain level of class and respectability, yet also retained its utility as a bridge. Furthermore, the societies published pamphlets on the bridge touting the bridge’s ability to “increase the celebrity of this state…” as other major bridges had done for Pennsylvania. This language was code meant to ensure the general public, especially those in the government who funded the bridge, that the agricultural sector contributed to Pennsylvania’s competition at a national level. Such language of competition of state versus state and the United States versus other nations would be repeatedly called upon as a reason to support the commercialization process. In a time when the vast majority of the economy, as well as the population, was tied up in agriculture, foregoing improved methods and education meant there was little hope for states or the nation at large to be competitive in the world market. The rhetoric used by these progressives had real-world consequences and contributed to the dramatic abandonment of the farming for non-agricultural pursuits over the course of the century.

After struggling for several years prior, the PSPA disbanded in 1794.\textsuperscript{83} This collapse was due to several reasons including a lack of funds that made publishing their findings, personal conflict among members and most of all, the methods they society advocated were still often out of reach for many farmers. Membership and meeting attendance remained small for the first few decades. Historian Lucius F. Ellsworth explains,

These dirt farmers realized that such conditions as the high price of labor and the availability of cheap land meant that direct application of English techniques was not generally feasible. In other words, extensive rather than intensive farming proved most economically advantageous for many farmers. Most of the new techniques advocated by the society, however, were for intensive farming.\textsuperscript{84}

Farmers were asking, “Why put extra effort and capital into a new method like soil conservation and manuring when there was cheap, plentiful and fertile land farther west?” “Why buy an expensive implement like a corn planter or thresher when they frequently broke down, finding parts may be hard and even more so a technician who knows how to assemble and fix them?” Sowing seed or threshing by hand required long hours and physical labor, however, the risk of following well-established practices was low as compared to newer methods like using a machine to do the same work. The society had a hard time answering these rebuttals effectively. Implementation of new methods on many farms on a daily basis would remain an issue past the time period covered here. Ellsworth argues that the society was able to spur on some change near their locus of influence in southeast Pennsylvania, Delaware, New Jersey and the eastern shore of Maryland. In those places, labor was more affordable and the land was more

\textsuperscript{83}Ellsworth, “The Philadelphia Society for the Promotion of Agriculture,” 189-200.

\textsuperscript{84}Ellsworth, “The Philadelphia Society for the Promotion of Agriculture,” 191, 198.
expensive due to the higher population, meaning rapid improvement became practicable and necessary to stay afloat. Moving west to cheaper, more fertile land was always a backup plan. Yet, the labor and capital needed for intensive agriculture was just not there for many in the state. Ellsworth also credits the society for truly initiating the conduction of systematic experiments and then the publication of the results; some in their own publications, but more often newspapers. The society “constantly call[ed] attention to the deficiencies of American husbandry and by developing ways of overcoming these conditions, the society unquestionably aroused an interest in the improvement of farming methods.”

Pennsylvania farmers as a whole would need more exposure to this improved rhetoric to be convinced to make the transition than the PSPA could provide. The demand was partially met by the PSPA’s hand in organizing other societies such as the South Carolina Agricultural Society in 1788, the Philadelphia County Agricultural Society and many other town or county organizations in the state. “Almost all of the agricultural societies formed after 1785 followed the same basic institution and activity structure as the PSPA.”\(^85\) Before their disbandment, the PSPA and some of its members outlined several objectives that eventually became the blueprint for commercialization in Pennsylvania up until 1870.\(^86\) Early in 1794, the society appealed to the Pennsylvania State Assembly requesting an act of incorporation for their chief aim, the establishment of a state-funded agricultural society. After explaining what they thought might be achieved by a state-wide society, the PSPA proposed further areas needing support.


These included items such as the establishment of branch societies, the establishment of agriculture of local agricultural libraries, inclusion of agriculture in primary and secondary education and the endowment for agricultural professorships at collegiate institutions. These goals had a distinct bent towards discovery and education in the name of what was “profitable” and “practicable” and was sure to bring “prosperity” and “happiness” “to a great body of citizens.” The measure was rejected by the state assembly and the society disbanded later that year. It would not meet again until 1805 and, after another forty-six years of advocating, the PSPA would finally be granted its state agricultural society in 1851.

In 1850 gentlemen farmers and society members were nervous about the improvements states around them were making to their agriculture systems. To them, Pennsylvania was falling behind and it was dreadfully clear. Five members of the Philadelphia Society wrote a brief address to Pennsylvania farmers asking them to convince the state legislature to help fund a state agricultural society. The address was hopeful in tone because of the power farmers could potentially wield, but even more, conveyed a sense of worry and urgency. Neighboring states were racing ahead by harnessing agricultural potential. Even worse, many farmers in Pennsylvania did not seem concerned. The document makes the usual appeals to personal and state-wide benefits of scientific and market integrated agriculture. It is interesting to note that along

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with appeals to personal gain, though brief, the address takes a considerably overt tone in celebrating the upright nature of making a cash profit from one’s labors. For example, the address states that the farmer, through the help of information produced and spread by the society, will “create active capital out of matter now inert and valueless.” That is if they will just “increase [their] exertion” on the farm. In essence, making money by participating in the capitalist marketplace was a good and praiseworthy thing because, in agrarian thought, farmers were amassing capital the “right” way. That is, in a way that would ensure “economic independence for the bulk of the population and a rising standard of living” while simultaneously keeping farmers occupied (and as some scholars have suggested only allowing for a limited degree of socioeconomic increase) with a sort of improvement arms race with each other. Agrarianism was a way for the majority of the population to enter the market and in a sense modernity, yet still have farmers as a guaranteed labor force to feed the market because they eventually would buy into the promised economic, social and moral benefits of commercial agriculture. By convincing farmers to increase the time, money and labor they put into their practices, they could compete with others following the same program thereby contributing to an agrarian form of disenfranchisement similar to those industrial workers as described workers by E.P. Thompson.89 Agrarianism told farmers that their divine connection to nature, ownership of land, scientific practices and dedicated labor would save them from such a fate. Commercialization was America’s alternative route to industrial power, profit and stability that industrial nations such as England found. Even if the advertised potential of

commercialism was not fully met, improvers strongly implied a farmer could be consoled by his improved character.\textsuperscript{90} State-level benefits discussed in the address include things like increased railroad cargo, tolls and a general sense of pride from competing well against other states. “It needs no argument to prove, that if the farming interest is permitted to languish, every other industrial pursuit will exhibit corresponding signs of decay.”

One full page of three in the address summarizes the advancements made by the states of New York, Ohio, Maryland and Virginia. Intrastate competition was one of several causes listed for why farmers should adopt scientific agriculture. More pedantic calls for improvement certainly came out of this period and though this document was made with the intent to excite immediate action, it demonstrates a new level of determination by improvers to use the stick of fear because clearly, the carrot of promises and practicality had not worked that well. The language in the document is blunt and slightly scolding. The authors claimed that it was a “surprise among enlightened farmers” from other states that Pennsylvania, which was “essentially agricultural”, could “not yet boast of a state [agricultural] institution.” These states were not as “favored with natural resources” but still “keep[t] pace with the times, in advancement of their agriculture” and it was baffling to the frustrated improvers in Pennsylvania. The authors also claimed the situation was “a cause of regret to many of our citizens.” New York’s agriculture is put on par with its “mercantile community” thanks to her state and local agricultural societies, which are supported by the state government. These societies “stir up the energies of her farmers to compete successfully,” and her recently wild, western positions

\textsuperscript{90}Appleby, "Commercial Farming and the "Agrarian Myth," 845.
have been tamed and settled with “wealthy, enterprising yeomen” who can through taxes maintain the “character and credit” of the state. Pennsylvania, it is implied, had the same potential through its large size and key international port in Philadelphia to reach a similar level of competence. Its lethargic farmers just needed a push in the right direction. Ohio made similar “liberal provisions” for state and county societies and was fast catching up with New York; all within less than five years. Maryland and Virginia have also recently granted funds for agricultural societies.

The address blamed the legislature and farmers for the “… apathy…that seems to paralyze” Pennsylvania. The address authors also claimed that bad roads, lack of railroads and scattered population meant slow communication could no longer be used as an excuse for the limited support of agricultural societies. Now, only people and their indifference stood in the way of change. To support these claim authors of the address cited extreme apathy of the legislature to deal with any agricultural topics, even in committees designed for that purpose. They were “so absorbed” in politics that they had “no time to look into the condition of the patient and unobtrusive farmer, upon whose drudgery” the legislature relies on for its state budget. In regards to the remaining blame, “However obnoxious the legislature is…it applies with tenfold force to the farmers themselves who never, by say combined effort, attempted to place themselves in the position which of right they should occupy.” The PSPA members did not mince words, claiming that since the farming class was easily the largest, “…it is plain the farmers are to blame, if their interests are neglected” because they failed to use their votes as leverage. The message ends on a self-empowering note stating the “remedy” is in
farmers’ hands and calls each county to send delegates to Harrisburg, the state capital, to organize a list of demands for the government.

Though on the harsher side, such pronouncements were not unusual, especially for the agricultural press which will be discussed in chapter two. The long decades of frustration for PSPA members’ idea of “better” being delayed in the state is evident in the text. Yet, for whom a system of agriculture more deeply entrenched in the market and science benefited was not clear in the minds of everyone at the time. The above statements by societies blaming farmers were a risk. As can be seen here, the blanching of farmers is worded most precisely. Farmers are criticized for their apathy in sticking to the old ways, but also presented with “the” solution and thus squeezed into a narrative where they become either the villain or hero of their own story, depending on their decisions. Improvers pushed farmers into a dichotomy; open up to different methods of farming and ideas about farming or be pushed put all together. When farmers were encouraged to either improve their lands at home or settle territories in the west, they were also helping to slowly feed the new economic system that was geared to increased production from fewer people. Improvers scoffed at those who emigrated. First out of fear of their own state losing its citizens and society and second out of notions that simply picking up and moving to more fertile soil was somehow cheating the system and gaining wealth “too easily.” It was similar to the way improvers often viewed industrial capitalists who unfairly became wealthy through cheating their factory employees.

Nevertheless, both forms of agriculture were based on subjugating nature for material gain. When the PSPA wrote their address, they were deeply frustrated their state was

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91Appleby, "Commercial Farming and the “Agrarian Myth,”” 849.
missing out on a host of opportunities, both real and contrived. Their central message then was that making money for the sake of making money was ok. In fact, it was praiseworthy. In agrarian rhetoric, ensuring freedom and prosperity for yourself meant ensuring freedom and prosperity for others. Bourcier notes that in nineteenth agrarian thought, the wealth was a “mark of God’s grace and natural consequence of …private virtues of frugality, industry, economy, prudence, order, tranquility, moderation, sobriety, diligence and self-discipline.” From this

“…the rise of capitalism was grafting a new meaning of public duty onto beliefs of the classical republican agriculturalist. The traditional concept of public virtue, involving Spartan subordination of self-interest to the greater common good, was at this time assuming a more contemporary definition that placed a high priority on productivity on the enterprising citizen.”

When the PSPA members wrote their address, they were not simply seeking to get farmers to say they wanted a state society, but to change their very definition of what was good agricultural practice and what agriculturalists valued.

The call for a convention to establish a state-sponsored society by the PSPA was successful. The society got the funding they requested from the legislature to form the Pennsylvania State Agricultural Society (PSAS). The convention invited delegates from all over the state and met at the end of January in 1851. They had been appropriated $2,000 per annum by the end of March the same year. Additionally, the legislature authorized the treasurers in every county to appropriate $100 per annum for county-level societies. The constitution and adjoining statement the PSAS sent to the legislature asking for funds was much less explicit on their goals as compared to the Philadelphia

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92Bourcier, "In Excellent Order," 560-561, 562, 564.
Society. The outline of what the state-society hoped to accomplish was generally understood by farmers, thanks to the several decades work already done by the PSPA. For example, the only mention of what the state society was hoping to achieve in its constitution was to “improve the condition of agriculture, horticulture and household arts…” No appeal to the semi-divine nature of farming, its ability to sustain and stabilize families, states and whole nations, no warning bells of exhausted soil fertility or mass emigration of Pennsylvanian’s west or even a general throwing about of terms like “prosperity” and “wealth.” Sixty plus years of the PSPA and agricultural press advocating for agricultural improvement made the arguments used in the movement common knowledge to a significant degree. The accompanying statement to legislatures used more of the usual rhetoric of the movement, but not forcefully. Less than two pages, the document stresses the “unselfish action” of the convention attendees, from every corner of the state, who were only “devoted to the best interests of the commonwealth.” They were certain their “practical and useful art” would bring “prosperity” to all in the state. They felt “led by a spirit” (presumably the Holy Spirit of the Christian faith) and it would inspire them until their “praiseworthy scheme” “will be crowned with success.” Perhaps also, the recent actions of legislatures in New York, Ohio, Maryland and Virginia to support agriculture through funded societies and agricultural boards prompted Pennsylvania to join in. The statement explicitly called on the Pennsylvania legislators to consider these states and the advantages they had gained through supporting agriculture.

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They wanted “to give Pennsylvania the dignified and commanding position designed for her by nature, pointed out by the unerring finger of Providence.”

The legislature agreed to the funding on the conditions that each year the society gives a detailed account of their spending and that the legislature could rescind the appropriation at any time. County-level society presidents were also charged with giving a yearly summary of expenses to the PSAS. Membership in the state society, as determined by the constitution, included a $1 per annum fee or $10 for a lifetime membership. The society recorded approximately 2,000 members statewide in the first meeting minutes in 1852. All (at least all white males) were encouraged to join and could do so by notifying the society and signing the constitution. Executive positions in the organization included the usual ones such as president, vice president, secretary and treasurer. Unique positions included a correspondence secretary, chemist, geologist and librarian. The correspondence secretary and librarian emphasize the premium placed on spreading and collecting knowledge from others. The duty of the correspondence secretary was to “invite correspondence from Pennsylvania or elsewhere, especially in foreign countries.” He was also required to read the correspondence at each meeting to those gathered and keep in regular contact with other states’ societies “for combined and mutual action” and keep track of the results of experiments. The librarian was in charge of managing all the society’s printed materials. This included books, journals and pamphlets. He was also responsible for “curating to preserve seeds, implements or whatever property” the society owned. It was common for agricultural societies and their

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members to gift others in the movement copies of their published works, seeds, books and other items useful for improvement. For example, the eminent English agriculturalist Arthur Young gifted the PSPA what part of his forty plus volume collection, “The Annals of Agriculture”, in 1791. The duties of the chemist and horticulturist were not listed in the constitution. Presumably, they gave advice to the society on conducting experiments as well as to anyone who approached the society seeking guidance. The constitution also took a jab at very early societies, that they were full of aloof armchair farmers and required ⅞ of the executive positions in the new society to be filled by “practical agriculturalists or horticulturalists.” The long and often leveled critique of elitism was a blunder the PSAS did not want to repeat as such for it could undermine their authority and hinder their mission of reaching and influencing every farmer in the state. The PSAS also made efforts to establish links with the agricultural press by encouraging its members to subscribe to the “Pennsylvania Farm Journal” (1851-1855) published in Lancaster. Whether this journal was an independent body, partially or wholly funded by the society, remains unclear. It was “for the present adopted as the organ of the state society…” Given the early society’s small budget, complete funding for all the aspirations seemed unlikely so they encouraged members to contribute to it by asking for or offering advice through correspondence and “us[ing] his influence to extend its circulation among his neighbors.” The society also ensured their meeting minutes were published in two more Pennsylvania based agricultural journals printed in German.

Considering the high percentage of German heritage and speakers in the state, including

95Philadelphia Society for Promoting Agriculture, Minutes of the Philadelphia Society 1785-1810, 72.

them in the movement was essential to making the large-scale changes to farming the society desired.

A certificate for best specimen of animal oil painting awarded by the Pennsylvania state agricultural society at the 1857 annual exhibition.

There are no known records that show Ayres joined an agricultural society though he had ample connections and opportunities to join societies in Pennsylvania. The first society in Centre County was founded in 1824 in Bellefonte, the county seat. The society seems to have disbanded after several years as many did in the first wave of societies in the eighteen-teens and twenties.  

It was reformed in 1851 probably in response to the

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97 Ron, “Summoning the State,” 352.
formation of the PSAS the same year. The first report by the Centre County society to the PSAS (as mandated by the legislature) in 1853 was brief but positive. President George Boal’s opening sentence boasted the society had 350 members and their quarterly meetings were “well attended by farmers and members generally.” Boal also reported that the society’s second annual exposition was held near Bellefonte. He stated “Horses, cattle, agricultural implements, household manufactures, agricultural productions &e., were highly credible to the exhibitors” with approximately $292 given away as premiums. The event was “well attended by farmers of Centre and surrounding counties.” Boal ended the letter reassuring the state society that he felt his society was “established on a firm basis”, meaning it would not wither away as so many societies had done before. Such statements would have made any improver in the state breathe a sigh of relief that their long-held dream of widespread interest in scientific methods was taking root. Ayres himself knew at least one member of the Centre County Agricultural Society, Stewart Lyon, his brother in law. Ayres recorded a visit from Lyon and Bond Valentine in his journal. Bond was the brother of Stewart’s wife, Anne. Incidentally, Anne’s sister married Evan Pugh, the first president of Penn State and one of the most well trained (and few) agricultural chemists in the United States during the period. Ayres had direct links with the state society as well. His uncle, George Bucher was a lifetime member, a long-time officer and the first secretary of the PSAS. George came to visit

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Ayres at his farm in Centre County on several occasions. Given Ayres many efforts to research methods and improve his practices, crops and animals, their conversations doubtlessly included talk of new farming practices during George’s visits. On one occasion Ayres recorded “we dined yesterday with him [George] today we rode around looking after corn planter.” Ayres may also have been acquainted with a young James Beaver, governor of Pennsylvania (1887-1891) and Penn State president (1906-1908). Ayres records going to dinner at his father in law’s mansion and “Gen. Beaver” being in attendance. Beaver worked as an attorney under a fellow attorney, Penn State trustee and gentlemen farmer from Bellefonte Hugh McAllister. McAllister was one of the founders of Penn State along with Frederick Watts, who was also the first president of the PSAS. Beaver would later become McAllister’s son in law and a trustee himself. Ayres was connected to several heavyweights in the scientific movement in Pennsylvania. The 1869 annual report from Penn State noted that agriculturalists who desired the lengthy, technical reports on experiments conducted by the college would “minutely examine them.” “But as the general reader and many farmers may not have the time or inclination to undertake that labor…” the reports were also presented in synopsis.


102 On a serendipitous note, the author of this work lived on Gen. Beaver’s farm in Bellefonte from birth until age two. It is located less than .5 miles from the McAllister-Beaver House, Bellefonte, Centre County, Pennsylvania, National Register #001635 and probable law office of the two men. Both buildings are within two miles of the Bellefonte court house, the county seat.


The movement had not attracted everyone, but the sources make it clear that Ayres was not alone in his activities in the area. In 1860, Centre County Agricultural Society reported the state declared there was “lively” interest and “spirited discussions” among its members. Boal claimed members were “anxious” to bring their livestock up to the “standard of excellence” as well as all of their farming efforts. Even though not every farmer was in on the “spirited discussions” happening at the Centre County society, the network of reformers was growing into a strong, healthy body. With it, the ideas they subscribed to grew stronger too.

