FARMERS, SCIENTISTS, AND OFFICERS OF INDUSTRY:
THE FORMATION AND REFORMATION OF LAND-GRANT COLLEGES
IN THE NORTHEASTERN UNITED STATES, 1862-1906

A Dissertation in
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by
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Abstract

This dissertation examines the formation, reformation, and standardization of land-grant colleges in the Northeastern United States during the last four decades of the nineteenth century. It is a history that explores the turbulent origins of land-grant colleges in Maine, Massachusetts, New Hampshire, Rhode Island, Connecticut, Vermont, Pennsylvania, New York, and New Jersey. A coalition of gentlemen farmers from state agricultural societies, scientists trained in German universities, and economically-minded statesman led the region’s land-grant movement in the 1860s and 1870s. Men like Daniel Coit Gilman, Evan Pugh, Samuel Johnson, Andrew Dickson White, and Justin Morrill were intent on building institutions that could nurture scientific study and advance agricultural, industrial, and national development. These educational reformers wanted colleges with advanced curricula and stiff admissions standards, which would graduate leaders for a new economy in science, engineering, and business. The rise of state granges in the 1880s organized farmers against this “National Schools of Science” model. Farmers held a proprietary attitude towards land-grant colleges, due to the legislation’s commitment to agriculture and the industrial classes, and demanded vocational curricula, required labor, and broad access. Grange leaders insisted that land-grant colleges abandon advanced science and liberal arts courses in favor of an agricultural curriculum and practical farm training to become true “Peoples’ Colleges.” It was hoped that such vocational programs would curb the rapid outmigration of rural youth to urban, middle class jobs occurring in the latter half of the nineteenth century, by returning college graduates home to the farm. By the 1890s, farmers succeeded in reforming the region’s higher education landscape by seizing land-grant funds from Brown, Dartmouth, and Yale and founding new colleges that would in time become the University of Connecticut, the University of New Hampshire, and the University of Rhode Island. The grange only briefly implemented their practical education model at these new institutions, coming into competition with the vocational programs of an emerging public high school sector. To remain viable and increase enrollments, the institutions of the land-grant reformation minimized their agricultural curricula and were refashioned as “state colleges.” With enhanced academic standards, a burgeoning campus life, and no required labor, these new state colleges abandoned the old mantra of producing farmers, and embraced a new role as gatekeepers of social mobility into the middle class. The land-grant colleges maintained their historic commitment to the agricultural classes through agricultural extension, short courses, and rural community outreach. Cornell University became a national leader of this emerging land-grant college standard: rigorous academics, liberal curricula, and extension and outreach to farmers and agricultural communities. This history reveals that the guiding principles of land-grant colleges were formed through contentious inter-class dialogue between farmers, scientists, and bourgeois reformers. Industrialization and the rise of modern capitalism produced economic classes with conflicting educational visions and curricular demands, and the process of creating and controlling land-grant colleges is best conceived as a contest to protect or elevate the status, power, and economic privileges of different classes. The sources of the tension were opposing beliefs of the proper progression of America capitalism and land-grant colleges’ relationship to that development.
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This dissertation is dedicated to farmers like my late grandfather Gerald Masters and his wife Helen Masters, who joined granges to help their neighbors and preserve their community, family, and way of life.
CHAPTER ONE
Farmers, Scientists, and ‘Officers of Industry’: The Formation and Reformation of Land-Grant Colleges in the Northeastern United States, 1862-1906

Introduction
“The design was to open the door to a liberal education for this large class at a cheaper cost . . . to offer something more applicable to the productive employment of life . . . It would be a mistake to suppose it was intended that every student should become a farmer or mechanic.”¹ – Senator Justin Morrill

“If I understand the intention of these grants it was to give instruction in agriculture and the mechanic arts: elevating the farm and the farmer, and giving them an education of a practical nature and in a specific line.”² – Amos Winslow, Vermont Farmer and Grange Member

“Our main purpose must be to send out into all parts of the State and Nation thoroughly trained graduates, who should develop and improve the main industries of the country . . .”³ – President Andrew Dickson White, Cornell University

Overview

The Morrill Land Grant Act of 1862 initiated a class⁴ conflict over the direction of higher education in New England. State level debates over the purpose and form of land-grant education lasted until the end of the nineteenth century, reaching peaks of intensity during the passage of the Hatch Act of 1887 and the second Morrill Act of 1890.⁵ The guiding philosophical principles of land-grant education emerged through a contentious, inter-class dialogue between farmers, academics, and bourgeois reformers. Many farmers embraced a utilitarian vision of land-grant education, hoping that practical studies would increase the profitability of their vocation and