The most popular method used by the agricultural society to draw in as many citizens as possible were agricultural fairs. According to historian Fred Kniffen, agricultural fairs in the United States really began in the eighteen-tens. They were meant as primarily as an educational event, but entertainment elements were added over time. In general, reform movements of the era sprang from middle-class Americans who wished to fix the flaws, real or perceived, of those below them. Some scholars have noted the classist overtones of some agricultural reform rhetoric. The hope was that those who needed to be “fixed” would learn by example. The thinking was this “emulation” of praiseworthy things was the “logical” outcome of coming into contact with those

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things. In the case of agricultural improvement, the notion of freedom was directly linked to a person’s ability to own property and protect it. A farmer may build a fence to keep animals in a pen and out of his fields. The ability to put up the fence and maintain sovereignty over what was inside of it stated to the world, “This is mine. I am not dependent on anyone.” What fair organizers wanted was the fairgoer to first admire, say, the new fencing technique shown at the fair, but then also go home and build his own. The fence would make statements about his freedom, orderliness and refinement and ultimately make him a profit from the work it did. Other objects were also said to symbolize georgic traits such as frugality, hard work, order and gentility. Some fairs were grand events but many were humble affairs where rural people showed off their best livestock, implements, crafts or housewares. The third fair held by the Centre County Agricultural Society included awards for the best stallion, best sow, best maple sugar and best plain pair of shoes. Fairs were a product of northeastern states and appealed to small, prosperous, yeomen. Fewer fairs were held the deeper south one went. Kniffen concludes that planters did not have the zeal for societies and improvement like northerners tended to. Considering the central rhetoric of improvement eagerly sought the democratic improving a farmer’s social, economic and moral standing in society, it is not surprising that a society based on strict hierarchies such as the plantation south would be hesitant to wholly endorse the free and open access to empowering knowledge. Northern farmers were hoping to demand equal respect as any other citizen. They were increasingly willing to listen to commercialization rhetoric that said they could earn equal


110 Linn, History of Centre and Clinton Counties, 66.
respect by social and economic betterment. Fredrick Watts, the man who effectively spearheaded the effort to establish Penn State, wrote to the Pennsylvania governor in 1853 that “farmers require education to place them in that rank in society where they are entitled to stand.”\footnote{Pennsylvania State Agricultural Society. \textit{Report of the transactions of the Pennsylvania State Agricultural Society}, 8.} In the context of the address, Watts was arguing for an agricultural school. However, the agricultural fair was an important educational tool for men, women, young people and children alike. The fact that farming had long demanded familial labor and cooperation meant the inclusion of every family member in fair meant a diverse group of people were reached rather than just adult males were reached by georgics. but also followed farming traditions long in place.\footnote{Sally McMurry, \textit{Families and Farmhouses in nineteenth-century America: Vernacular Design and Social Change} (New York: Oxford University Press, 1988), 56-57, 66-70.} All members of the family should, in the ideals of agricultural societies, be exposed to objects, landscapes and ideas worthy of emulation when they go to the fair. Once they return home they could emulate on their particular sphere on the farm.

Historian Wayne Caldwell Neely argues that rural people were enthusiastic about fairs because land use in the United States was different than in the old world. Populations in the new world were spread farther apart.\footnote{Wayne Caldwell Neely, \textit{The Agricultural Fair} (New York: Columbia University Press, 1935), 12.} In the old world, the central village society with fields set away from buildings offered more interaction. On autonomous farms in nineteenth-century America, making time to leave home and work was often difficult. Once people did get together, leisure activities that took the form of friendly competition allowed for possible social and economic benefits. The old-world
festival and market days had for centuries focused on participants bringing farms products together. Consequently, fairs were almost a readymade stage for improvers to impose their rhetoric on fairgoers. Everyone at fairs could practice the core activity of commercialism, competition. Because the production of the competing goods was something farmers were already doing, the investment and risk costs were very low. When a farm wife won a cash prize and social accolades for her delicious butter, perhaps she would think about her work and her family taking the risks of entering the market more positively. Neely states that the fair intended to “capture public attention and support [of georgic ideas] rather than direct selling [or in this case, immediate conversion]…”114 On a grand scale, fairs promised the ordinary, rural citizen the possibility of cash and approval from external and internal voices. Ron states that by the mid-nineteenth century, farmers were organizing themselves enough to demand state support. Ron has also convincingly argued that the social activities involved in fairs and societies helped northern farmers form a distinct class.115 His conclusion about class formation means that farmers were not only acted upon by nineteenth-century reformers but also took opportunities to act upon the rhetoric around them and use it for their advantage. The address by the PSPA calling farmers to insist on governmental support for a state society in 1851 is a good example.

Ayres himself certainly took opportunities to participate in society organized events. He attended the 1865 state agricultural fair in Williamsport, Pennsylvania. The journey from Rock Springs to Williamsport is approximately 77 miles. On September

114Neely, The Agricultural Fair, 12.

115Ron, “ Summoning the State,” 349.
Ayres wrote that his father in law and two brothers-in-law came to his home for dinner and to plan their trip to Williamsport. The group left for the fair on the 25th from Bellefonte “about 10:30 and arrived abt [about] 3 pm.”\textsuperscript{116} They stayed at the new “Herdic House”, a hotel owned by a state society member and Lycoming County Agricultural Society representative. Ayres’ Uncle George was at the time still treasurer for the PSAS and was also at the fair. Ayres and his family members attended the first two days of the event, where Ayres recorded “meeting many acquaintances” and finding the “livestock poor, implements fair.” The fair functioned as a prime place to be further exposed to improvement ideas. Given his uncle’s position, getting introductions to other improvers for the purpose of swapping information was no doubt easily facilitated. Ayres made a list of implements “to remember” including a fanning mill, stump extractor, clover seed harvester, Morrison corn planter and two sheep breeds.

Interestingly, Ayres’ entry concerning the corn planter reveals a thoughtful weighing of which implements to buy and which to pass up. In the spring of 1864, Ayres employed local women to help plant corn, in addition, using his mechanical planter. Other journal entries indicate he had problems finding enough hands in the busy seasons.\textsuperscript{117} On several occasions, he would “ride out in search of hands.” Sometimes, he could not find anyone, on other occasions neighbors would promise to help but never show. It is likely he was hoping another planter or two could help alleviate his frustrations of being shorthanded. Implements came with their own frustrations, but he did not need to worry about them not showing up for work. Doubtlessly, another

\textsuperscript{116} Ayres, Journal, August 23, 1865, August 25, 1865, August 26, 1865, August 27, 1865, August 28, 1865.

\textsuperscript{117} Ayres, Journal, June 14, 1864, June 16, 1865, June 18, 1865.
consideration on Ayres’ mind was the expectation to house and feed day laborers. He noted during the wheat harvest in the summer of 1865, that the wife of his full-time hand, Jesse Markle, was going “crazy” from “boarding” the extra laborers. The Markle’s lived in Ayres’ four-room tenant house. The Markle’s had moved in the previous April with “a haul of children.” Perhaps Mrs. Markle was expected to help provide food and shelter the hands there for harvest and the added work was unwelcome. The hands may have stayed in Ayres’ house, but an account of another full-time employee living with the Markle’s makes it seem unlikely they stayed with Ayres. The employee was “miffed” that he had to live with the family in the tenant house.\footnote{Ayres, Journal, July 7, 1865, April 4, 1864, April 11, 1865.} Ayres’ house was quite large. He would have been able to comfortably accommodate an extra three to five people as opposed to Mrs. Markle with her many children. In a year’s time, Ayres would fire Jesse Markle “on account of his vile wife.” A week earlier to this entry, Ayres wrote “Mrs. Markle. The Virago let loose her tongue this AM.” Jesse was told to “remove his family from the farmhouse as quick as possible.” No further explanation is given for his dismissal of Jesse, though it is one of the rare instances Ayres expresses his thoughts or feelings. Back in April of 1864, Ayres recorded in his journal he was going to see the same type of planter he saw in the fall of 1865 fair “in operation.” One of the same brothers in law who went to the fair with him tagged along. He found it “not so reliable as Wolf’s Patent” \footnote{Ayres, Journal, April, 13 1865, March 31st, 1865, April 17, 1866, April 10, 1866.} As mentioned before, Ayres could afford to purchase the Morrison planter. The Wolf’s Patent planter he bought cost him $21.50 and was probably comparably priced to the Morrison. Ayres further showed a concern for the
agrarian ethic of thriftiness when he noted in the spring of 1866 that he saw yet another
Morrison corn planter “on sale at Millers” [store]. On no other occasion in his journal
does he mention an item being on sale. It seems that repeated exposure to the Morrison
brand, a good sale and employee troubles made Ayres reconsider his purchase of the
planter. All that to say when Ayres considered what corn planters to buy, he was not only
considering the cost and reliability of the machine, but also the cost (financial and
emotional) of human labor and their reliability. When Ayres met with fellow farmers
interested in new technologies at places like the state agricultural fair, their conversations
helped him work through complicated questions that arose when farmers began to believe
the rhetoric that efficiency, practicality and increased production found through science
would not only ensure material prosperity, but also individual and corporate morale uplift
due to their inherent virtue. When his neighbors saw Ayres’ success, so the rhetoric went,
they were sure to emulate him and bring the commercialization movement towards
fruition.120

The transition to commercialization included agriculturalists and non-
agriculturalists alike. The gentlemen farmers and the societies they started were efforts by
gentlemen farmers to convince practical farmers to put more time and money into
production. They proffered to farmers as a means to find greater financial and social gain.
However, yeomen were cautious, even skeptical. Certainly, some of the time they really
did know better. It took decades of threats and promises to bring yeomen around. The
promise of profit was nice, but far from the only motive used by improvers. Moral
improvement for the individual and society was promised to those who pursued

120Ron, “Summoning the State,” 351.
commercial agriculture by encouraging traits in the farmer like efficiency, freedom, hard work and curiosity. For example, the rhetoric claimed a farmer should be curious to learn new methods and be efficient in the execution of his work. The resulting increased financial profit made from more efficient methods would in theory not only helped ensure his freedom from corruption and foreign domination, but also the freedom of his state and nation. Farmers’ control over the land, means of production and thus a significant portion of capital, ensured a broad agrarian base upon which to build a democratic society. He could produce a lot for a little, meaning non-farmers who consumed the products paid less or so went the rhetoric. The degree to which the idealized scenario above happened and whether the motives behind it were as genuine as reported are debates for future scholarship.

While the improvers waited for farmers in Pennsylvania to come around to their new definition of a good farmer and good practices, farmers at times grew tired of the glorification of their job. It was hard work and hardly glorifying most of the time. Still, improvers kept spreading the notion that their system would make life better for consumers and producers by holding society meetings, trading knowledge with others, broadcasting their knowledge in print and holding fairs in attempts to garner more converts. However, their sometimes-superior tone, lack of funds, slow and inefficient travel and communication and at times plainly useless “science” allowed apathetic farmers, many of whom were mostly content, to keep doing what they were doing, which slowed the adoption of commercialization rhetoric. But events like fairs helped normalize that rhetoric. Fairs effectively removed the risks of competition of the real marketplace and in a way let farmers and their families play risk in the pretend marketplace of the fair
competition. While there, farmers also heard pro-improvement speeches and exhibits and began to form a distinct class identity. When someone already interested in the movement like Ayres went to a fair or society meeting, they could give and get help from others in the same struggle for virtue and thus acceptance, power and stability. Agricultural societies and fairs contributed greatly to spreading georgic rhetoric in Pennsylvania. However, the agricultural press made the rhetoric truly popular and played a large role in the changing definitions of agricultural virtue in the minds of farmers.
Chapter Three:


Ayres wrote in his journal in December of 1865 “American Agriculturalist _ sent 5 dolls & 20 cents to Am. Agriculturist for subscription for 1865 for self, John Kreider, B Plumstead, Jones, Le Porte & A. E. Clemson.” His entry is evidence of his extensive participation in disseminating agricultural knowledge, which was the foremost achievement of the agricultural press. The press enlisted the help of men like Ayres to persuade practical farmers towards the cause of agricultural improvement. Ayres followed this advice and created clubs for two of the largest farming periodicals of the era, the *American Agriculturist* and the *Country Gentlemen*.\(^{121}\) Between the two journals, Ayres purchased sixteen subscriptions for others plus one for himself. Recipients included neighbors, friends and two of his employees. Notably, one of the employees was his full-time African American employee, Benjamin Plumstead.\(^{122}\) The movement towards commercial agriculture was common knowledge by midcentury in large part thanks to the agricultural publications like the journals above, newspaper articles, books and reports. Some of these materials were written by the government, some by individuals and others by agricultural colleges and societies. Even with all these materials available from various sources, comprehensive adoption of scientific methods by Pennsylvanian farmers by the mid-nineteenth century had yet to be realized,


\(^{122}\) Homan, *Pennsylvania Furnace Homecoming*, 12.
something the network of individuals who contributed to the agricultural press wanted to change. The following chapter will focus on the continuation of the employment of georgic agrarian rhetoric that inspired gentlemen farmers to organize agricultural societies and fairs in the hopes of making scientific agriculture gain more widely appealing. This will be done by analyzing printed materials that contributed to strengthening the acceptability of scientific practices in the eyes of the average Pennsylvania farmer. A wide variety of printed materials will be used as evidence, but a larger portion of the analysis will pertain to agricultural journals which had a particularly strong impact. The impact of printed materials will be addressed by examining three gaps in the present scholarship on the agriculture press. The first is the misattributed function of the press as a reflection of the belief of an agrarian myth.\textsuperscript{123} The messages in the press claiming the supremacy of agriculture over all other occupations has been considered by many scholars as proof of America’s “sentimental attachment” to a rural past.\textsuperscript{124} However, it will be argued here that the abundance of pro-farmer sentiments in the press were not an indicator of belief in the agrarian myth, but rather a lack of belief in it. Second, historians have so far neglected to thoroughly explain what was actually going on in the press, if it was not the agrarian myth in action. The argument presented here is that the agricultural improvement supporters who financed and printed these materials hawked the agrarian myth precisely because the vast majority of farmers if they were

\textsuperscript{123}The agrarian myth is a concept widely proclaimed and accepted by historians in roughly the first half of the twentieth century. According the Richard Abbott, it holds that Americans believed that farmers “stood at the head of society”, were the primary producers of wealth for the country, the first to defend the nation in war, and provided the nation with religious and moral virtue upon which America was based. It was a “mass creed” “to which authors, politicians and journalists were obliged to pay their respects.”

even aware of the notion that agriculture was the “most noble” of all employments, knew that the myth was just that: a myth.\textsuperscript{125} Farmers and supporters of scientific methods were well aware farming was not truly held in high esteem. Farmers also knew as farming had yet to complete them personally, economically and spiritually as georgic rhetoric proposed. When practical farmers repeatedly balked at the supercilious language contained in the rhetoric, this is why.\textsuperscript{126} Yet by using georgic rhetoric, those who already supported scientific improvement saw an opportunity to prove agriculture was indeed worthy of respect as a guarantor of independence and refinement. These supposed virtues of agriculture had the task of broadly altering the image of farming as well as specifically convincing farmers that a scientific approach to improvement was in line with the georgic ethic. What improvers attempted to say to farmers through the press was, “No, agriculture really is virtuous. It really will make you fulfilled, wealthy and sublimely happy. You are just doing it wrong. You must use science.” While not all of the rhetoric was bought by farmers, the press nonetheless made improvement ideas widely available. Slowly and surely over a long century, improvers got farmers to believe that nonscientific, non-commercial oriented methods were against their best interests. Lastly, scholarship has thus far focused on who reads agricultural journals, their editors and the boosterish messages the publications contained. There is very little scholarship that gives concrete examples of how the agricultural press functioned in the lives of communities and

\textsuperscript{125} Abbott, "The Agricultural Press Views the Yeoman," 35-37.

\textsuperscript{126} Such as one speech given at the 1859 Northampton county fair run by the local society that asked “What occupation so more fraught with happiness?” Pennsylvania State Agricultural Society, Report of the transactions of the Pennsylvania State Agricultural Society for the years 1861-63, Vol. 6 (Harrisburg: State Printer, 1863) 419.
individual readers who consumed the materials. The following work will examine how efforts to create a specific standard of agrarian virtue was being pushed by the press is evident in the life of Ayres, his community and Pennsylvania. These ideas influenced his financial and personal actions. He altered the landscape around him in response to them. As introduced in the last chapter, this rhetoric said that the new standard of virtue was based on science and self-interest; not suppression of individual desires for the collective good. Farmers were told there very human desire to have equal or greater esteem with all others was no longer something to repress as they had been doing for so long, in a comparatively less individualistic societies of the old world. Ayres’ story, told through the medium of the agricultural press, offers a clear picture of how prescriptive advice was put into action in an attempt to make agriculture be seen as virtuous for harnessing the bounty of nature on behalf of the nation.

The work initiated by the late eighteenth and early nineteenth-century agricultural societies and gentlemen farmers was picked up in earnest by a distinctly agricultural press starting around the early 1820s. The rhetoric of the movement became democratized through increasingly easier and affordable access to printed materials and popular due to improvers abandoning their often heavily technical, longwinded and aloof publications. Subscription to journals or newspapers with agricultural content came within the reach of most farmers. However, not every average farmer from the 1810s to 1870s followed the prescriptive methods in publications. But there was a definite increase in the number of farmers who became liminal believers in the new system. This work,

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done by the press, laid the foundation for farmers to become true believers in the late nineteenth and early twentieth centuries. The agricultural press deserves a significant amount of credit for this shift toward what was considered virtuous agriculture.

Farmers in Pennsylvania by the 1820s were hounded by improvement messages aimed at them from a variety of sources. This included newspapers, journals, books, reports by state and federal governments, reports by educational institutions, geological surveys, reprinted speeches and even images of animals, machines or imagined representations of a bucolic paradise accompanying the text of these documents.129 Historian Paul W. Gates states, “no other economic group in the early nineteenth century was the recipient of so much free advice, practical as well as impractical.”130 Even Ayres is recorded as having subscribed to two of the most popular, exclusively agricultural journals of his day and he also sought out agricultural knowledge and news through other sources. For example, he kept an eye on commodity prices listed in the Daily Evening Bulletin (Philadelphia) and the Daily Commercial (Pittsburgh).131 Ayres used the prices from these newspapers as the basis for selling grain to his neighbors and employees. He also subscribed to at least one local newspaper, the Central Press (Bellefonte), which listed local prices for grains, butter, lard, eggs, bacon and plaster.132 The Central Press published favorable reviews of the American Agriculturist and admonished their


130Gates, The Farmers’ Age, 338.

131Ayres, Journal, August 4 1865, April 5 1865, October 10 1865, August 29, 1865, August 16, 1965.

132Ayres, Journal, September 9, 1865, September 15, 1865.
readers also subscribe to the journal. Ayres bought at least two instructive farming books. One was titled, *Tobacco Culture*, which he purchased through the *American Agriculturalist*. He also owned a book titled “edited by J. S. Skinner”, likely, “John Stewart Skinner” editor of several agricultural journals and author of several agricultural books. Ayres was very likely referencing a book by Skinner, *The Book of the Farm; Detailing the Labors of The Farmer, Steward, Plowman, Hedger, Cattleman, Shepherd, Field-Worker and Dairymaid*. Skinner recommended a remedy of ginger and Epsom salts to help ewes expel their retained placenta after lambing. Ayres used the remedy on his cow “Daisy” who had trouble expelling her placenta. Ayres lists buying other books in his diary but does not give the titles. Finally, Ayres records receiving the yearly reports from the United States Commissioner of Agriculture in 1865 and 1866 in the mail. He gives no further comment on them but the reports are quite comprehensive on every aspect of agriculture. The 1865 report, for example, is over five hundred and seventy pages long with over thirty illustrations.

Gentlemen farmers in the early republic led the charge in using risky new methods and creating agricultural societies in the hopes to test, compile and redistribute scientific knowledge. Yet their hope for widespread redistribution and thus the participation of every farmer in the state into the movement, was difficult. Some of the

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133 Henry Stephens and John Stuart Skinner, *The Book of the Farm; Detailing the Labors of the Farmer, Steward, Plowman, Hedger, Cattleman, Shepherd, Field-Worker and Dairymaid* (New York: C.M. Saxton, 1855).

134 Ayres, Journal, May 19, 1866, May 20, 1866, May 21, 1866, May 22, 1866.

135 Ayres, Journal, March 31, 1866, June 13, 1864.

136 Ayres, Journal, March 15, 1866, April 1, 1865.
difficulties included financial constraints, overly complicated writings, uninterested farmers and poor transportation infrastructure. The Philadelphia Society for Promotion of Agriculture (in the 1790s-1810s) had to put virtually stop their publication of materials due to cost and Pennsylvania State Agricultural Society was forced to ally with separate printing organizations to get their materials published.  

Events that threatened American's independence such as the War of 1812 and financial panics in 1819 and 1837 softened resistance to scientific farming methods. The widespread “improvement fever”, broadly from the 1810s to 1840s, propelled states to heavily invest infrastructure improvements which further incentivized farmers to access the market, which had become easier and cheaper.  

For example, By 1860 Ayres’ generation had experienced throughout their lives, the hailstorm of the Communication Revolution (telegraph), Transportation Revolution (improved roads, canals, railroads) and Information Revolution (newspapers, magazines). These combined to greatly change the culture of the United States.  

Further, territorial acquisitions of just about everything west of the Appalachians significantly changed the geographical and economical face of the Early Republic. An interregional market economy became possible by the reduced time and cost of transportation. New markets were established with new people at a greater distance. These factors would play a key role in the conversion of American Agriculture from a means of semi-subsistence to a commercial

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enterprise. Cheaper transportation meant getting farm produce to the marketplace was more enticing as was the idea of greater access to manufactured or luxury items. Ayres regularly got packages of numerous, perishable items from the railroad station a few miles away. Packages included items like plants to transplant in his gardens like trees or strawberries (in one instance 500 plants at once!), crates of peaches and even pineapples. He sent the springs (to absorb the shock of bumpy terrain) to his farm wagon all the way to Philadelphia (a journey of about 200 miles) by rail because they kept breaking. Said another way, larger economic and infrastructure circumstances made the risk of trying out new methods to produce for the market smaller, while also increasing the possibility of profit. These conditions made practical farmers increasingly willing to consider testing new methods and increasing their market integration. These conditions also had improvers eager to rekindle societies, fairs and publication efforts after the stall in the 1790s to the early 1800s. From this, a strong, distinct agricultural press was born.

Prior to the 1820s, widespread agricultural content was limited. In the popular press, it consisted of farmer’s almanacs and a small section in the back of newspapers. Newspaper coverage of agriculture was often filler when there was not enough content, like politics, for editors to cover every page. Agricultural content, slim though it was, still indicated an acknowledgment of the high percentage of rural readers. Not making at least superficial attempts to exploit their buying power would have been a poor financial decision. Consequently, much of the agricultural content in newspapers, journal and society publications was copied from other sources, such as library books and was not

141 Ayres, Journal, June 26, 1866, Smith, “Middle Range Farming in the Civil War Era,” 361
142 Ayres, Journal, November, 28, 1864, August 30, 1865, April 25 1865, April 24, 1866.
143 Marti. To Improve the Soil and the Mind, 125, 131; Gates, The Farmers’ Age, 338-341.
original content. The result meant such works were rather incohesive as a whole and readers got repeat messages. Gates concludes that for some readers this repetition of agricultural content was no doubt annoying. Not because the advice was not sound, but because a fair number of subscribers were already interested in improvement, as evidenced to their subscription and repeated admonishment to do general improvements was not helpful for those who were already doing them. In this way, the people who “needed” to hear the improvement rhetoric the most were not hearing it as much as improvers had hoped.

Ideally, when the press failed to reach farmers directly, they would be reached indirectly through other outlets like an agricultural fair or a neighbor. Specific discussions from farmers who had done trials themselves were highly valued and meant publications had access to essentially free, novel content. Cohen has argued further that farmers were more likely to trust content from their yeoman peers than content originating from editors or gentlemen farmers, whose direct experience in agriculture was limited. Farmer generated content was not only free but also substantially contributed to a publication’s authority because it was believed to more likely to follow the georgic requirement of rigorous, repeated observation. Authority was further increased when a publication from a society or private journal could claim their information came from their repositories of collected and curated knowledge gleaned from readers. The goal was to foster exchange between farmers. To that end, it was hoped farmers would be more productive and profitable. When a reader’s neighbor saw his or her success in fattening

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144 Gates, *The Farmers’ Age*, 344.

hogs or making excellent butter, they would be enticed to try new methods themselves. Content could also be overly technical, especially in early publications and in those by societies whose content was lifted unaltered from books. Repeated critiques that content was aloof and poor subscription to journals or newspapers aided in the content changing to being more readable in the 1830s and 40s. Reports by governments and agricultural colleges, in general, remained more technical than journals and newspaper coverage. For example, the Pennsylvania State Agricultural Society (PSAS) recognized the tension of publishing content that gave too many details and required knowledge of too much jargon, versus publishing content that was too general. The PSAS, no doubt aware of complaints of longwinded texts, wrote in its 1870 report on trials carried out at its three experiments farms, “The agriculturalist who desires all the information these very interesting reports afford, will minutely examine and carefully compare the several reports; but as the general reader and many farmers may not have time and inclination to undertake that labor…there is a synopsis.”146 As historian Alan Marcus has noted, agriculture in the nineteenth century was on “a quest for legitimacy” thus including minute equations used in a fertilizer experiment was essential to agriculturalists proving to the world their craft was worthy of the same respect of other sciences.147 Readers were to use their judgment to sift through which data was most important to them and what was not. New methods were integrated sporadically as it suited the farmer. Farmers, gentlemen and yeoman alike, applied new methods piecemeal not all at once. As mentioned previously, attempting to integrate a whole system, or rather a multitude of


147 Marcus, Agricultural Science and the Quest for Legitimacy, 21-26.
systems, at once would not have only been nearly financially impossible but was also financially reckless. Those who supported agricultural improvement understood (most of the time) this situation and the general hesitation of farmers that resulted from it. For those who published agricultural materials, this meant doggedly repeating statements meant to persuade readers scientific improvement was in line with the morally upright, georgic ethic even though it largely originated from the more elite end of society. If true, the many sources of agricultural knowledge were the means for mass education of rural populations on how to be acceptable through improved material and moral status.

Based on Ayres’ own records, he interacted with agricultural journals the most of the various forms of agricultural publications. The core mission of the press, particularly journals, was the education and persuasion of farmers towards science as well as rehabilitation of their image. In this way, the press attempted to educated farmers and non-farmers alike, with mixed results. A series of independent printers and editors who believed in the gospel of scientific agriculture began to publish entire journals dedicated to growing awareness about and supporting scientific methods in the 1820s.  

These journals were the center of the rush to give farmers advice. Most sources point to the 1812 journal *The Agricultural Museum* as being the first journal dedicated solely to agriculture in the United States. Like agricultural societies, most of the first journals of the 1810s only survived for a few years before going under. However, a second improvement wave in the 1820s led to the establishment of agricultural journalism in earnest. The demand for the practical knowledge contained in journals was quite real by

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midcentury, but so were reservations about it. An editor in 1821 expressed fear that the many agricultural journals would flood the market and cause his to fail.\textsuperscript{150} Still more journals came, readership flourished by the 1850s and agricultural journals had become part of the popular press.\textsuperscript{151} One member of the PSAS estimated in 1863 there were 75 journals, with one in “almost every state of the union.”\textsuperscript{152} He further stated the “immense increase in the number of journals…is striking evidence of a strong movement of the agricultural mind of the country in the right direction.” Agricultural journals that covered various topics did better in terms of readership until the last quarter of the century when publications had to become specialized into subfields like dairy or horticulture to survive.

The agricultural press assured farmers increased profits if they applied scientific methods to their labor. \textit{The County Gentleman} stated these values and their mission on their cover, advertising itself as a “journal devoted for the improvement of agriculture…and to elevation in mental, moral and social character and the spread of useful knowledge…”\textsuperscript{153} Farmers were promised that through education they could increase their social standing as well as their profits. Using a new implement like a thresher, planting flower beds for beautification or perceived high morals due to unrelenting industriousness, were ways a farmer could signal to his neighbors he was contributing to the advancement of himself, his community and his nation. Becoming educated in these new methods could offer a reprieve from arduous and at times

\textsuperscript{150}\textit{Lemmer, "Early Agricultural Editors,"} 3.

\textsuperscript{151}\textit{Bardolf, Agricultural Literature and the early Illinois Farmer,} 60.


\textsuperscript{153}\textit{“Cover, American Agriculturist} vol. 23 (January 1864).
damaging physical labor involved in producing food and fiber. To be sure, physical labor was honored in the press but had to be paired with a critical mind to benefit oneself and lead to communal improvement. Indeed, the notion that successful farming required a “weak mind, strong back” would be vehemently rejected.\textsuperscript{154} The mission thus alleged to farmers that education would raise their status through the complicated intertwining of more money, material goods and independence. All were key components of early nineteenth-century refinement and respectability. Publishers hoped to assure the public that farmers were interested in these ideals and prove that agriculture contributed to the improvement of society as a whole.\textsuperscript{155} These promises subsequently translated into a belief that spurred Pennsylvanians, particularly those who became advocates and practitioners of scientific improvement in agriculture, into action.

The core mission of the agricultural press was the education of farmers. However, a difficult issue accompanied the mission: a poor image of farmers and their work by society at large. Democratic notions of every citizen being worthy of equal esteem and breaking away from old-world ideas had been stated but not realized in practice. Education was achieved (over time) through the publication of the journals themselves as well as a robust partnership with agricultural societies and agriculturally focused schools. Many editors of journals were actually members of their local society.\textsuperscript{156} But the facelift needed by agriculture required a complete reversal in the way in which physical labor was viewed, by farmers and city folks alike. According to historian Richard Abbott, there


\textsuperscript{155}Cohen, "The Moral Basis of Soil," 351.

\textsuperscript{156}Abbott, "The Agricultural Press Views the Yeoman," 39.
was a general “anti-farm” sentiment in American society. One journal lamented that farming was viewed as a “vulgar” occupation and that “farmers were not welcome to the table of city capitalists.” In other words, some urban dwellers doubted that commercial agriculture could contribute to the strengthening of Pennsylvania’s economic and moral condition. City folk were not yet converted to georgic rhetoric which based the value of citizens on their ability to produce goods for others and thus remain independent. However, some urban dwellers did believe rural life and work was superior to that in the city. The *American Agriculturalist* featured the following quote from George Washington on its cover “Agriculture is the most Healthful, the most Useful and the most Noble Employment of Man.” But much of the “rural is good, urban is bad” debate seen in all types of publications of this period was fueled by underlying forces pushing and pulling the nation towards “improvement.” Scholars have previously taken the agricultural press’s tenacious proclamations of the value and virtue found in farming as a sign that everyone in the period must have believed the same. Yet Abbott astutely argues that many rural folks themselves saw their profession as lesser and even shameful. They viewed their work as primal and a result of the curse of Adam. Historian Donald Marti concludes that farmers thought of themselves as lesser too in the first three-quarters of the nineteenth century. Editors of agricultural publications had to “raise the estimation” a farmer had of himself as much as the esteem the public had of farmers. Abbott’s final conclusion is that rather than being a universal belief, “farmers not only failed to believe that agrarian myth; they were not even sure what [it] was.”157 Plainly, other forces were driving the movement of progressive farming other than a blind, uncontainable

enthusiasm for the gospel of agrarianism. Farmers eventually bought into commercialization but they did so at their own pace, though that was often too slow for most improvement supporters.

Those who believed that agriculture could propel the state to prosperity and power had to fight disparaging notions of rural people. Some scholars have said that rural improvement was just as much about “improving” rural people as practices.\textsuperscript{158} In a larger framework that valued republicanism and independence, agricultural work had its best chance to be valued if it claimed superior abilities to produce good morals and material wealth for a wide segment of the population. This is why attacking urban wage labor for creating masses of poor dependents in urban centers was one of the favored tactics of agrarianism. Power was in theory concentrated in the hands of a few wealthy industrialists. Farmers were reliant on these same people for their markets and very much wanted the consumer goods they produced. Rather than be snubbed as low class, menial and thus valueless to society, the press sought to convince rural and urban populations alike that the purest, truest forms of virtue came from the fountain of agriculture because it was “independent to a greater degree than any other” occupation.\textsuperscript{159} More than anything else perhaps the discussion shows a constant tension in the press. It purported the superiority of rural life whiles simultaneously telling rural people how they needed to be improved upon by asserting they needed to refine themselves in educational and financial terms. Abbott argues that a large function of the press was to make farmers feel


better about themselves though he fails to say why farmers needed to feel better. This negative image problem came from the dominant pastoral, rather than georgic ethic, present in agrarianism. The pastoral ethic glorified nature, as the georgic ethic did; however, it assumed humans interacting with nature had the luxury of whimsical, passive enjoyment and contemplation of nature (think David Thoreau) while others lower on the socioeconomic scale grubbed out an existence to support the contemplator. Yeoman farmers suspected the pastoral ethic because its fulfillment was essentially classist and required a social status they did not have. Nature then, at least in the pastoral ideal, excluded yeoman even though in reality the two were tied together in the most intimate terms. For farmers to be respectable, society had to abandon the pastoral and adopt georgic agrarianism.

The pastorally based improvement ethic raised real questions for practical farmers. How could they surrender their autonomy to a system of improvement that fundamentally devalued their labor? A system that would only accept them once they reached a place in life where they had the leisure to exist in nature solely for enjoyment? Was it even possible for them to make any social and material advancements for themselves in such a system? The answer was that it seemed very unlikely and rather undemocratic. Farmers could not reach full potential as contributors in the capitalist marketplace by following the pastoral ethic because it fundamentally denied the value of their ability to contribute to a democratic society. In such a pastoral ethic, their labor was only valued as a means to sustain those at the top of a rigid hierarchy. If farmers were to risk entering the world market, they needed motivation from another source of
Urban dwellers, in turn, needed to realize the value in the labor agriculturalists provided in order to accept them at the table.

In contrast to the pastoral, the georgic ethic of seeking active control of nature for the material benefit of mankind could fix both of these problems. It ennobled the labor of the meanest farmer, or so the rhetoric went. Agricultural journals’ mission of improvement through education sought to convince farmers looking for improvement that scientific methods did indeed support georgic ethics rather than classist pastoral ethics, which worked counter to the economic and social status of the farmer. Ideally, claims of scientific improvement would appeal to the self-interest of urban dwellers who desired improved material conditions themselves. Said another way, abundant and efficient production on the farm thus made an “escape of the tyranny of their social superiors” possible for the urban poor as well as farmers. At its core, the improvement movement did not wish to change what farmers did, that is the production of food, fiber and fuel. But rather the movement wanted to change how the work farmers did was viewed.

Furthermore, the poor image of farmers had to be addressed if their ability to contribute to state and national improvement projects was to be believed. Equally important to improvers was actually improving farmers and their work, not just the perception of those things. Those already on board with scientific improvement, like gentleman farmers or journal publishers, had to ensure farmers the methods they advocated were the best of all options and followed the georgic ethic. To these ends, farming journals, the most widely read form of agricultural publication, were highly

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161 Appleby, "Commercial Farming and the "Agrarian Myth,"" 845.
participatory in nature. Readers were continually encouraged to write in with their opinions, tips and feedback on methods advised by the journal. This served the purpose of spreading knowledge, but also allowed readers to cultivate the important nineteenth-century skills of civility and respectability they had been accused of as lacking. Before turning to specific examples of how the rhetoric of journals took shape in the real world, it is important to consider who read them and how many so as to better understand the nature of the rhetoric’s implementation. This will first be examined broadly in Pennsylvania then specifically in the life of Ayres.

A current core scholarly debate regarding the agricultural press is over the composition of subscribers. Were readers mostly elites who never or rarely did any physical labor? Were readers ordinary, yeoman farmers who labored intensively? Or were they like Bucher Ayres who possessed resources to devote to specialty projects, like grapes, but still took to the field alongside their employees? The significance of the debate here is that readership reveals the nature of the transition of agriculture to a commercialized system. Part of the answer lies in the period considered. As outlined above, readership, in both numbers and demographics, began small, grew and contracted again over the entire nineteenth century. Historian Sally McMurry shares an enlightening survey of readership during the general height of subscription numbers between 1839 to 1865. Her sample is taken from a county in central New York.\[162\] Around two-thirds of

\[162\]Several journals were published in Pennsylvania during this time period. However, based on comments from several Pennsylvanians at the time and a list made by Sally McMurry, none seem to have lasted more than a couple of years before failing. One member of the PSAS writing in 1865 lamented this fact and counted it “a burning shame” on Pennsylvania. The two journals Ayres read were published in New York. Pennsylvania State Agricultural Society, Report of the transactions of the Pennsylvania State Agricultural Society for the years 1864-1870, vol. 7; Sally McMurry, Serials on Pennsylvania Agriculture 1820-1945, accessed November 10, 2019.https://scholarsphere.psu.edu/downloads/3tx31qg591
subscribers, McMurry surveys were neither rich nor poor but lived comfortably. Ayres falls into this category. A significant portion, a quarter, of the readers came from the bottom half of subscribers when arranged from wealthiest to poorest. Very few readers were truly well to do. In nonfinancial measures, McMurry’s findings further support the present argument that improvement messages had to push a specific kind of ethic to be adopted by farmers. One claim in present scholarship is that journals were not read by “real” farmers, only dabblers; however, looking at McMurry’s survey, that is untrue. Most readers were farmers; even with those that held a second job, such as a lawyer or hardware entrepreneur, farming provided the majority of their income. Ayres’ life supports McMurry’s findings. For example, the main occupation during his life was as a railroad employee, yet we know he farmed full time for the ten years he was in Centre County. Tax records reflect the mixing of incomes and occupations. How he identified himself and how others perceived him, seems to have changed more than once. He was listed as a “farmer” in the local 1861, 1862, 1864 and 1866 Centre County tax records and yet in 1868 he was listed as a “Gentleman.” On the 1870 census, Ayres reported his profession as a “Civil Engineer.”

Many more subscribers in McMurry’s survey had occupations that were directly linked to agriculture such as merchants or stockmen. Less than 1/3 of the subscribers held exclusively nonagricultural jobs such as clergy or physicians. As partly indicated by the financial categories studied by McMurry, no group monopolized subscriber numbers

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164 1861 Tax Assessment; 1862 Tax Assessment; 1864 Tax Assessment; 1866 Tax Assessment; 1868 Tax Assessment.

except for in the very early years. The adoption of new methods may have been gradual out of wisdom and necessity, but it was not systematically rejected. Said another way, knowledge was not monopolized by any group in this period which means agricultural publications did their jobs well, perhaps too well. The democratization of knowledge meant that farmers by the last quarter of the nineteenth century were having to pick which area of production on which to concentrate, like fruit or dairy, or be unable to stay in business. The increased competition to produce more for less meant no one had the time, money, or education to produce multiple products and remain a farmer.

The *American Agriculturist*, which Ayres read, boasted of receiving 100,000 letters in 1863. Journals were often shared by members of a community, so in many instances measuring true readership is difficult. Measuring their precise influence is also difficult. For example, Ayres’ cultivation of grapes following advice from the press affected multiple people around him. As mentioned above, his request for which grapes would grow in his “cold grapery” was responded to by the *Agriculturalist*. Ayres followed the advice and built his own cold grapery during the spring and summer of 1864. He recorded paying a carpenter and glazier to do the construction and had his employees, Benjamin and Alfred, build a stone floor. Ayres also recorded paying a neighbor to paint his grapery brown and then “sold him grape vines 1 Diana 1 Concord.” Ayres sold or gave grapevines to neighbors throughout his journal and

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168 A cold grapery is a building with glass walls similar to a greenhouse. It was used to save grape vines from death during the cold winter months in northern climates.

seems to have been a distribution point in the community. Finally, he followed the advice from the *Agriculturalist* and planted Diana, Delaware, Black Hamburg and Grizzly Frontignan grape varieties. There is no record of Ayres writing back to the journal to report the varieties a success or failure. However, one variety was a success as on September 6th, 1864 he reported having “Diana cordial after dinner.” Ayres frequently had “callers” to his home for tea, dinner and as overnight guests. In one entry, he proudly records serving his guests strawberries he ordered from the *American Agriculturalist*. Ayres could very likely also have been serving cordial from his grapes to his visitors.