⁴ For a discussion of how class is conceptualized in this dissertation see appendix.
keep their sons from leaving the farm, the rural community, and the class. As farmers resisted their sons’ migration and mobility through organizations like the Patrons of Husbandry (hereafter the “Grange”), reformers like Justin Morrill, Andrew Dickson White, Ezra Cornell, and Daniel Coit Gillman promoted social mobility as a tenet of their bourgeois vision of land-grant education. These reformers wanted to give farmers and workers access to the new middle class ranks of professionals, business managers, and government bureaucrats, and to make the land-grant college a place where new discoveries in the sciences could be applied to the advancement of industry, state, and society. It is a history that reveals how land-grant college history is intertwined with the dialectics of class interest and social change.

These divergent visions intersected in the Northeastern United States, where unlike in the Midwestern and Western regions, the federal land-grant was often connected to traditional colleges established generations earlier. This dissertation explores how the coupling of the traditions of the old-time college with the goals of the Morrill Act produced a philosophical tension, and how through attempts to resolve that difference, farmers and bourgeoisie came to define their class values and educational priorities. Through archival research at the University of Connecticut, Cornell University, the University of Rhode Island, Brown University, Yale University, the University of Vermont, and the University of Maine, this study explains the unique pattern of land-grant education development that unfolded in the Northeastern United States (Table 1.1 is a summary of the land-grant colleges in the Northeastern United States that are the subject of this dissertation.)

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Land-grant education in the Northeastern United States (1862-1905) progressed through four distinctive phases. Each historical break is marked by social and economic changes that influenced class-based demands on land-grant colleges. In the first phase (1862-1872), bourgeois reformers promoted the Morrill Act as a means to scientific discovery, technological innovation, labor development, economic expansion, and national growth. The legislative champion of this perspective was Representative (and later Senator) Justin Morrill of Vermont. He endorsed his bill before the House of Representatives on June 6, 1862, and in the Whig political tradition, explained how this internal improvement program could benefit the nation-state and the economy:
Science, working unobtrusively, produces larger annual returns and constantly increases fixed capital, while ignorant routine produces exactly the opposite . . . These colleges, founded in every state, will elevate the character of farmers and mechanics, [and] increase the prosperity of agriculture, manufactures, and commerce . . . and . . . we shall have all that moves our great European competitors, namely the increase in wealth and power. 7

Proponents explained that industrial and agricultural class offspring could use their land-grant education to move beyond the farm and workshop and assume productive employment in the new economy. New York’s land-grant spokesman Andrew Dickson White stated, “Our main purpose must be to send out into all parts of the State and Nation thoroughly trained graduates, who should develop and improve the main industries of the country . . .” 8

Convenient partners for this bourgeois model were the gentleman farmers that populated state agricultural societies and the young expatriate scholars returning from advanced scientific study in Germany. 9 These men coveted leading roles in collegiate institutions where the study of applied sciences was a leading aim; the agricultural society gentleman as board of directors and the scientists as presidents and faculty members. The bourgeois reformers, agriculturalists, and German-trained scientists shared opposition to the literary aristocracy of the traditional colleges, and supported reforms that would make applied sciences the equal of the classical subjects. The scholars returning from abroad had studied with some of the world’s most prominent chemists, botanists, and geologists, a formative experience that instilled a commitment to advancing scientific knowledge through original research and scholarship. 10 As they assumed leadership posts, these expatriates attempted to fashion land-grant institutions as universities: supporting

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10 Rosenberg, No Other Gods, 135-152.
faculty research and approximate the academic rigor of the best colleges, and dismissed the term “agricultural college” and any suggestion that the Morrill funds should sustain vocational schools.

The original land-grant arrangements in the Northeastern United States were guided by this bourgeois-science coalition. Agricultural chemists John Pitkin Norton, Samuel Johnson, and Evan Pugh would return from doctoral study at the Universities of Göttingen and Gießen, Germany and take charge of organizing Yale’s Scientific School and the Farmers’ High School into the first land-grant institutions in Connecticut and Pennsylvania. In New York, the leader of the state agricultural society in 1862 was Ezra Cornell. He supported the fledgling People’s College as the state’s land-grant institution until partnering with Andrew Dickson White to launch the land-grant university bearing his name in Ithaca five years later. Agricultural society members lobbied state legislatures to create independent land-grant colleges in Maine and Massachusetts, in lieu of entrusting funds to the traditional establishment at Bowdoin College and Harvard University. William Clarke would return from advanced study in Germany to lead the newly founded Massachusetts Agricultural College. Pressure from agricultural societies helped the New Hampshire Agricultural and Mechanical College preserve semi-independent status in its confederation agreement with Dartmouth, and Göttingen Ph.D. Ezekiel Dimond