Strawberries and cordial were symbols of the refinement (similar to the ceremonious consumption of tea) one could participate in and obtain through the application of the mind and labor. The use of knowledge from the press to grow grapes demonstrates the consumption of improvement rhetoric was not all or nothing but rather a matter of degrees. Ayres was a pro-improvement focal point radiating out improvement rhetoric through his words and actions. The closest recipients of his radiation were his employees, Benjamin and Alfred, next his neighbors to whom he sold grapes and finally farthest away were the visitors who stopped by and enjoyed the literal fruits of his georgic labor in the form of cordial.

Along with editorial exhortations to participate in improvement and the nobility of farmers, agricultural journals used every opportunity to spread their message. Content ranged from advertisements, a section for wives and children, jokes, riddles or cartoons (often with moral overtones), advice columns, question and answer columns and announcements from the improvement community that related to commodity prices or

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170 Ayres, Journal, September 6, 1864.
agricultural legislation. This variety of subjects and approaches was due to several factors. One, journals strove to appeal to everyone living and working on the farm including wives, children and employees, not just the male heads. Second, journals, even very successful journals, could not afford to keep printing without advertisers and announcements, which at times led to a conflict of interest with the owners. Lastly, journals had to balance the tension of offering content that demonstrated scientific rigor without coming off as too technical, philosophical, upper-class and thus useless to farmers looking to increase material and moral status through agriculture. Likewise, being too casual with overly simplistic advice defeated the purpose of the enterprise. One PSAS member, Emanuel Geyer, wrote an absolutely blistering critique of journals calling them (and this is one of the friendlier comments) “trashy monthlies” with pretentious airs and shallow advice. While readers like Mr. Geyer may have been impossible to please, a variety of content let journal owners educate, amuse, interest and attract the widest possible audience in the hopes of convincing rural people of the potential benefits science had on agriculture.

Journal owners wanted to include every member of the household, even employees, in the movement, not just the male head of the household whose name the subscription was in. For example, the December 1864 edition of the American Agriculturalist “confidently” asked its young readers to “help keep up and increase the number of the Agriculturalist family. If father happens to forget the time of the subscription is expired, he will be pleasantly reminded… by a son or daughter.”171 The

171 "Boys and Girls Columns, A few Thoughts for December." American Agriculturalist, vol. 23 (December 1863), 349.
article also claimed the year had seen “thousands of cheering letters from young and old.” Journals, especially one so widely read as the Agriculturalist, were flooded with correspondence by the 1850s and 60s. Nevertheless, blatantly marketing to and asking for marketing by, children was not out of the question. A PSAS member, A. M. Spangler, echoed this line of thinking by journals in an essay in the society’s 1861 yearly report. Spangler laments the fact that evenings “in too many evenings in farmhouses are spent in dull, unprofitable conversation of silent employment” and encourages family members and employees “who are admitted into the family circle” to read aloud agricultural journals for the “pleasure and profit” of doing so. “Let father, mother, son, daughter and laborer” comment openly and “notes be compared and opinions interchanged freely” thereby turning the home into a place for “debate.” Ayres took an active role in educating his five children such as turning his office into a “school room” and later raising funds to build a new schoolhouse as a member of the school board. He does not record any efforts to educate his children in improvement rhetoric specifically though they did help with less urgent tasks such as picking stones, digging potatoes and gathering walnuts, perhaps making their help on the farm part of their education at large. McMurry notes that as the labor of farm children became less and less an important part of the farm economy, children were expected to fill their time with self-reflection and education. Agricultural publications urged children to educate

\footnote{Pennsylvania State Agricultural Society, Report of the transactions of the Pennsylvania State Agricultural Society for the years 1861-63, 267.}

\footnote{Ayres, Journal, November 26, 1864.}

\footnote{Ayres, Journal, May 23, 1864 October 7, 1864, October 19, 1864, June 16, 1865.}

\footnote{McMurry, Families and Farmhouses in nineteenth-century America, 195-197.
themselves out of a concern of maintaining their subscriptions and garnering future adherents to improvement rhetoric. Equally important though were publishers’ desires to address the fears of rural adults worried about how children would spend the free time available through commercial production and mechanization.

Ayres’ wife Jane managed the household as well as aided her husband in managing his responsibilities. As historian Sally McMurry has noted, strict notions of female duties being inside the house and male duties outside were not as fully expected in this period and when they were present applied to farm families, present much less.\textsuperscript{176} Rather, Ayres’ work and Jane’s often overlapped in the barnyard with the work of each at times bleeding into the “area” of the other. For example, Jane is frequently recorded as fetching or delivering things needed by Ayres like machine parts, harnesses or crots. She took these items to or acquired them from local stores, neighbors, or the railroad depot. Ayres helped or would direct one of the male employees to help Jane store cabbages in their basement, pick apples for cider and apple butter or install a new cooking stove in her kitchen. Ayres begrudgingly moved the sheep to a different field “to accommodate Jane and her chickens, a useless job, consuming much time.”\textsuperscript{177} Jane was in a position socially and economically to do less arduous labor than most farm wives. Like Ayres who had several male hands helping him with the outside work, Jane had women, neighbors or maids, under her direction in the house.\textsuperscript{178} Still, the wide variety of

\textsuperscript{176}McMurry, \textit{Families and Farmhouses in nineteenth-century America}, 56-57, 66-70.

\textsuperscript{177}Ayres, Journal, June 10, 1864, November 29, 1865, October 2, 1864.

\textsuperscript{178}Oral histories state that one to three of the maids working under Jane were African American women. However, at present there have been no records to confirm this. Homan, interview, May 23, 2013.
information in agricultural journals (such as keeping dairy cows or orchards) not just the sections aimed specifically at women, like housekeeping, childcare and recipes, would have been useful to make the labor she did or directed more efficient and productive. The full titles of both the *American Agriculturalist* and *Country Gentleman* placed the domestic economy on equal ground within the male realm of the farm.\footnote{179}

Ayres sold or gifted subscriptions to the *American Agriculturalist* to two of his employees, one white and one black. While tenuous relations with his white employees as well as their residence in the tenant house making the cozy gathering described above around Ayres’ fireplace seem a little unlikely, he clearly made strides to influence his employees towards agricultural improvement and education. If improvement conversations did occur, it was likely more in an employer/employee setting than that of family intimacy. At the very least, Ayres’ daily farming practices and purchases would have been loud and clear conversations with his employees, even if it was largely one-sided. The hope for broad appeal of journals to every farm resident was an attempt to broaden their reach. Ideally, in the mind of improvement supporters, journals would thus act as a catalyst to all in their sphere of influence to follow the georgic practices believed to improve the soil, the people who worked it and aid the nation in reaching social, economic and moral goals.

A key factor in journals’ decision to include advertisements was some simply could not afford not to.\footnote{180} Agricultural periodicals, unlike publications by the state or federal governments like the PSAS, the Farmers High School or the United States


\footnote{180}{Gates, *The Farmers’ Age*, 350-351.}
Agricultural Commissioner Report, had no state aid. They were private businesses with different characteristics from the above works. While the information they contained was no less valid than something like the PSAS, it was at times written in ways that showed the authors had profit on their minds. For example, the *American Agriculturalist* when it instructed children to ask their parents to renew their subscription. Government publications, in Pennsylvania at least, never included advertisements; they used some exaggerated language extolling the virtues of farming but to a lesser extent. Government publications also lacked the self-praising language common in journals.

Some found the advertisements to be undesirable while others found them to be useful. For example, the same Mr. Spangler mentioned above remarked that farmers were “often led astray by vaunting advertisements.” He grants that there may be some cases where products really do work well, such as a fertilizer, but should only be used after soil testing and consideration for one’s specific needs. Spangler further and to a harsher extent, criticizes journal editors who advertise their own farm products. “All who have thought on the subject know that the sole object of publishing *The Working Farmer* is to advertise Mr. Mape’s” fertilizer”, Spangler wrote. Some owners saw opportunities and pushed certain products or services they had a vested interest in, like an implement or chemical soil analysis. Mr. Mapes was not the only editor to follow ethically questionable practices. As the next chapter will show, the questionable ethics of journals and dealers of agricultural products was a major task that farmers called on agricultural colleges to help them navigate as they entered the marketplace.

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Experimenting with new crops or buying a new implement and thus remediating one’s image and practices, was not without its risks. Farmers were keen enough to know that attempting to increase production and entering the market could be dangerous and possibly even ruinous. In fact, farmers with lesser means were encouraged by the press to leave the biggest experiments to farmers like Ayres, who could afford a flopped trial. Journals thus were not simply a means to make the reader feel better, but to offer advice on imperative matters related to transitioning a farmer’s means of subsistence into private business. The most expensive flop Ayres records involved the purchase of a new threshing machine. Advertisements by the manufacturer of the thresher, Harder, appear in

\[182\text{Marti, To Improve the Soil and the Mind, 132.}\]
the American Agriculturalist. Ayres wrote to the Harder company on August 1, 1864, placing an order for the machine. He received it by rail on October 1. In January, Ayres finally had the time to test his new machine. It went badly. For two weeks, Ayres made entries about the machine repeatedly breaking and frightening his horses who proved the draft power. At one point he writes “Threshed this AM with one horse. Could not get the two to work together and gave them up in a rage for this week.” Ayres eventually “set aside” the new thresher and used his old one. Ayres spent $494.51 on the Harder thresher, which included the machine, horse treadle and

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184Ayres, Journal, October 1, 1864, January, 28 1865.
freight. Ineffective machines or methods like this were reported back to journals who then reported the findings back to readers for the benefit of others. Some new methods advertised could be a sham and some journals had better reputations than others. However, in general, editors strove to share the best advice possible. Doing otherwise would hurt their mission and their own bottom line. The press advised the farmer to rely on a mix of trusted old and newer methods in proportion to his financial stability. The hope was that he could experience the benefits of full market integration, efficient production and improved esteem with the least personal risk possible.

Dissemination of a georgic ethic was the core mission of editors. This meant educating farmers that scientific practices would best fulfill the georgic ethic and thus improve their material and moral status. In practical terms, this came out as advice to farmers to possess several virtuous traits such as self-education, thrift, morality, beauty and striving for good social standing. All of these virtues’ farmers would supposedly gain by practicing their occupation in the right way. Said another way, even though their social and material status was ignoble, they could theoretically raise them by practicing the above virtues in the farm setting. For example, a farmer could reeducate himself on raising cattle for milk production in his specific climate and available diet for his cattle. He could then carefully experiment and discover which methods worked best and most thriftily. Material benefits produced from these breeding efforts may take several years, but once he had won first place at his local fair there were new opportunities to sell his cattle and gain social approbation. The whole process would, in the minds of progressives, be a series of deliberate steps, culminating in the elevation of agriculturalists, their labor, their states and the whole nation through improved material
and moral conditions through the georgic work ethic as applied to the rural masses. One *Country Gentleman* stated that “Industry, energy, thrift and courage are not universal attributes of men.” And that taking on improvement goals was a “labor” and one had to “wait” for the “trial” to pass to gain the benefit. “The reward is sure but it cannot be gained without effort.”

The demand for agricultural journals was itself part real in a practical sense. For example, what is the best way to trim an apple tree? Ayres followed advice from a journal on just that for his “Quincy” trees. Journals also created the demand for the advice they peddled and helped shape societal expectations. Accordingly, when evidence of journals appears in records, they instruct the reader in various virtues. For example, farmers were encouraged to pair observation of nature with critical thinking to find inefficiencies in agricultural processes; such inefficiencies were, with proper critical thinking, opportunities to maximize the productive potential of nature for the benefit of mankind. Each georgic attribute farmers are encouraged to follow is intermingling. Delineating where one stops and another starts is often difficult. Mobilizing the agricultural capacity of the nation was not purely a matter of dollars and cents but of human interactions and correct character traits. Farmers had to be promised their human interactions with one another would benefit if they followed the advice given in the agricultural press. The prescriptive attributes below are examples of individuals using the advice in the hopes of altering their moral and material status to fit the georgic ideal.

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186Ayres, Journal, April 28, 1866.

The educational nature of farm journals was the most obvious virtue promoted in their pages. The educational function of *American Agriculturist* and *The Country Gentleman* would have been more important for Ayres than his neighbors in some respects. Ayres himself only lived on a farm for the first six years of his life and his formal education was not in agriculture. It seems likely that in many ways he would have had catching up to do compared to his neighbors who were lifelong agriculturalists. The instructional content written by journals for women and children would have been useful not just to Ayres but also to his wife and children. A writer to the PSAS in 1866 touted the “great measure” farmers and their families could “educate themselves” “until [they] become well informed on all subjects that [they] read and think about.” The agricultural press repeatedly admonishes rural people that knowledge and by extension moral and material improvement, is at their fingertips if they would just take the time to educate themselves. Ayres seemed to have agreed and used the two journals he read to spread knowledge to his peers, relatives and employees. As mentioned previously, Ayres ordered a total of sixteen subscriptions for himself, employees, neighbors and friends. It is not clear whether Ayres paid for these subscriptions on the behest of the people who ordered them and the expectation is they would pay him back, or if the journals were a gift. Either way, members of the community, like Ayres or a postmaster, frequently acted as informal agents for journals. In one instance, Ayres did purchase a subscription as a gift for a former railroad colleague in Tennessee. Ayres wrote “Charge_ Orange Judd

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and Co. enclosing $1.50 to pay for Agriculturalist to Mrs. W. B. Waldron Memphis as a token of respect etcetera.”\textsuperscript{191} Ayres does not provide any further details; however, in 1864 Mr. Waldron offered to buy Ayres “Memphis property” though Ayres was unable to sell it “for want of a title.” Perhaps Mr. Waldron and Ayres were both improvement enthusiasts. The Agriculturalist encouraged readers to start clubs centered around readership of the journal. As an incentive, the Agriculturalist offered club organizers discounts or free items.\textsuperscript{192} During one of the years, Ayres subscribed strawberry plants were given to agents.\textsuperscript{193} He recorded receiving strawberry plants in his journal at a later date. Ayres also acted as an agent for the Country Gentleman. He recorded receiving “five additional names for the club” and the names of three previous members who had not yet paid him.\textsuperscript{194} Ayres may have gifted the journal to Waldron to simply help fill his subscription quota as an agent. However, his language, “token of respect”, implies the journal, its contents and the things it stood for, followed a specific set of social and agricultural ideals that were honorable and appropriate enough, at least in the eyes of Ayres, to be an appropriate gift to his former superior.

Another virtue highly praised in agricultural journals was thrift. Readers were encouraged to use resources, financial or material, as efficiently as possible. Farmers were urged to keep records of their finances or work. Refrains often used when advocating for keeping account books are that it would help a farmer “know where they

\textsuperscript{191}January 3, 1865, October 12, 1864.

\textsuperscript{192}Lemmer,“Early Agricultural Editors,” 153.

\textsuperscript{193}“Premiums for 1864,” American Agriculturialist, vol. 23 (January 1864), 25.

\textsuperscript{194}Ayres, Journal, December 11, 1865, December 6, 1865.
stand” with creditors and debtors and help them avoid being taken advantage of or losing their farm from poor management. "The whole success of a farmer hinges upon timely attention to little things. This mainly makes the difference between thrift and poverty.” While only one survived, Ayres kept several account books. Indeed, as shown in the previous chapter, his records did him some good, such as with a dispute with an employee claiming he was owed over $300. Ayres had financial flexibility due to his skills as a railroad engineer, no mortgage and a wealthy family. He did not need to watch his finances as closely as the yeomen around him did. A large failed investment like the ineffective thresher would not be ruinous. Still, he tracked his finances in detail, even as small as .45 cents. The amount of money, land or employees being managed was of little consequence, what mattered was how well one cared for their possessions. A farmer with little more than a few acres and animals who managed them judiciously was more praiseworthy than the fanciest “book farmer” who let his expensive implements rust out in the weather rather than storing them properly in a shed. As discussed in chapter one, Ayres kept his eyes out for opportunities to save like when he saw on sale at a local store. He clearly kept a close eye on commodity prices too, like wheat and wool. After education, thrift and hard work were the noblest traits a farmer could possess. Articles such as one in the County Gentleman encouraged farmers to be thrifty by pooling their

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196 Ayres, Journal, July 2, 1864, May 7, 1866, October 10, 1865.

197 “Little Things in Farming,” *American Agriculturist*, 18. Indeed, Ayres himself was criticized by his own grandchildren for being a bad farmer on these very criteria. The current owner of the estate Mr. Homan recalls being told by the grandchildren that Ayres lost $1,000 a year and if he was not satisfied with an implement, he left it sit in the fence row unused.
resources such as tools, draft power and capital. Sharing costs could allow them to achieve higher yields and thus profits. This, of course, was advising farmers to do what they had a tradition of doing for centuries: cooperative labor, but with the caveat to plan to someday have enough resources of their own to farm independently.\footnote{198}{“Farm Economy,” \textit{The Country Gentlemen}, Vol. 30 (1867): 187.} No resources (time, money, land, materials or labor) were too small to manage and improve upon in the rhetoric of agricultural journals because resources saved in one place could judiciously be applied to other activities that supported improvement.

The length Ayres went to secure dependable help in his personal journal also indicates his thrift. As detailed in chapter one, Ayres had continual problems finding and retaining reliable help. A usual source of farm labor, children, seems to not have been a strong option for Ayres. While he had five children, they were young and four of five were female. He only records them helping with tasks on the farm in a few instances. When he does record his children working in his journal, they are more closely related to the domestic circle (therefore more of his wife and daughter’s sphere) than the outdoors, more business-oriented work. Ayres instead relied on local, young men and occasionally women to complete the work on his farm. For household work, his wife seems to consistently had a maid or two helping her, which assured Ayres had enough hands during busy times like when planting, harvesting and butchering. Furthermore, he would “go riding” in his community to seek out helpers. On one occasion he expressed frustration that people failed to appear when they had promised they would.\footnote{199}{Ayres, Journal, November 11, 1864.}
Implements could ease these troubles, but only to a certain degree. They were expensive and the new inventions many had deficiencies yet to be remedied.

Part of Ayres search for reliable, affordable (at least in his mind) employees took him to Washington D.C. on two occasions in search of “contraband” or African Americans recently freed from slavery. He first records making the trip in June of 1864 and then again April of 1866. In 1864, Ayres wrote, “Left Phila[Delphi] 12 train for Washington arrive about 6 p.m. at St. Charles [hotel]. Business. after contraband servants & daily maid.” The use of the term “contraband” here refers to freed or escaped slaves being classified as confiscated property by the federal government during the civil war. This allowed the United States government to technically refuse to return former slaves to Southerners who claimed them as property on the basis they would be used to aid the Confederate cause. However, the federal government was faced with the issue of providing food, clothing, housing and medical care for hundreds of thousands of African Americans refugees who fled north or to the nearest Union Army. Dozens of refugee camps sprang up anywhere Union armies were present, including several near Washington D.C. However, the government was often reluctant to take what it saw as too much responsibility for refugees. One solution the government used to lessen this responsibility was through a contract labor system. African Americans could and did work for wages, doing defense-related work for the federal government (often the least desirable jobs) or the government would facilitate their employment out to businesses,

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farms, or plantations. Ayres wrote on the second day in Washington, “Quarter Master’s office for contraband called for pass and authority to take contrabands.” The next day he wrote, “R. H. Duncan. called concerning daily maid at St, Charles hotel. Masons J. Walked over, got 2 female contrabands they deserted me in Washington.” Ayres gives no more details and seems to have given up. He took a train home later the same day.

Almost two years later while in Harrisburg he wrote, “Contrabands saw Dr. Jones’ old man and boy” while in Harrisburg to negotiate with a merchant to whom he sold corn. Ayres then stayed overnight and went to Washington D.C. early the next morning. For the next day’s entry, he wrote, “Contraband Hunting one for which started to Washington arrived about 11 am went directly to Freedmen’s Office Hired a boy Harrison Gilbert $6 a month.” Harrison was “about 18 years old” and accompanied Ayres homeand is recorded working alongside Ayres and his other employees. The contract shown below from the Freedman’s Bureau makes it clear Ayres did indeed hire Harrison through the contract laborer system.

Where did Ayres get the idea of hiring people who were formerly enslaved?

There is noteworthy, though not extensive, discussion of African American labor,

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203 Ayres, Journal, June 3, 1866.

204 Ayres, Journal, April 3, 1866, April 4, 1866. The newly established Freedman’s Bureau replaced the U.S. Army quartermaster’s office as the government office organizing freedmen labor seen in his first attempt to hire freedmen in 1864.

enslaved and free, in the journals he read. The tone of the *County Gentlemen* and *American Agriculturalist* when discussing “black labor” is clearly negative towards it. Both journals tend to disparage farmers from employing people of color usually with the rationale that it will not be efficient or economical.  

One article goes so far as to claim that after much “speculation about the freedmen” for several years, it had been determined through an antidotal story that “the full value of black labor, in competition with white labor, has been fully tested” and “farms worked by white labor will yield one-third more than the farm worked by black labor.” The article claimed white labor was able to produce more and better-quality corn fodder than its neighboring farm down the road that employed African American labor. In addition to discussions exploring the merits of African American labor in efficiency terms, their numerous articles on the state of contraband camps and their occupants during the 1860s. They discuss the poor conditions of the recently freed and their transition into freedom and paid labor. The closest thing found for this survey was a brief mention of former slaves working “for Union men” in the north. The articles give a rather cheery report on the ability of African Americans to improve and even beautify former Confederate farms under the direction of northerners. It is more likely Ayres encountered the idea in other areas as an informed, well-read and socialized citizen. Ayres would have also been very familiar with the debate that had been raging for decades of free versus slave labor and which was more efficient, moral and beneficial for the nation. This debate was very much present


209 Gerteis, *From Contraband to Freedman*, 50.
and related to the agricultural improvement movement in the north. To be sure, improvement ideals were also present in the south, but to a lesser degree. For many in the north, more efficient and profitable agriculture was a key component of combatting the spread of slavery and thus the political power of the south. Some northern improvement sources disparage plantation agriculture similarly to urban factory work reasoning that plantation owners were equal to the greedy, controlling, corrupt capitalist factory owners. Feudal plantation masters, so the thinking went, limited the independence and prosperity of their fellow whites. Their use of cheap slave labor gave them an unfair advantage in the marketplace, could include the assumption of heavy debts to foreigners to grow cash crops and fostered a deep class divides between whites reminiscent of old-world hierarchies; all of which raised visions of specters threatening to American democracy. Further, planters put themselves at risk of debt by insisting on using slave labor to grow commodity crops and use inefficient methods. For example, as tobacco became less and less profitable in upper southern states like Virginia due to exhausted soil and expansion of more fertile soils further south and west by the 1810s, some planters in Virginia “floundered in economic despair.”\footnote{Gates, \textit{The Farmer’s Age: Agriculture 1815-1860}, 105.} In a word, by refusing to provide their own labor in production, planters took shortcuts to prosperity that were socially and politically regressive and thus as morally reprehensible.\footnote{Benjamin R. Cohen, \textit{Notes from the Ground: Science, Soil, and Society in the American Countryside} (New Haven: Yale University Press, 2009), 97-99, 132-134.} However, black labor that was free and paid might offer a yeoman a workaround to the problem of morally irresponsible slave
labor on one end of the spectrum and costly white labor on the other. Ayres and other northern farmers and businessman who saw an opportunity in hiring freed African Americans that could further their bottom line and moral reasoning of georgics at the same time.

Motives for seeking out the labor of freed people seem to have been varied. For example, historian Leslie Schwalm documents the hiring of freed men and women on midwestern farms to fill labor gaps, while many white men were away from their farms during the war. Ayres’ consistent problems obtaining help when he needed it most seems to have been part of his motivations. nineteenth-century standards of humanitarianism also played a role for some white employers. Lewis Tappan, a prominent abolitionist, wrote to General Benjamin Butler suggesting that the U.S. Army coordinate with abolitionists to “provide for the removal” of “self-emancipated negroes” to “the farms and workshops” in the North. Tappan wrote the letter in August 1861, just months after the war began, that frequent press coverage of the ill-equipped federal government was becoming an “embarrassment” to Butler, “…you…would be relieved of care and anxiety and the negroes …might find employment that would benefit them, as well as those who might engage their services for a fair remuneration.” This statement from Tappan and others demonstrates Tappan was not making the offer to Butler out of the goodness of his heart but likely was eager to prove African Americans could achieve

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212 One article bellyaches that American farmers “need labor” but must “pay a high price” for it. In addition, farmers are “obliged to put up with a very poor kind [of labor], and almost all of this foreign.” The articles goes on to demand that farmers be given access to the “crowded labor market of Europe” so they can “select…men and women as we want without going there.” “Skilled Labor on the Farm.” American Agriculturist Vol. 24. 1865, 144.

moral uplift and that free labor was more efficient than slave labor.\textsuperscript{214} Even though refugees were often considered a burden and Butler himself wrote the situation had become a “disaster”, he also stated it would be “unwise” to “fill our towns…with an influx of people where their labor is not wanted” and right before winter came when agricultural labor demands were lowest.\textsuperscript{215} In his reply to Tappen, Butler was aware of the final main motive northerners had for considering freedmen labor: they could pay African American laborers less with little to no consequences for doing so. Benjamin Plumstead was paid $15 per month. Benjamin’s history is not known aside from the fact that he used to work at the iron furnace owned by Ayres’ father-in-law. Thus, Benjamin was not recently freed as was Harrison but may have been a freedman living in the north. Ayres also records hiring another African American as a day laborer named Jack Delige.\textsuperscript{216} Records state Ayres paid his fulltime white, male employees $20, $25 and $27 per month.\textsuperscript{217} Harrison’s pay of $6 a month was standard for Freedmen’s Bureau contracts and the same as what Ayres read about in the \textit{American Agriculturist} in 1864. Ayres had a history of hiring black labor through Benjamin, Jack and possibly his


\textsuperscript{216}Ayres journal, August 22, 1865. August 26, 1865.

\textsuperscript{217}Ayres, journal March 2, 1865, February 28, 1865. Benjamin told Ayres he planned to wed Maria Delige, a relative of Jack on February 4\textsuperscript{th}, 1866 after he had been away for four days to attend a wedding. Ayres marks his extreme emotion as a reaction in his journal with four exclamation marks. On February 11\textsuperscript{th} he records that his relative, George Lyon “…talked him [Benjamin] out of marrying that nigger, Maria Delige.” Ayres does not give a reason why he seemed to object to the match, however, it may have been due to some sense of entitlement to Benjamin’s labor and life. This slur by Ayres gives some possible insight into his feelings regarding African Americans and that his employment of them was primarily out of economic interest as Georgic rhetoric seen in the in the agricultural press examples above demanded.
housemaids before hiring Harrison. Tappan was likely hoping that efficiency (cheapness) of freedmen labor would soften vehement northern objection to increased black labor in the region. It did not. The exchange between Butler and Tappan concisely sums up the tensions between improvement rhetoric that demanded cheap labor within an era of competition and prejudice.

It is possible that Ayres bringing home Harris also created tensions with his current employees. For example, as mentioned in chapter three, Ayres fired his employee Jesse Markle “on account of his vile wife.” Perhaps Harrison was expected to live with the large Markle family in the tenant house as other employees, both long term and temporary, had been, for five days after his arrival Ayres recorded that Mrs. Markle had “let loose her tongue.” His use of the withering term “virago” in the same breath indicates she was a woman who, in his opinion, shared her opinions too forcefully. As mentioned previously, Ayres fired Mr. Markle “on account of his vile wife” the next week. Even if Harrison was housed with the family, his mere presence could easily be seen as a threat to the livelihood of the Markle’s as many other whites in the north saw former slave laborers. The very presence of freed African Americans widely unwanted. Harrison's labor, while having the ability to contribute to Ayres’ financial and moral independence, stimulatingly threatened the Markle family’s claim to georgic independence and respectability by acting as competition for Mr. Markle in the labor market.

Some of the principles of georgic improvement can even be detected in Harrison’s contract. For example, it obliges Ayres to provide Harrison with housing, fuel, medical

attention and “full substantial and healthy rations” in addition to their monthly wage.

Ayres followed through at least to some degree as he recorded purchasing a pair of boots and shirt for Harrison soon after they returned home. The contract also makes sure to make clear the laborer was free and not coerced like slave labor. The contract also required the employer to “assist and encourage efforts” employees to educate their children. The provisions and education, forms of material and moral betterment, were not only keys to improvement thinking in the north, but also a clear rebuke of slave labor which denied African Americans such guarantees. Ayres’ struggle to fulfill his labor requirements in a way that followed the demands of the improvement ethic is an indication that some whites were desirous to follow the ethic, but such rhetorical alliances were not without difficulties.

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220 Ayres, journal, April 7, 1866.
Agricultural journals and the advice they offered was laden with moral overtones. A farmer, even though successful in his business pursuits, had not really arrived until he attained respectability. He could not gain respectability by abstaining from physical labor, which was one of the previous criteria for a respectable person. Not having to work with one’s hands was an indicator of class and wealth. However, in the georgic ethic and in a nation where land was the most available source of capital, refusing to work severely limited a farmer’s potential for success. In this context, labor was glorified by the agricultural press and others. The farmer was portrayed as honest because his gain came from labor done himself; he had not pilfered it from others such as lawyers or bankers who never lifted a finger. Yet at the same time the press criticized urban capitalists, it taught farmers to apply their management practices to farm labor. They were aware that a nation of farmers not improving their agriculture capacities in some manner would soon be outdone in the world market. This was the rebranding of labor and agriculturalists the agricultural press undertook. Farmers were in a way told to pursue two different sets of values. Work hard and produce more, but also work hard and become educated with the intention of making a profit and obtaining status, which effectively worked farmers out of their job and social class. The advice in journals was consequently contradictory.221

The moral component is the hardest to give physical examples of in Ayres’ life since it existed mostly in the mind, although it relied heavily on visual cues. Beauty and order on the outside were evidence of good morals on the inside. For example, a common criticism of the wealthy and some urban individuals was that their sedentary lifestyle caused ill health. The president of the Farmer’s High School, William Allen, stated that

young men in the city suffered from “flabby muscles, pale complexions, dyspeptic stomachs and languid gait” Allen’s students, in contrast, possessed “a sound mind and sound body” through their labor with “round limbs, ruddy complexions, kindly digestion” and an excited gait of healthy, happy, young men eager to contribute to the good of others.²²² This same language was found in the agricultural press for several decades by the time Allen made his speech in 1866. For example, one article in the *Country Gentlemen* stated after ridiculing “people who have been bolstered up” their whole lives and are left “helpless as capsized turtles” in times of struggle stated, “one of the best lessons a father can give his son is this: Work. Strengthen your moral and mental faculties, as you would strengthen your muscles by vigorous exercise. Learn to conquer circumstance; you are then independent…”²²³ Allen was ennobling agricultural labor by claiming it made not only corporal bodies beautiful and good, but also improved the minds and hearts that inhabited them. When promoting the school, Allen knew assuring farming parents their sons would be instructed in the correct moral ideals they had been inculcated with by the press was essential to increasing enrollment.

External beauty was also a georgic ethic because it could be an indicator of internal traits that were considered virtuous and praiseworthy. Country air and water were extolled as clean, healthy and invigorating. Ayres managed his material possessions to signify not only his wealth but order and beauty. A beautiful environment equaled productive and independent people. Said another way, the work required farmers to create a manicured and ordered environment was evidence of good morals such as perseverance, thrift and a

²²²Allen, "The Economy of Intelligence,” 249.

strong work ethic to create such an environment out of chaotic nature. This can be seen in a brief article in the Agriculturalist titled “How can farming be made more attractive?”224 The fourth bullet point of the article claims, “By adorning the home. Nothing is lost by a pleasant home. … neatness, comfort, order, shrubbery, flowers, fruit should harmonize all without [outside].” Not only did Ayres take care to build a stately house, he also took measures to beautify it. He maintained a grass yard interspersed with flower beds containing lilies and gladioluses. He purchased boxwoods probably with the intent to use them as shrubs.225 He often took his stylish, new carriage to church instead of the farm wagon. Ayres large house incorporated Greek and Gregorian architectural elements, eighteen rooms, four fireplaces, two of which are marble, a separate wing for servants and a cherry banister on a grand staircase.226 He also filled his home with fine furniture and material goods.227 Ayres seems to have put forth the effort to build his dream house even when his length of stay in Pennsylvania Furnace was undetermined.

Lastly, one of the most frequent chores in Ayres diary building, moving and repairing his fences. As Historian Paul Bourcier has pointed out, fences were not merely a means to prevent damage to crops, but also one of the premier symbols of order and control in England and early America.228 The large amount of capital and time required to maintain fences was frequently commented on in the journals Ayres read throughout the

224“How can farming be made more attractive?” The Country Gentlemen, 270.
225Ayres, Journal, April 25, 1865.
226National Register of Historic Places Inventory,” Will and Intestate Files — 1800-1990, 2,3,4
228Bourcier, “In Excellent Order,” 546-550.
years he farmed. Still, Ayres records cutting grass under his fences, trimming trees and brush along the edges, sawing boards, planting blackberry bushes along the fences and even reconfiguring whole sections of his fence to ensure it was at right angles. An ugly farm in georgic thought did not possess the traits just desciiber. For example, buildings and fences were in disrepair, trash from the house and barn were thrown out windows rather than repurposed or put out of sight, tools and objects used for work were not put back in their proper place but left lying around, weeds abounded, animals were thin and sickly, plants and people followed suit and resources and tools like were used carelessly. For a farmstead to be considered beautiful, it in no way not required farmers attain some degree of wealth, plain living was estimable. However, order, cleanliness and proper care of tools, buildings, plants, animals, self and resources must rule. Order and cleanliness indicated one’s adherence to principles of georgic morals despite a lack of financial and social power. Indeed, adherence to these principles by ordinary yeomen was seen as proof that virtue was a matter of character and choice, not birth and bank account. An old barn filled with plain animals was perfectly acceptable as long the barn was kept clean and its animals healthy. Social perceptions were important and a beautiful, orderly home and farm were the means Ayres used to ensured others he and his family were respectable.

Social opportunities served as an incentive to join progressive movements and purchase agricultural journals. As mentioned earlier, Ayres created a reading club of sorts by eliciting subscriptions to the *Agriculturalist* and *Country Gentleman* from those

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230 Ayres, Journal, August 11, 1864, December 8, 1864, March 2, 1865, May 1, 1865, September 16, 1865.
around him. His readers were a mix of neighbors, friends, employees and relatives. In the case of his employees, their education directly benefitted to him, while with others like his brother in law agricultural improvement was likely something they enjoyed discussing together. Ayres used the *Country Gentleman* to learn about an agricultural fair organized by the Pennsylvania Agricultural Society. McMurry concluded that the information contained in the agricultural press spread through traditional networks like family, organizations and politics.231 For example, one farmer named Greaves wrote to Evan Pugh, the first president of the FHS, asking for Pugh’s informational catalog on the school. The Greaves stated “If you will…send me a copy by the mail, I will not only read it myself but induce my friends all to peruse it within the circle of my acquaintance.”232 The information was not just a tool for increasing profits but also promoted social cohesion and enjoyment. Further, the author of the letter to Pugh clearly caught on to several realities related to the establishment of the FHS and Georgics. One, leaders in the movement like Pugh were eager to reach as many readers as possible to try and convince them of georgic’s merits and would have to rely on improvement disciples who were willing to work for free to spread the message as far as possible. Two, the explicit promise to further help the commercialization through his social influence shows commercialization was not simply an economic calculation but also obviously a social and moral decision.

231 McMurry, “Who Read the Agricultural Journals?” 3

Ayres may have learned of the date and location for the state agricultural fair he visited through this advertisement in the American Agriculturalist. The advertisements began appearing several months in advance to the events.

The agricultural press was essential in spreading and popularizing scientific-based improvement methods and persuading farmers it was virtuous since it found its origins in the georgic ethic. The agricultural press that developed in the nineteenth century took up the task of educating ordinary farmers on the latest methods aimed at increasing production and profits. Heretofore, such knowledge had been limited to a small circle of affluent men for whom farming was a hobby. As the century progressed, the circle of knowledge widened considerably due to agricultural journals. This was seen most clearly through Ayres’ life that give a physical form to a set of historical ideas. Viewing the vast efforts made by supporters of progressive agriculture over decades as being driven solely by a belief that agriculturalists were the most perfect version of Americans is ill-informed. No doubt, some did believe in that image of superiority; however, that belief
was not enough to motivate farmers to risk changing their production methods. Rather, the ideas in journals were meant to frame scientific improvement in a way that appealed to farmers and sought to ennoble their labor. The aim was to boost agricultural production and Pennsylvania’s ability to compete in the national global market. This, in turn, assured America could remain independent and its new ideals could be freely practiced. Farmers were now encouraged to seek a profit for the betterment of the nation. Men like Ayres made up the network of the agricultural press, schools and societies. They were intermediaries between the agricultural and non-agricultural worlds. They transmitted information about science and capitalistic practices to the general population. But their reasons for doing so were much deeper than simply turning a profit. To be sure, in general, farmers often did not make a profit when they tried out new techniques or equipment. Creating a commercial system of agriculture took on social, moral and patriotic dimensions. As the nineteenth century went on, failing to be progressive and seek a profit was seen as unpatriotic, uncouth and even reprehensible. It was regarded as a failure to regard yourself, family, community and county with care. Commercial agriculture was not merely a method of material advancement, but of moral advancement in a democratic society where rank (with the exception of some, such as slaves) was no longer determined at birth. The ideas expressed in agricultural journals offered the hope of gaining power and prominence in one’s community through the practice of the georgic ethic.
Chapter Four

Agricultural Education, The Farmer’s High School, Georgics in the Farmer’s High School, The Farmer’s High School in the Life of Ayres

J.S.G wrote Pennsylvania Farm Journal in 1851 anxious about the social, moral and class degradation farmers would face if they did not educate their children in “two distinct modes – the body and the mind.” Education in these two modes would display to the world farmers as the most virtuous citizens. Prominent journal editor Thomas Fessenden appropriately wrote the education options available to farmers forced them to choose one of three paths. From 1820 to 1870, the most common option for farmers was to receive a rudimentary education that limited advancement later in life, pursue higher education that would never relate to their daily work, or abandon agriculture all together because of their ignorance of efficient farming methods made competing in the market impossible. The previous chapters discussed how agricultural reformers pushed a model of maximum production and efficiency via agricultural societies and the press in light of the monumental changes of the nineteenth century, such as industrialization and capitalization. Societies and the press attempted to remedy the unsatisfactory education options for overcoming these changes through informal education like meetings and journals; however, these efforts were not enough. Out of this failure, the third major


prong of the agricultural improvement movement took shape as improvers successfully
lobbied for publicly funded, agricultural education. In Pennsylvania, these demands were
realized in 1854 with the establishment of the Farmer’s High School of Pennsylvania
(FHS). Public support of education was not new, but the scale of funding and that one
institution focused primarily on one occupation was wholly new.236 The establishment of
the FHS with money granted by the Pennsylvania legislature was solid evidence
agricultural societies and press had been able to coalesce a degree of organization
amongst farmers since the turn of the century. Equally important, it was a sign they were
able to convince the state it was in the state’s interest to fund the furthering of the georgic
ethic amongst rural populations. The legitimizing of georgics was true on a national scale
when in 1862 farmers were able to receive substantial federal funding for colleges
focused on “agriculture and the industrial arts” via the Morrill Act.237 All knew
agriculture could be a form of existence full of “drudgery” and “dullness.”238 Yet
agricultural practice that used the latest tools of science and rigorous intellect lifted itself
out of the mire of a crude semi-subsistence into respectability. Society meetings, fairs and
reading materials had an impact leading up to the midcentury. Yet too many facets of
agricultural life and production still felt beyond farmers’ control. For example, urban
employment tempted children away from the farm, migration to fresh soil beckoned

236Marti, To Improve the Soil and the Mind, 172.

237Act of July 2, 1862 (Morrill Act), Public Law 37-108, which established land grant colleges, 07/02/1862;
Enrolled Acts and Resolutions of Congress, 1789-1996; Record Group 11; General Records of the United
States Government; National Archives.

238Lacy J. Darlington, “Agricultural Schools, no. 2.” The Pennsylvania Farm Journal and Progressive
Farmer Vol. 1 No.2 (May 1851): 33-64. 38.
farmers west threatening community cohesion and ideas of rural folk lacking “respectability” persisted. For agriculture to be seen as legitimate, estimable and as valuable as any other occupation, more than agriculture press and societies were needed. Improvers turned to formal education of children and young people as a means to spread their ideologies. Georgic notions said the purest way to raise one’s social and material status was through the union of physical and mental labor. This meant that if rural children could just be educated in how to make their physical labor most efficient, they could prove once and for all they should be afforded equal respect on par with other occupations and classes. Furthermore, through a georgic paradigm, they could even claim moral and civic supremacy over them. An intellectual, scientific education for young farmers would show them to be modern and sophisticated, while the corporal component of georgic based agricultural education would prove farmers to be morally upright. To the men who headed the improvement movement, agricultural colleges such as the FHS would cement respect and prosperity for the farmers of the future.

The following chapter will display the birth of georgic rhetoric into a state-sanctioned and sponsored institution of higher learning. In addition, it will be shown that once the Farmer’s High School was established, individuals and institutions turned to it for practical help, which in turn aided them in their “quest for legitimacy”, as historian Alan Marcus has termed it. Marcus states that public “dissatisfaction with American

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239 Marcus, *Agricultural Science and the Quest for Legitimacy*, 21; Martí, *To Improve the Soil and the Mind*, 163.


agriculture and farm life…” began around 1870 and lead to the Hatch Act of 1887.\textsuperscript{242} This act gave each state in the union federal funding to conduct research at an agricultural experiment station. Marcus is not wrong in his assessment; however, it needs some clarification. Public dissatisfaction had indeed grown to reach a wider public audience by the end of the nineteenth century, but the seed of this discontentment had been planted at the end of the previous century in the form of georgic rhetoric being circulated by gentleman farmers in Europe and the United States. That seed was then nurtured along by agricultural societies, press and early agricultural schools throughout the first three quarters of the nineteenth century, as has been shown in the present document. Some of the earliest, most obvious cries for legitimacy through the practice of georgic rhetoric came from both men of notoriety and obscurity. They included publishers like Orange Judd, Luther Tucker and Horace Greeley, agricultural industry men like Cyrus McCormick and many smaller seed and implement dealers, agricultural societies and individual farmers. The willingness of these seekers is evidence of acceptance and desire to practice georgic rhetoric. Or at least a tacit acknowledgment that displaying signs of georgic virtue outwardly to society could benefit them individually and institutionally.

We will begin the chapter by briefly examining historical precedents of publicly funded education in the American colonies and later in the United States. Then, attempts of including agricultural curricula into primary, secondary and collegiate schools as well as the influence of agricultural societies and press on agricultural education implementation, will be discussed. Finally, the establishment of the FHS, obtaining Land Grant status through the Morrill Act and the quest to fully embody georgic virtues in its

\textsuperscript{242}Marcus, \textit{Agricultural Science and the Quest for Legitimacy}, ix.
staff, students and actions will be shown. It is important to note the movements that brought about state support of agricultural education were not knowingly coordinated for a specific outcome, but rather in general and at times for competing goals by those in agriculture. When farmers did get their act together enough to demand institutions like the FHS, the nature of how they should educate was still in contention. The limited surviving records made by Ayres do not record him being directly involved with the FHS. However, his familial, business and personal interest in connection to the institution make it highly unlikely he was not watching the development there. Considering the myriad of connections to the scientific improvement movement discussed in the previous two chapters, he was too entrenched geographically, socially and economically not to be. His actions and links to the school as well as those of others will be explored here as an example of how the rhetoric behind the school, societies and press infiltrated every level of the agrarian class. Some were more saturated than others. Nevertheless, the deep abiding influence of the georgic rhetoric on the Farmer’s High School and Pennsylvania agriculture is undeniable. Indeed, they in large defined what made a “good farmer.” Furthermore, Ayres’ involvement and connection to the FHS will be shown to the fullest extent. In instances where the infiltration of georgics into FHS cannot be shown by the life of Ayres due to the limited number of his surviving documents, the argument here concerning the infiltration of georgic rhetoric will be discussed using the plethora of sources left by others.

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244 Marti, To Improve the Soil and the Mind, 163.
J. Richter Jones addressed the Susquehanna Agricultural Society annual fair in 1853 and explains to fairgoers what he saw as the origins of some common fears swirling around rural communities. The root of the fear according to Jones was the “war” man had been waging “against nature” (manual labor) since the “feudal times” when labor lost its “Roman dignity.” Labor became the forced lot of serfs and slaves and, Jones implied, not the means to prove one’s character or raise their status. The trouble was that the world in 1853 was still in a feudal mindset, leaving farmers behind socially and economically while also tempting their children to the comparatively leisurely and vice-ridden urban lives. In reality, the feudal tyranny of wealth and virtue was gone. In the rebirth of the Roman republic, a meritocratic and capitalist America, labor could once again give the farmer the “unquestionable social position he deserves.” The only requirements to regain the glory days of the republican past were to give the body what it “craved”, being physical labor and to educate the mind in scientific principles. For a while, city dwellers and the rich were wrong about the lowliness of labor, agriculturalists needed to adapt to the “spirit of the age which is progress” in the form of “scientific education.” Jones stated that traditional literary colleges would not successfully “unite the book and the plow” and “the only resources are colleges of some new model.”

Ideally, the new model would be equal parts practical and scientifically rigorous to farmers as it was. Jones concludes that the “moral and political power” is in farmers’ hands and they only needed to request their legislature fund a farmer-friendly education system and it would be given to them. Public funding of education had existed in the

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United States since colonial times. However, the scale requested by farmers was more than had ever been proposed before. Decades of asserting that scientific agriculture was good for agriculturalists and non-agriculturalists alike had paid off. Pennsylvania farmers had organized as the largest constituency via societies and the press to demand aid. Through the FHS, they had a state-backed institution that affirmed and propagated the Georgic ideals that promised to improve their social, moral and economic standing in society. As much as the agricultural reform movement emphasized thinking over feelings, the installation of Georgic virtues by the state certainly had the power to ease fears of agriculturalists as they faced a monumental change of their occupation no longer being tenable as a means of subsistence. Farming as a means to earn a profit in a competitive marketplace was the future, but it was a future farmers were ill-prepared to meet. They would have to open up to the idea of being reeducated in their own craft.

Publicly funded education in the United States before the 1850s varied widely in its application by region and degree. The first publicly funded school in the United States was established via the town of Dorchester, Massachusetts in 1639. Primary and secondary schools focused on what was seen as the basics needed for all children to become productive members of society and learn reading, writing and arithmetic. Agricultural education, in general, was largely left out of every level of curricula. Northern state and local governments were more willing to spend public funds on education than their southern counterparts. Colonial societal conditions in the north that were friendlier towards family building. For example, in comparison with southern

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colonies they had lower disease rates, more equal male/female ratios, more diversity in 
education and skill levels, likely all played a part in the willingness to spend public funds 
on education. Whereas in southern colonies, immigrant populations made up 
predominantly of young males meant to focus on laboring rather than society building, 
made family and child-rearing less of a priority. The key Protestant requirement of being 
able to interpret the Bible oneself, such as in Quaker and Puritan circles, also added an 
emphasis on literacy in northern children. For example, the colonial Assembly of 
Pennsylvania stated in 1683 its desire to see every child be able to read and write by the 
age of twelve. In 1834, Pennsylvania passed the Common Schools Act which encouraged 
the establishment of free schools for every child through local and state taxes.²⁴⁸ Bucher 
Ayre’s father William was a “persistent” advocate for the law during his time in the 
Pennsylvania General Assembly.²⁴⁹ Before 1834 law parents paid to enroll their children 
in school. Most Pennsylvania children attended church and neighborhood school sand a 
few wealthier children were educated by tutors.²⁵⁰ In 1790 and 1809, the state passed 
laws requiring itself and each county to pay for the education of children of parents too 
poor to pay school fees. According to Alfred True, the reasoning behind parents paying 
school fees was the belief that it was their job to educate their children. In part, the shift 
to publicly funded education is a shift to citizens viewing education to be a communal 
and governmental responsibility.

Journal of Mid-Atlantic Studies 1, no. 2 (1934), 63-75.

²⁴⁹ Egle, Pennsylvania Genealogies, 55.

²⁵⁰ Hewitt, "Samuel Breck,” 64.
Colleges and universities also had a long history of public funding in America.\footnote{Earle Dudley Ross, \textit{Democracy's College; the Land-grant Movement in the Formative Stage} (Ames: Iowa State College Press, 1942) 19, 20.} In the early decades of the nineteenth century, the use of that funding, however, would begin to shift towards funding scientific rather than traditional literary education. Grants from state and federal governments came in the form of land or money. The University of Pennsylvania, for example, was granted $3,000 in 1807 by the state for a botanical and experimental garden. Early tertiary institutions were often organized by various Christian denominations and were limited almost exclusively to those with a certain degree of wealth and status. Pre-revolution and shortly after even church-run schools received public aid, as was the norm in Europe. However, as the separation of church and state became a more dearly held idea, such religious institutions began losing public funding in favor of secular schools.\footnote{Gates, \textit{The Farmers' Age}, 373.} The older curriculum at universities centered on teaching the classics such as Greek, literature, philosophy, or theology. Natural and physical science courses were largely left out until the 1820s and the traditional “autocracy” of humanity centric education was being challenged as the knowledge needed to maintain power and wealth increased. The sciences offered a way to manipulate nature and natural resources. Tapping into the stream of nature offered the promise tapping into the economic tide of industrialization.\footnote{Ross, \textit{Democracy's College}, 9, 15, 16.}

Farmers were by necessity steeped in nature. Their daily work required sciences like chemistry, botany, biology, physics, geology, meteorology and engineering. Yet hardly any farmers thought of their work in those terms. Advocates for agricultural
improvement wanted farmers to be masters of nature and thereby tap into the social and economic potential of industrialization. A host of other labor occupations like mining, construction and factory work whose success depended on laws of nature and natural materials similarly sought education in the sciences as a way to improve their lot. Alexis de Tocqueville aptly observed that the democratization of the control of nature meant was in the best interest of America. An education that provided instruction on how to control nature would benefit the majority of citizens who found their livelihood in agriculture, commerce and industry rather than literary pursuits. \(^{254}\) When agriculturalists started seriously advocating for vocation specific education, it easily fit into the larger trends of the nation. Furthermore, they claimed education would contribute to the social, economic and civic health of the nation and their states. On that basis, agricultural improvers declared farmers, as the chief arbiters between nature and man, had a moral and practical priority to publicly fund education. Agricultural societies and press spent the first half of the century convincing farmers of this, so by their sheer numbers they could force state and federal governments to agree.

Pennsylvania was able to convince its government farmers deserved some degree of priority with the establishment of the FHS and the federal government in 1862 through the Morrill Act. In between, however, there was a waiting period. During this gap, which was roughly from 1820 - 1854, agricultural improvers, only loosely connected, took steps to established formal agricultural education on their own. All improvers agreed that farmers had to be “enlightened” about how to best perform their own craft, but were at

\(^{254}\)Alexis de Tocqueville, *Democracy in America*, II, 47-52, 75-75.
odds as to what that meant.\textsuperscript{255} For example, improvers found all levels of education inadequate to prepare students to be competitive as well as respectable farmers. Letters to Evan Pugh from the parents of young men and young men themselves wanting to attend the Farmers High School felt the same.\textsuperscript{256}

The 1834 law providing free and (theoretically) equal education for every child dovetailed into the improvement fever of the 1820s, 30s and 40s. The concurrent fever for agricultural improvement as education, however, meant agriculturalists increasingly did not feel served by the existing educational systems supported through public funds.

Should the focus be on primary, secondary, or tertiary education? There was also debate as to whether schools should require students to labor on the school farms or let farms be managed by staff while students watched. Should agricultural education train agricultural scientists to work in laboratories, or boys who would return to the farm? Should students pay tuition or be able to defray the cost of tuition through labor? All these questions were debated in agricultural societies and the press in the decades leading up to the establishment of the Farmer’s High School.

The solutions put forward to address farmers’ concern over their low-class status and uncertain economic future were variations on the same theme: publicly funded education devoted to agriculture. Some suggested introducing agricultural-related curricula in primary schools and others tried their hand at secondary “labor schools”

\textsuperscript{255}Marti, \textit{To Improve the Soil and the Mind}, 163.

where students could pay part of their tuition through agricultural labor. All three levels of agricultural education were tried in Pennsylvania, but only collegiate education had any permanency. For example, there some effort made to make agriculture a part of primary education in several states including Pennsylvania.257 There may have been some small fruit somewhere in individual schools, but bigger issues of getting children to school on a regular basis and to cover the educational basics were likely deemed more important than specific vocational training. In total, the decentralized school system and low priority of book learning by most farm families meant calls for primary agricultural education largely fell flat.258 Secondary agricultural education had more success with the establishment of numerous labor schools and academies that had a smattering of agricultural science-related classes.259 One of the more successful labor schools included the Manual Labor Academy of Germantown, Pennsylvania, founded in 1829. The forty-two-acre school included workshops, gardens, barns, fields and housing for students. One contemporary farmer put it, “honest industry, learning and piety” were “united” to give students strong and healthy bodies. Students were prevented from “becoming mere

257Ross, Democracy's college, 18; True, A History of Agricultural Experimentation, 21.


bookworms” and became “qualified for future usefulness” in body and mind. The 1834 Schools Act actually told local school boards it was their duty to determine if their primary and secondary students would benefit from a manual labor curriculum. In the Act, school officials had the authority to “purchase materials and employ artisans for the instruction of the pupils in the useful branches of the mechanic arts and when practicable in agricultural pursuits.” Schools with labor integrated into their curricula were somewhat of a trend during the 1840s and 50s, yet in large institutions failed and closed within a few years. Several colleges and universities in Pennsylvania also added agricultural and labor components to their course offerings. For example, Washington and Jefferson College had a 200 acre farm connected to the school where students could take courses in practical agriculture. Similar moves were made in prestigious institutions in other states like Harvard and Yale. Still, agricultural courses remained auxiliary while literary courses dominated. The resistance of college boards to include agriculture and the repeated failure of agricultural-related schools caused progressives in Pennsylvania to turn to the state for help.

In 1853, the Pennsylvania State Agricultural Society formed a committee and called for a convention to determine if adequate support could finally be raised to open an


262 Ross, Democracy’s college, 19; Wickersham, A history of education in Pennsylvania, 430, 401, 408, 429.

263 Gates, The Farmers’ Age, 370.

264 True, A history of agricultural experimentation, 45; Michael Bezilla, Penn State: an illustrated history. (University Park: Pennsylvania State University Press. 1985), 2.
agricultural college. The state had recommended starting an agricultural college almost
twenty years before the PSAS did. A committee from the Pennsylvania legislature in
1837 reported back to the body that “agriculture must in some way be interwoven with
our education system.”265 As historian Mike Bezilla notes, traditional colleges had served
the colonies well. But as the nation took a decided turn towards democracy, Americans
increasingly “had little use for the aristocratic trappings of higher education” and
colleges’ “elitist character clashed with the democratic values of the young republic.”266
In American agriculture as a whole, this embrace of Roman republicanism meant the
embrace of the Roman agricultural ideal: georgic agriculture. For colleges to end their
practice of “shunning” agriculture and other utilitarian fields, they had to put something
down, that is the pastoral form of agrarianism. When Bezilla states that colleges avoided
agriculture because it “…did not appear to contribute to the mental or moral
improvement of student” he is precisely explaining this abandonment for one criterion for
moral behavior for the other. The georgic for the pastoral. The call for agriculture to be
“interwoven” into the state’s education system was, in many ways, an extension of a call
for republican and Georgic virtues to be inculcated into Pennsylvania’s youth. The
committee recommended the state develop an agricultural college and experimental farm
to do just that. However, nothing of substance happened after the 1837 report; farmers
had to take action themselves. Several hundred delegates for the 1853 convention came
from agricultural societies all across the state.267 In counties without societies, “friends of

265 True, *A history of agricultural experimentation*, 68.
agricultural education” were invited. Fredrick Watts, the soon to be first President of the FHS, wrote to the Pennsylvanian governor that the delegates reached “unparalleled unanimity” and “recommended the establishment of a school for the education of farmers.” The hard-fought lobbying of the state’s agricultural societies was likely the dominant factor in this achievement.

Pennsylvania was one of four states to firmly establish a truly scientific and agricultural collegiate institution before the Civil War. As Gates mentions, “farmers were not ready to follow their leaders in the movement for agricultural education.” Evan Pugh, echoed this sentiment, stating the “…introduction of agricultural science to farmers would have to be done carefully, as their skepticism [is] already high.” Pugh was arguably the most educated and passionate agricultural chemist in the nation.

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270 Williams, Evan Pugh’s Penn State, 38.

271 Gates, The Farmers’ Age, 372-373; Ross, Democracy’s college, 16.

272 Williams, Evan Pugh’s Penn State, 43.

273 Himself from Chester County, Pugh studied in Germany and England to earn his PhD in agricultural chemistry. He was a tireless and vociferous advocate for agricultural education for years before he was offered the job of president at just 30 years old. Pugh traveled and extensively observed the state of agricultural education in Europe and worked with the foremost agricultural chemists of the time. In addition, his research conclusion that most plants obtain nitrogen from the soil and not the air laid the very foundation for modern fertilizer based on ammonia and nitrates. Later in the century it would be discovered that some plants can obtain their own nitrogen, such as beans. It was known in his day that exhausted soil needed fertilizer, or added in materials containing periodic elements, to restore its viability. However, what exact elements the soil needed, in what proportions to use and where to get those elements was rather fuzzy. Yet Pugh’s work was truly the bases of knowledge by which crop yields have increased by proportions not seen before in human history by solving the puzzle of how most plants get one of the three most important nutrients, Nitrogen (N), Phosphorus (P) and Potassium (K). When Pugh gave an opinion on the state of agricultural education in the United States and the doubts he saw amongst yeoman, he spoke with firm authority. Williams, Evan Pugh’s Penn State, 15-16, 47, 51-55, 227.
speaker at the 1858 Tioga County Fair concurred college graduates in classical studies "may be so inflated with gas, or, in other words, with vanity and self-conceit, that there is no room left for anything of a practical, useful nature." Public funding for roads, canals and railroads had become mostly expected, but the large-scale education funding needed to make sure farm colleges succeeded was a level of state interference many citizens were hesitant to concede to, or foot the bill for. In particular, yeoman farmers doubted such colleges would do much to alleviate their social and economic woes. Again, the kind of instruction that would be given to students was at the heart of their doubts, not that farmers needed to change their practices at all. Many farmers had reservations about an institution with so many gentlemen farmers in its ranks. Would it be just another literary college, albeit with an agricultural bent, or could it serve them in meaningful ways? Still, the Farmers High School received its first state funding of $10,000 in 1855. $10,000 from the PSAS, $10,000 from Centre County residents and a private gift of 200 acres from a Centre County resident were also used for startup costs. Other payments from individuals donors, the state and PSAS were made periodically after these initial payments. Improvers eventually gathered enough support to persuade the Pennsylvania legislature that a scientific, agricultural college was not only beneficial to farmers but the state’s economic and social health as a whole.

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276True, A history of agricultural experimentation, 68.

277Williams, Evan Pugh’s Penn State, 67.
Construction of FHS buildings began in the summer of 1856. However, financial issues halted the work. The school finally began instruction in 1859. Over one hundred students from thirty-two different counties enrolled during the first year, but only sixty-nine completed the term. In the first several years, students from New York, Ohio, Virginia, Delaware, Iowa and Maine attended. The academic year followed a full agricultural growing season. Classes started in February and ended in December. Campus buildings were only partially completed. For example, the central building on campus, now known as “Old Main”, was only one-third complete and a report declared all but the

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280 Williams, Evan Pugh’s Penn State. 87, 7.
barn to be temporary and the barn itself to be “entirely too small.” The fields the students were to work with were full of rocks and stumps. The fee for attending the FHS was $100 for room and board, tuition and incidentals. Potential students had to be male, at least sixteen years of age, recommended by their local agricultural society, they had to provide character references and be certified by their local, state-run, public elementary schools to have met certain educational requirements. Course offerings included mathematics, marketing and agricultural genetics. Each student was required to complete three hours of labor each day. The school was short on staff and money; only three professors were there when Pugh arrived. Aside from the towering Old Main, the physical appearance of the farm was not the manicured and stately as the societies and journals frequently described the ideal farm as being and handed out awards for. However, the staff and supporters did not shrink back from attempting to infiltrate their grandiose ideologies into the landscape as well as the individuals who attended, no matter how humble their school’s beginnings were.

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Once begun, the leaders of the Farmer’s High School needed to consciously and consistently give the public signs they were acting towards the best interests of all farmers and thus Pennsylvania society at large. In essence, as this work argues, farmers needed to feel positive and secure about the transition to science and market integration. The employment of georgic ethics by improvers was key to producing those feelings.

Documents on the creation and formation of the Farmer’s High School reveal a honing in on the georgic message and rhetoric from the early days of agricultural societies and the press. For example, in naming the school, PSAS members purposefully chose to call it a “high school” even though it actually offered collegiate level instruction. Pugh wrote “high school” was chosen for the name because the word “college” would likely bring to

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mind associations of a place “where boys only contracted idle habits.”284 It was not only that drunken escapades, skipping class and general mischievousness were bad in and of themselves, but that they were a distraction from the character-building students were supposed to undertake. Organizers of the FHS hoped to ease the suspicions of farmers by proving the FHS was not a literary, elitist school dabbling in agriculture to simply fit into the spirit of the improvement era. For that to happen, farmers would need assurance from FHS leaders that the school was following georgic ethics in order to garner their support and participation.285

A zealous believer in the power of improvement, Pugh was determined the FHS would be the model for scientific, agricultural education in the nation. In addition to scientific rigor, Pugh and other administrators carefully thought out the promotional materials and curriculum to reflect the high calling they felt they had.286 The georgic notions of what made the best farmer took official form in the legislation, organization and running of the Farmer’s High School. Georgic traits encouraged by societies and the press for so long went into the very heart of the FHS. In particular, virtues like education, morality, independence and health clearly stand out in documents as the traits the schools intended to practice and instill into students. Examples of how the Farmer’s High School lived out those ethics is where we will now turn.

The georgic ethic was a specific moral code with independence as the highest virtue. This independence had to be worked for through specific regimens of inner and


285 Williams, *Evan Pugh’s Penn State*, 43.

286 Williams, *Evan Pugh’s Penn State*, 85-86.
outer conduct. One of the clearest examples of the ingraining of georgic into the school came from the first and sixth articles of the FHS legislative act of incorporation. Section one of the act states that the school shall be “an institution for the education of youth in the various branches of sciences, learning and practical agriculture, as they are connected with each other…”287 Further, section six states the school must “choose a principal for said institution, who, with such scientific attainments and capacity to teach as the board shall deem necessary, shall be a good practical farmer…” In the language of the movement, “practical” indicated a pointed commitment to non-elitist agricultural practices, in essence, a commitment that the school would teach and conduct agricultural practices within the means of yeoman farmers, not gentlemen farmers. Instruction would be valued on its efficiency in the “real world” of the barnyard, not the theoretical habits of leisured gentlemen. A speaker in 1853 warned the Mercer County Agricultural Society that they must find a “practical farmer” to run the FHS. If they hired “some cute, unscrupulous, self-styled science professor” they would be taken in by a “lying quack” who would spew “complicated terms” and collect useless implements.288 Such a fate would make it better they had “never heard of scientific agriculture all together” for “science that is a substitute for honesty…is a villainous science.” The “practical” in the coded rhetoric of agrarianism symbolized the democratic, labor centric, independent life and consequently the humble Republican virtue.

Held in tension with the emphasis on the practical, was the emphasis on the “scientific.” “Scientific” signaled a simultaneous grasping at modernity, reasoning and


precision by which one could control nature. In georgic thought, science could be a guarantor of prosperity by democratizing the control of nature. Science in conjunction with practicality purported to ensure farmers were modern yet retained their folksy humility, profitable but earned profit in a respectable way (hard work, not exploitation), forward-looking, but paid due respect to rural life. The marriage of science and practicality let farmers claim respectability for being in step with the times yet resistant to power-grabbing because they were simply too busy providing for others and full of integrity. Calling upon the rhetoric of science and practicality was an attempt to gain independence from tyrannical aristocracy and conniving capitalists alike, while still enjoying the material comforts of industrialism with a clear conscience. Thus, practicality and science were, in georgic rhetoric, inner and outer makers of a leader that maintained his independence and thus morality, when a modern world threatened to take them both away. Ideally, the school would have faculty that modeled this type of virtuous independence to students whilst teaching them the means to obtain it through agricultural practice.

The desire to be, or at least be perceived as a place to learn georgic ethics comes through even in the location of the school. Today, Penn State and the town around it are a focal point of the region and state. In the 1850s the site chosen for the FHS was not only rural but basically isolated.\(^{289}\) Several Pennsylvania counties had a bidding war for those

\(^{289}\) Williams, *Evan Pugh’s Penn State*, 42, 57. One young man desirous of attending the FHS stated he was “unable to discover the precise location of the college…” and wrote him hoping it would not get lost, a full 8 years after the school was founded. “Unknown Location.” E. S. McHaine to Evan Pugh. March 21, 1863. Letter. Pennsylvania State University Archives, Evan Pugh Papers, Group 89, Box 4, Folder 24. McHaine stated he was “unable to discover even the precise location of the college” and thus his letter requesting information on terms of acceptance was sent “as a venture.”
who would receive the honor of the institution. Nothing in Centre County made it a more remarkable place than others proposed. This isolation may have been intentional as a method to strengthen the georgic ethic in students.\textsuperscript{290} As discussed earlier, agrarian thought claimed urban life tempted youth “…removed from the moral restraint of home…” to vice and sloth. The first promotional materials for the FHS explicitly addressed the fears of adults that their children would become unprincipled, wholly self-interested and corrupt if they left rural life and occupations. In addition, the efforts to keep children at home on the farm were clearly not working by midcentury. The agricultural census from 1860 discussed the “almost universal desire to flee from agriculture and wholesome manual employments, into one of the many mental spheres of labor,” in exasperated tones.\textsuperscript{291} Traditional farming methods and social priorities, in the eyes of many rural youths, restricted social mobility, material wealth and social cachet. A middle ground had to exist for parents whose children would leave if they did not offer them a way to participate in the spirit of the age, the “self-made man.”\textsuperscript{292} An agricultural school that required a stage or rail ticket to get to any place of substantial population put somewhat of a damper on student distraction and mischievousness.\textsuperscript{293} The 1860 census lists the Centre County population at 27,000 or approximately one percent of the state’s population.\textsuperscript{294} There was no town surrounding the school, though there was an iron

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\textsuperscript{291}Kennedy, “Population of the United States in 1860,” 1864.
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\textsuperscript{293}Williams, \textit{Evan Pugh’s Penn State}, 83; Pennsylvania State Agricultural Society, “Report of the transactions for the years 1861-63,” Vol. 6, 689. The closest rail station was 21 miles away in 1859. A closer station of six miles opened in the mid-1860s. In 1862 there was a public stage road approximately 100 yards from the college.
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\textsuperscript{294}Kennedy, “Agriculture of the United States in 1860,” iv.
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furnace with its dozens of employees adjacent to the property. The furnace owner, James Irvin donated the initial 200 acres for the school. Several villages, such as the one Ayres lived in, were close but not within walking distance. The focal point of the region was Bellefonte. There was no telegraph anywhere closer than Bellefonte, which was about twelve miles from the college. The only way to reach anyone at the school was by mail (which may have been received in Bellefonte first anyway) or in person.\textsuperscript{295} Indeed, a Northumberland Agricultural Society member said upon visiting the school it was in a “very happy arrangement since it serves to keep the students entirely out of reach and influence of those temptations of vice and idleness, so common in and close around our large cities and towns.”\textsuperscript{296}

Some criticisms arose from the placement of the school as being politically motivated, that it was too far from the focal point of agricultural improvement in the southeast corner of the state. Williams concludes “apparently, many nonfarm families endorsed the secluded college’s potential for morally edifying their youth.” Records show of the one hundred and nineteen who enrolled in the first class of 1859, a majority were from eastern Pennsylvania and likely had middle-class nonfarm origins.\textsuperscript{297} Transportation to the school was possible via foot, horse and less so by rail, in any event, it was certainly not as efficient as more densely populated parts of the state. Watts defended the


\textsuperscript{297}Twenty-three students came from Philadelphia, four from Pittsburgh, eight from Carlisle, five from Reading, a handful from Ohio and handfuls from other eastern Pennsylvania towns. Weeks, “A New Race of Farmers,” 18.
placement of the school as chosen because of “soil, surface, exposure, healthfulness and centrality”, not the fact wealthy locals had proffered the PSAS search committee with offers of land, cash and lavish dinners.\(^{298}\) A claim the FHS had good soil and was equally distant, or as later school president would quip “Equally inaccessible”, “from all parts of the state” was a claim of georgic practicality and democracy.\(^{299}\) If the FHS was located in the southeast of the state, it would have been closer to the majority of its patrons and allowed for more effective lobbying in the state capital. Yet, in georgic rhetoric, such a location would blatantly cater to elites and politicians. Not only was a southeast location undemocratic in its treatment of yeoman farmers living on the opposite end of the state, but more detrimental it was an admission that a physical manifestation of georgics was forced to rely on wealthy elites and politicians, who were suspected of being greedy and corrupt, for life support. Such an admission would gravely counteract over 70 years of messaging from improvers that agriculture was virtuous, that its practice and improvement needed no justification whatsoever.\(^{300}\) Watts’ claim of the Centre County location as a “healthy” reminded readers that cities were places of moral and physical degradation. An institution that was perceived to rely on elites and an urban setting for success was evidence the yeoman heart, impermeable to corruption, had examined the school, found it wanting and rejected it.

\(^{298}\)Bezilla, *Penn State: an illustrated history*, 5.


\(^{300}\)For example, the introduction to the 1860 agricultural census states “The importance of agriculture…is so well understood…as to render superfluous any argument to prove its value.” Similar statements are common in speeches arguing for improvement, such as at fairs, Richard Abbott argues farmers actually got sick of hearing them. Richard H. Abbott, “The Agricultural Press Views the Yeoman: 1819-1859,” *Agricultural History* 42, no. 1 (1968), 35.
Concerns of the FHS staff about the moral health of students also manifested in rules meant to control student behavior. Equally important, maintaining the image of the school as a moral institute for the benefit of parents and an often-doubtful public was imperative. Students were told they “…must consider themselves pledged to conform to all the rules and regulations…” A copy of said rules revealed students were kept on a tight schedule. Students woke with a morning bell and had a full day until an evening bell signaled lights out. Roll was called every morning in chapel where each student was required to sit in an assigned seat. “Exercises” were also required in the chapel before lunch and dinner. In between gathering in the chapel, students attended class. After dinner, more study hours were in store. Daily bedroom inspections for cleanliness were also required as well as filing of reports of any farm work done. Students were required to pay for any damages done to school property and appear at the table, chapel and all classes “neatly dressed and in with proper apparel.” Students were to treat all animals, working or not, at the school with “proper regard for humanity.” A strong rebuke was included in the rules, describing animal abuse as “a vice characteristic of low minds, destitute of refinement and sensibility.” Students were further required to make a written record of exceptions they had been granted from staff for privileges large and small, including missing a class, taking meals in rooms while sick, staying up late or leaving class for more than ten minutes.


302 Penn State University. “College Rules and Regulations of the Farmer's High School of Pennsylvania.” Box 11. Oversized Materials Collection, 1776-2008. Penn State, State College, PA. No date. This bulletin has no date associated with it. However, the inclusion of “Farmer's High School at the top indicates it was printed between 1859, when the instruction began at the FHS, and 1862, when the FHS was renamed the “Agricultural College of Pennsylvania” upon receiving the Morrill Grant.
Pugh would stand for no violation of the rules. One student remembered, “He did his duty and expected everyone else to do theirs and woe to you if you fail.”303 Pugh laid out his high expectations for students in his inaugural address and when published, it was a lengthy twenty-six pages long.304 A lack of perceived control and uprightness would surely endanger the mission of the school if rural folk perceived it was not an institution that taught the values they believed would enhance their social and economic standing. Pugh displayed his awareness and likely apprehension of these concerns in a private letter to a trusted board member, Hugh McAlister.305 Several students had become excessively drunk after getting alcohol from a local tavern. Pugh went so far as to threaten the tavern owner with a lawsuit unless he sold, or rented his business out to a “more responsible party” or left town altogether.306 In Pugh’s words, the tavern owner was “…giving injustice to the institution and every parent that patronizes it.”307 A student’s remembrance tells of Pugh forcefully dragging another student out of the dining hall by the collar for skipping his algebra class. Pugh, in front of everyone, ordered the student to leave the dinner as an act of discipline. The young man attempted to eat his food before


304 Williams, Evan Pugh’s Penn State. 83-84. The aforementioned “rules and regulations” bulletin was one, oversized page in length, with 40 rules listed.

305 Evan Pugh to Hugh N. McAllister, March 2, 1860, Pennsylvania State University Archives, Evan Pugh Papers, Group 89, Box 5, Folder 25.

306 Williams, Evan Pugh’s Penn State. 86.

307 Evan Pugh to Hugh N. McAllister, March 2, 1860, Pennsylvania State University Archives, Evan Pugh Papers, Group 89, Box 5, Folder 25. Pugh was a staunch advocate for sobriety. For example, during his time abroad was not fainthearted in criticizing Europeans and classmates for their drinking. Evan Pugh to West Chester (Pa.)Register and Examiner, October 31, November 11th, November 25th, 1853, Box 1, Folder 7.
leaving or possibly ignore Pugh, but an angry Pugh bounded across the hall and ejected the student as others watched in “stunned silence.”

Pugh had no qualms about telling students when they failed to meet his high standards, even going so far as to expel especially unruly ones. The FHS under Pugh’s leadership was not entirely iron-fisted, however. For example, Pugh proposed to board members that students who did well in terms of behavior and academics should be given a medal and be treated as “gentleman”, presumably by the staff. Another letter likely to an upperclassman asked to be excused from the mandatory three hours of labor a day shows Pugh was not unwilling to reward exemplary behavior. Though, Pugh was hesitant to allow the student to skip the work requirement due to it being unfair to others. However, he was open to letting the student do alternate but equal work in a laboratory.

Pugh seems to have thought himself responsible for maintaining moral order at the school. Indeed, the literal and figurative success of the institution depended on it. To Pugh and other improvers, the stakes were high. The state government and agricultural community (Pugh went so far as to claim the global agricultural community) was watching to see if the most extensive embodiment of Georgic rhetoric could live up to its promises. In 1864 Pugh quoted the president of Harvard in his annual report to the FHS board of trustees, legislature, governor and public saying parents held university presidents responsible for their children’s “moral welfare and intellectual progress.”

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308 Williams, *Evan Pugh’s Penn State*, 82-84.

309 Mr. Smith. Mr. Smith to Evan Pugh, June 12, 1863. “Skip Field Work.” Pennsylvania State University Archives, Evan Pugh Papers, Box 3, Folder 10.

310 Williams, *Evan Pugh’s Penn State*, 84.

311 Williams, *Evan Pugh’s Penn State*, 244.
On one hand, Pugh had to assure parents their sons were being taught to revere physical labor and the modest life of agriculture and thus ensure their virtue, yet on the other, he had also instructed the students in cutting edge science and mental labor to ensure students’ acceptance into modernity. Thus, the means of moral instruction via isolation and strict rules were hoped to shape students in what georgic agrarianism said farmers needed to succeed in a new economy and society. That is training as culturally refined people who could just as comfortably “sit at the table” with wealthy capitalists as they could expertly plow a field. Improvers said the new collegiate model would ensure future farmers’ financial security in a new economic model, continue conservative moral strength and thus social acceptability.

Physical health was important in improvement rhetoric and as hinted above, was seen as intertwined with moral health. Said another way, a healthy body signaled a healthy (virtuous) heart and mind. The second president of the FHS boasted that students obtained a “sound mind and sound body” through the joint regimen of mandatory class and fieldwork. He tied the benefits of a healthy body to a happy mental state and willingness to “contribute to the good of others.”

Today, the positive effects of physical exercise on mental health is understood to be legitimate. However, the repeated association of a healthy body and mind made by improvers had more to do with georgic notions of morality than any chemical reaction in the body. For example, one of the most obvious ways to maintain a healthy body was to conduct physical labor. Improvement writers consistently cast nonlaboring people as weak, pale, delicate, finicky and sickly.

312 Allen, "The Economy of Intelligence." 249.

Georgic reasoning claimed these defects resulted from their sedentary, leisurely lifestyle and by extension implied they were signs of sloth and greed. The freehold concept promised anyone who was willing to work hard on their land was guaranteed social, monetary and personal freedom as well as independence.\textsuperscript{314} A farmer who worked hard enough was beholden to no one. Georgic rhetoric thus took weak physical and character traits to be a sign of willing dependence and subservience. Why would one choose not to be independent? Conversely, physical labor was taken to be a sign of having or working towards independence. Thus, a healthy body was, in theory, an outer marker of the inner virtue. The staff at the FHS were required to implement supposed markers of physical health into their institution; the key of such markers being the student labor requirement.

The FHS had very practical reasons to require student labor. One, the school was tight on funds. Even though promotional materials stated the school would not benefit monetarily from student labor, repeated financial woes, like the inability to pay the contractors to complete campus buildings, make it hard to believe that was so.\textsuperscript{315} Second, improvers had claimed for decades that no labor was undignified because all labor had the potential to raise one’s moral, fiscal and social status. The only exception to this rule was labor that was conducted with a total absence of intellect and planning towards an improved future. Initially, the school had committed that student labor would only be as relevant to their instruction in agriculture. However, that rule was set aside rather quickly. Students did indeed feed livestock and work in the fields, but they also did “whatever [the staff] saw fit” like sweep classrooms, do dishes, chop wood, haul manure, carry water

\textsuperscript{314}Eisinger, “The Freehold Concept,” 44-48, 50, 53.

\textsuperscript{315}Williams, Evan Pugh’s Penn State, 7.
and empty chamber pots. Watts reported to Pugh before Pugh arrived “The boys themselves perform the services cheerfully” with the “idea that all labor is agreeably honorable.” Some students felt different and shirked their duties when possible by hiding or loafing once instructors had walked away. A group of parents seem to have agreed not all work was as honorable as improvement rhetoric claimed. Consequently, the parents created a petition for the board of trustees arguing that kitchen and other “menial” tasks were not beneficial to a “farmer’s study” and suggested “three or four colored men be hired” to complete unwelcomed tasks. The parents further proposed each student would help pay for the African American labor. If the tasks were beneficial to the “farmer’s study” the parents claimed they “would not object to them.”

To the public at least, the school could not abandon the principle or be called hypocrites. Letters to Evan Pugh from parents and potential students alike show they bought into the agrarian rhetoric that a healthy body was a sign of good character, or at least a leaning that way. However, they were not willing to associate with literally any form of labor necessary on the farm to prove it. Pugh himself seems to have also had doubts as to the utility of the labor requirement. He hoped students could instead conduct farm experiments using scientific principles. However, he kept the rule for political

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318 Pugh, Evan. The Agricultural College of Pennsylvania; Embracing A Succinct History of Agricultural Education in Europe and America, together with the Circumstances of the Origin, Rise and Progress of the Agricultural College of Pennsylvania; as also a Statement of the Present Condition, Aims and Prospects of the Institution, its Course of Instruction, Facilities for Study. 47. Marti, To Improve the Soil and the Mind, 200-202; True, A history of agricultural experimentation, 46.
expediency, stating "We have adopted a somewhat popular plan [popular being modeled after the many labor schools] not because we did not appreciate and desire a plan more scientific, but because the necessities of the times have required the course at our hands which we have followed." Pugh realized the FHS captured the Morrill grant in 1862 and they had to tread carefully and avoid appearing too much like traditional colleges.319 Too many farmers still needing to be convinced of the merits of commercial and scientific agriculture. Professor Waring told Pugh that “industry and good moral habits” were “imperative” amongst the students, but that is was “impossible to retain students who were deficient in these respects.” Apparently, even some improvers realized their rhetoric did not always apply to reality. The “no undignified labor” rhetoric was too essential to improving the image of farming to outsiders. To insiders, it was essential to persuade yeoman the school could be trusted for their son’s moral health and gentlemen farmers the college was indeed instilling the latest scientific methods.

The rhetoric practiced by the Farmer’s High School fit right into that exhibited by the life of Bucher Ayres. Ayres does not record visiting the school in his surviving documents. Yet, the physical, rhetorical and relational closeness to himself guaranteed he was aware of the school and likely a nominal supporter of its work. From the printed materials he read, his social and business activities and the people in his life, Ayres was inescapably exposed to Georgic agrarianism and the FHS. For example, the agricultural journals Ayres read reported on the FHS from its inception and through its

development. Ayres also had an opportunity to attend events put on or supported by the FHS, such as the PSAS sponsored state agricultural fair discussed in chapter one. The second president of the school and as well as a state Senator gave a speech at the fair littered with Georgic arguments so common in the mid-nineteenth century and yeoman north. Another event, an apparent equipment trial at the FHS, was apparently attended by a crowd of local farmers that could have very well included Ayres. Pugh set up the trial and his correspondence reveals he specifically elicited donations of two reapers for the sake of comparing them. One reaper was a donation from his native Chester County Agricultural Society, a “Pennock’s Iron Harvester” manufactured by Graham, Emlen and Passmore. The other machine, a “Self-Raking Reaper and Mower”, was manufactured and donated by Cyrus McCormick. Upon securing the donation of the Pennock’s, Pugh wrote to a McCormick agent informing him of a donation from his “friends in Chester County” and that the company also donated a “machine to try with the other.” McCormick takes the bait and “directs” a machine be donated to the “Pennsylvania Agricultural College” on the condition it is given “thorough and impartial trial” alongside the Pennock’s and that Pugh “will report the result.”

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322 Pugh, The Agricultural College of Pennsylvania; Embracing A Succinct History of Agricultural Education, 61.

McCormick machine was “…witnessed by a large number of farmers, many of whom own other reapers.” Given Ayres repeated excursions to see other equipment and systems significantly smaller in scale and occasion, it is hard to believe he did not take the opportunity to witness the most well-known reaper of his day in action. The rhetoric in fair speeches were explicitly georgic. Each speaker used a barrage of georgic arguments, but ultimately these arguments support the notion that free agricultural labor combined with empirical thinking leads to “wealth”, “power”, “security” “prosperity”, “property” and ultimately self-emancipation from the tyranny of economic and moral authority being held in the hands of a few. The official word from the FHS on the competition between the reapers was to diplomatically praise the merits of each. It recommended larger farms that focused on grain production make the $175 investment in a McCormick reaper while smaller farms where “the difference in cost would be of importance” to purchase the other model at $135. The equipment trials were less explicit, yet still, guide a very real step in many ways towards the georgic ideal of a virtuous (moral and republican) independence in a judicious manner.

The rhetoric that guided the FHS was spread primarily through relationships. Yes, the written word certainly was a factor, but as already shown with the case of Ayres distributing agricultural journals, agricultural fairs and society meetings, the organizing


324 Ayres, Journal, October 13, 1865, March 28, 1865, May 13, 1865,

325 Cowan, "Address,” 224.

326 Pugh, The Agricultural College of Pennsylvania; Embracing A Succinct History of Agricultural Education, 60.
that was required by farmers to get the rhetoric off the ground made the socializing aspect indispensable. The network of relationships in Ayres’ life and the FHS continuously intertwined. As mentioned in chapter one, Ayres’ brother in law, Stewart Lyon, was the brother in law to Evan Pugh’s wife, Anne Valentine. The Valentine family owned an iron ore furnace in Bellefonte as did Ayres’ father in law John Lyon and James Irvin, who donated the initial 200 acres for the FHS. Iron and agriculture were the chief industries of the region. Ayres’ fields and that of the school were recently cleared of their timbers to be used as fuel for surrounding iron furnaces. According to Williams, the iron industry “literally” funded the FHS. The industry also gave Ayres exposure and connections to the people most intimately involved with Georgic rhetoric in Pennsylvania. This included men such as Fredrick Watts, Hugh McAlister, Evan Pugh, James Irvin and James Beaver. For example, Ayres recorded that an FHS trustee, W. Kaine, stopped by his house for a visit in 1864 on the way to a meeting at school “for election of President W. H. Allen.”

Pugh and Ayres brothers in law who ran the family iron furnaces, George and William Lyon, conducted a series of business transactions. For example, letters from George reveal Pugh was purchasing charcoal from his colliers who were already making charcoal to fire the Pennsylvania Furnace. In addition, George seems to have been buying, selling, or storing produce for the Farmer’s High School. William asked Pugh to

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analyze a thick “lime residue” clogging up the “boilers” of the “steam engines” used at the Pennsylvania Furnace. The letter was written by Rev. Robert Hamill, the husband of Jane’s twin.  

Hamill wrote with the excuse that Pugh “might be interested in discovering the elements of which it is composed.” Pugh would have indeed been interested in practical matters of the chemical composition of local water sources and soil. However, the Lyon family likely saw an opportunity to have guidance on how to fix their problems at the furnace by the preeminent chemistry professor who was aware of his need to ingratiate himself to the locals.

The sources that informed Ayres of georgic rhetoric readily turned to Pugh and the FHS for legitimacy or for help in their agricultural practice or accepted his suggestion of partnership. Pugh’s letters reveal these connections came from a wide range of corporate, public and private individuals. The agricultural press and seed dealers alike sought to benefit their businesses though partnership with the FHS. Orange Judd, the editor of the American Agriculturalist, proposed Pugh write an article informing readers of the goals and accomplishments of the school. In almost the same breath, Judd states his urgent desire to reach 100,000 readers. Five months later, Judd once more wrote about his desire to obtain new subscribers due to fear readership will drop as farmers enter the Civil War. A third letter from Judd yet again draws a clear link between his own

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330 Egle, Pennsylvania Genealogies, 396.

want for subscribers and Pugh’s want of acceptance for his school. Judd states that he has approximately 15,000 subscribers in Pennsylvania who would benefit from an article by Pugh assessing the state of agriculture there and in the nation. Later, Judd asks Pugh for a letter of introduction to his renowned chemistry mentors Sir John Bennett Lawes and Sir Henry Joseph Gilbert. Luther Tucker, the editor of the Country Gentleman, similarly asked Pugh to write about the FHS and to cross evaluate “the views” of another chemist regarding the quality and worth of a fertilizer. Pugh apparently did not agree with the assessment of the other chemist. Tucker responded in relief, stating he had “long endeavored to exclude” the “bogus” claims of the “ignorant” chemist “from reputation” in his publication. Horace Greeley, influential nineteenth-century newspaperman and founder of the New York Tribune, recognized the importance of the FHS, even telling Pugh he would publish information on the FHS “directly in all of our additions.” The Genesee Farmer and Horticulturalist also welcomed partnerships with school.

As already discussed above, farm implement manufacturers like Cyrus McCormick and Graham, Emlen and Passmore were well aware of the financial and reputational opportunities to be had in association with the FHS. Graham, Emlen and

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Passmore along with another dealer in Philadelphia, Rodgers and Gest, requested Pugh analyze the fertilizers they sold to farmers. Graham, Emlen and Passmore went so far as to state about their fertilizer that, “…we really know nothing of which we sell…” and “cannot avoid experiencing a daily increasing jealousy for our reputation as honest dealers.” In addition, they stated their intense desire to disassociate themselves from the “cheatings done in this business.” If the dealers could hire Pugh, they could then do their “duty” and sell a “uniformly honest product” and be “shielded from reproach…” if Pugh’s name was “to go along” with their product. Rodgers and Gest requested similar analyses by Pugh and provided him with a free sample to study. They were disappointed when Pugh suspected the dealers of defrauding farmers by selling lower grade fertilizers than they had advertised and even implied so in an article in the *Country Gentleman*. Rodgers and Gest claimed the discrepancy lay in the fact that Pugh had analyzed two different batches of their fertilizer and were unaware of the difference in quality until Pugh informed them. The dealers had given Pugh one of the samples free of charge and were “…all to glad to add our own efforts to the furthering of the interests of agriculture.” Pugh, however, valued one sample to be worth $78.50 per ton and the other only $25. He thus cautioned farmers in his review to only purchase fertilizer from dealers with a “legal guarantee” of its quality, explaining to farmers that samples were valued based on “no theoretical” calculations, but “plain, simple commercial values” of

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the ingredients which a farmer could go out and buy, assuming he went to the cheapest source in the marketplace. Next, Pugh stated, “there is not, therefore, the slightest room left for the quibbles of the manufacturers of bad fertilizers.” With these two statements, Pugh shut down any doubts by farmers who were skeptical of scientific analysis of fertilizers, thus protecting the good name of science, but also protected the georgic honesty and virtue of farmers, making sure was not taken advantage of by dishonest dealers in the marketplace. If farmers were to fully transition to commercial production and rely on the science behind it, they had to be guaranteed their transition was safe and reasonable. In this way, the FHS become a mediator between farmers and businesses in the market place, like seed, fertilizer, implement and publishing companies, who realized their products would be in high demand if and when commercial production became the new norm. Thus, these businesses sought the stamp of approval by the head Georgic institution in the state, the Farmer’s High School. If they could show themselves to be selling quality products that helped farmers gain independence and esteem, certainly they could claim they followed the same Georgic moral code and as such were trustworthy.

Public partnerships can be seen in correspondence with agricultural societies and government bodies. The Centre County Agricultural Society and Luzerne County Agricultural Societies, for example, both requested that Pugh give the keynote address at their annual fairs. Meanwhile, the Columbia County Agricultural Society requested Pugh send the society printed materials to answer the “frequent” queries by Columbia County residents looking to learn more about the FHS. The speech by FHS president Allen at

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339 Invitation Committee of the Centre County Agricultural Society. Invitation Committee of the Centre County Agricultural Society to Evan Pugh. September 8, 1860. “Invitation to speak at Centre County Fair.” Pennsylvania State University Archives, Evan Pugh Papers, Box 4, Folder 14. Steuben Jenkins. Steuben
the PSAS fair Ayres attended in 1866 is another example of agricultural societies claiming Georgic legitimacy through association. The networks built by agricultural societies and the press earlier in the century were functioning quite well. A plethora of letters similar to the one from Columbia County reveal people had learned of the school through printed materials and personal relationships.340

State and federal bodies also reached out to the Farmers High School; the secretary of the Ohio State Board of Agriculture, John S. Klippart, requested Pugh’s help to “organize our own agricultural college” through the Morrill Act.341 Klippart also requested Pugh send him copies of “the organizing act of your college...rules, regulations, course of study etc. etc.” and in return would, in turn, furnish Pugh with a complete set of reports done by the Ohio Board of Agriculture. The Morrill Act was passed a mere five months before Klippart wrote to Pugh. He was no doubt aware that the FHS, amongst all schools in the nation, was easily one of the most prepared and well-positioned to apply for federal funding. Ohio would benefit by following the template set out by Pennsylvania in its application. The secretary and president of the Michigan State


Horticultural Society, supervisor of Michigan’s experiment station requested information on the FHS. He stated that his own state’s agricultural college had undergone “many discouragements” and he hoped for inspiration from the FHS as Klippart did.\textsuperscript{342} The same Isaac Newton mentioned in chapter two wrote to Pugh that “we are looked forward for much interesting matter from your pen for our report…”\textsuperscript{343} Newton was likely referencing a report by the agricultural department of the United States Patent Office of which he was head. When Ayres recorded reading a report from Newton in 1865 and 1866, the patent office division had by then become the United States Department of Agriculture.

For the farmer, state sponsorship of an institution of higher education signaled that georgic virtues, which promised social, moral and economic uplift of the farmer, were approved of by the state. Farmers were actively encouraged by the state to adopt georgic rhetoric as a solution to the drastic changes in the face of industrialization and democratic land ownership. World industrialization meant the demand for agricultural products increased but widespread land ownership in the United States also meant increased competition to fulfill the market demand. At the same time, Pennsylvania farmers realized their ability to meet the demand was diminishing as their children left home for nonagricultural pursuits, their soil was less fertile than that in the west and those


who used more efficient methods took a greater share of the pie. A persistent image of yeoman as crude, low and unrefined compounded these economic woes. Yeoman in Pennsylvania faced the prospect of conforming to scientific methods to increase production or be squeezed out of their own livelihood. To access the social, moral and economic uplift needed to stay financially solvent and socially acceptable, the agricultural improvers encouraged them to educate themselves through printed materials and discourse with other farmers. The next generation would also need to be equipped, but the current education system woefully prepared rural youth to farm successfully in the future. Those in the minority who subscribed to improvement saw this as an urgent problem to be remedied with collegiate level instruction in agriculture. However, the majority of farmers remained skeptical such an institution would actually serve their needs. Still, enough support was organized and a collegiate level school was founded in 1855. The FHS worked hard proof they would develop both the body and mind of their students and thus would not betray the interests and morals of agriculturalists. In practical terms, this meant the FHS had to show the public that internally they inculcated students with Georgic rhetoric through a mix of manual labor and theoretical curriculum. External actions to prove trustworthiness by the school included partnerships with the public, private and corporate bodies like state governments and agricultural press. These external actions were very apparent in the life of Ayres. The sources that informed him on practical and rhetorical matters willingly requested or agreed to partnerships with the school, with the hope to strengthen their own claims of legitimacy with yeoman. Ayres’ visit to the PSAS state fair in 1866, readerships of the Country Gentleman and American Agriculturalist and reports by Isaac Newton are examples of this. In a word, the
educational institution established by gentleman farmers, agricultural societies and the press in Pennsylvania bolstered the Georgic rhetoric they championed. Further, their successful agitation of the state government for funding meant georgic rhetoric became the official guideline for agricultural commercialization in Pennsylvania.

**Conclusion:**

Georgics promised to give Pennsylvanians solutions to the social, economic and moral questions industrialization and democracy posed. People would have to be fed, sheltered and fueled drastically different if the state, nation, and its people were to keep pace with the times. Agriculture, the occupation of a majority of citizens, had to be changed, which presented risks to those doing the changes. If framed the right way, supporters of agricultural improvement hoped to persuade farmers to take the risks associated with commercial agriculture. Using a georgic paradigm, they claimed that commercial production could present opportunities for financial, social and even moral rewards. The marketplace farmers were being called on to enter was largely uncharted territory. On the theoretical end, what constituted ethical behaviors in commercial production? On the practical end, what was the best method to harvest small grains? Or to make butter? Both types of questions had to be answered for farmers to feel comfortable tasking the risks of marketplace integration. Improvers claimed farmers would receive ethical and moral guidance in the new agricultural mode of production from the georgics and practical guidance from scientific methods. If farmers used both, they would find financial profits and societal respect.

Gentlemen farmers and agricultural societies began the persuasion campaign in earnest at the end of the eighteenth century. The first agricultural society in the United
States founded in Philadelphia in 1785 was populated with wealthy gentlemen farmers who lacked much practical experience. Finding yeomen adherents to their causes was hard. The mostly upper class nature of societies, shaky science, lack of time, resources and trust of yeomen to participate, and overly technical publications. Agricultural fairs were the only popular feature of agricultural improvement until the start of the agricultural press in the 1820s. By mid-century agricultural journals were so popular that they even crossed over into gleaning not only masses of rural subscribers but also urban ones. The press aimed to educate every member of the farming household, male, female, young, old and employee on the best agricultural practices and georgic traits like thrift and hard work. The press further defined what made a moral participant in the marketplace and how to use the best farming practices as a means to reduce marketplace integration risks as much as possible. The popularization of georgics by the press lead to the state government of Pennsylvania setting aside funds to begin the Pennsylvania State Agricultural Society in 1851. The establishment of the PSAS marketed an official sponsorship of georgic ethics to guide the agriculture of the state into the future. Agricultural societies had become popular as well, and partially as a result of, the agricultural press. Smaller town and county societies abounded after the 1820s. Still, by mid-century large gains such as the creation of an agricultural press, a plethora of societies, and holding fairs were converting rural people over the commercial production fast enough to suit most supporters of improvement. They aimed for farther reaching indoctrination of georgics and science through a system of agricultural education in public education. Attempts had been made to get agriculture to be taught in primary and secondary levels but had failed. A series of farming schools had also popped up
beginning in the first decades of the century but also almost all failed. However, a major victory was won in 1855 with the establishment of the Farmers High School. The college level institution also received funding from the state government and an explicit mandate to teach agricultural subjects. The founders of the school stuck to a hardline of teaching scientific yet practical curricula, as the georgic ethic and democratic ideals it purported to foster demanded. It was hoped this inclusion of georgic and science at a collegiate level would give agriculture a never before attained status as a legitimate, moral and thus noble, occupation. The attainment of the Morrill Land Grant status by the FHS in 1863 marked a further official acceptance of georgics by the federal government as proper guidelines for the agricultural future as well as for a system of ethics that has its roots in rural life and system designed to appeal to rural sensibilities. Land Grant status also signaled to some degree that the federal government saw the FHS as already acting as a model for what it wanted agriculture to look like in the future.

In the long view of the late nineteenth and early twentieth centuries, georgic hopes for an idyllic, majority agrarian society, in Pennsylvania and the nation, have been strongly refuted. Since the period discussed here, farmers voted with their feet. They left the farm en masse for the city and to pursue nonagricultural lives and interests. However, the debate over what constituted a “good farmer” as humanity moved towards industrialization was overwhelming won by the georgic rather than the pastoral, for it met American needs to be competitive on the world stage and Pennsylvanians to compete with more fertile lands to the west and cope with drastic shifts in the largest occupation. It met the needs of farmers in general everywhere to claim social respect through the use of science, which was fashionable, pulling them out of the realm of superstition, claim
respect for their work on the front lines to protect independence of all Americans and claim respect as folk who could be consumers of luxury goods now abundantly available in modern life. As the system became more entrenched, if a farmer chose not to commercialize, tangible, negative consequences in financial and reputational terms became more and more real.

Georgics, as it developed in Pennsylvania, was a moral ethic that put rural people on a pedestal while stimulatingly telling them they needed to be improved upon and refined. It tied success at marketplace integration directly to a moral code. It gave marketplace participants, at least yeomen, guidelines and admonishments like instructions to be thrifty, hardworking, curious and constantly in pursuit of education as a means to improve their social and economic standing and image. Georgics, it was hoped, would allow farmers to claim equal worth as citizens. This could come from the virtue one supposedly gained through their contribution to society as producers and as the most virtuous citizens who tapped into the most virtuous occupation, farming. A new economic system and form of democratic government offered farmers an opportunity to show one could be noble and virtuous without being nobility. President of the FHS William Allen hinted at this when he stated his students were eager to do good things for society.³⁴⁴ If a majority of citizens could be convinced to tap into the virtue of agriculture but in a way that suited the modern, industrialized needs of Pennsylvania and the nation, surely such a state and nation could prosper in every realm, economically, socially and morally. Farmers were the only citizens in a democratic society capable of being truly,

morally independent. Farmers could create their own wealth, moral worth and thus guarantee their continued independence. Farmers, in a word, had the unique ability to create their own virtue. If farmers were willing to sacrifice their security, they could claim this virtue for their own.
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