11 Stemmons, The Connecticut Agricultural College – A History (New Haven, CT: Tuttle, Morehouse & Taylor Company, 1931), 62-63; Michael Bezillia, Penn State – An Illustrated History (State College, PA: Pennsylvania State University Press, 1985), Bezillia notes that the charter of the Farmer’s High School required that the trustees be drawn from the county agricultural societies, giving the membership a vested interest in the land-grant college.
12 Gould P. Colman, Education & Agriculture: A History of the New York State College of Agriculture at Cornell University (Ithaca, NY: Cornell University, 1963), 34-38. For a history of the People’s College see Walter P. Rogers, The People’s College Movement in New York State (New York State Historical Association, 1945).
14 Ibid., 1-22.
would lead the venture during its formative years. Agricultural societies pressured the New Jersey legislature to designate the scientific department at Rutgers as the land-grant recipient instead of Princeton College. The effort to secure land-grant funds for institutions with avowed applied science commitments was not successful throughout the Northeast, however. Since the Morrill Act stipulated that new colleges could only use ten percent of land-grant revenue on buildings and grounds, conservative legislators resisted investing in independent colleges in Rhode Island and Vermont. Legislators in these states foresaw an unending financial commitment, and refused to confer the necessary state appropriations. In these states, the funding and responsibilities of the federal land-grant would fall to the old guard of Brown College and the University of Vermont.

It would not be until the second phase (1873-1886) that regular farmers entered debates over land-grant education. Initially motivated to class organization by the economic depression of 1873 and rural population decline, Northeastern farmers formed granges and lobbied land-grant colleges to serve the economic and social interests of the agricultural class. The intellectual foundations of regular farmers’ critique of land-grant colleges developed during this period and were disseminated broadly by agricultural newspaper editors with a proclivity for

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16 The key figure in the development of the Rutgers agricultural program was Dr. George Cook, a leader in the state agricultural society, linking the college and the society from the outset. See Richard P. McCormick, *Rutgers: A Bicentennial History* (New Brunswick: Rutgers University Press, 1966), 87-95.
class organization and populist rhetoric. Farmers wanted land-grant colleges to place manual instruction over scientific theory and produce practicing farmers to turn the tide of rural depopulation. Amos Winslow, a farmer and grange member testifying before a state committee provides a standard belief of the time:

If I understand the intention of these grants it was to give instruction in agriculture and the mechanic arts: elevating the farm and the farmer, and giving them an education of a practical nature and in a specific line.

Alarmed by the surge in populist power and practical education interpretations of the Morrill Act, Justin Morrill, Andrew Dickson White, and Daniel Coit Gilman defended land-grant institutions of a high intellectual grade with liberal curricula, scope, and purpose. Arguing children of the agricultural classes were not predestined to become farmers, they encouraged a system where students could pursue social mobility through burgeoning opportunities in the new economy. Gilman was a professor at Yale’s Sheffield Scientific School when he exclaimed that the land-grant funds should support “National Schools of Science,” focused on the “advancement of science and its application to human industry, on invention, and discovery, . . . on the training of manufactures, agriculturalists, miner, engineers, architects, [and] for the various positions of the industrial world.” For forty years, Justin Morrill would be a chief opponent to farmers’ assertions that the colleges should “return boys to the farm;” he declared in one speech that

19 The populist rhetoric of Northeastern grangers concerning land-grant colleges approximated the expressions of Midwestern and Southern populists as illustrated in Gelber, Academic Populism.
“there is no assumed heredity in the vocation of the farmer, and his son has all the world before him where to choose his calling as much as the son of the minister or the lawyer.”

The passage of the Hatch Act and the second Morrill Act amplified efforts to control the land-grant designation during the third phase (1887-1895). The promise of additional federal funds heightened granger demands for independent agricultural colleges and signaled the demise of Brown College, Dartmouth College, and Yale’s Scientific School as land-grant institutions. The University of Vermont and Rutgers College were able to resist the same outcome, thanks to the political maneuvers of Justin Morrill in Montpelier and limited interest by the New Jersey grange to wade into land-grant college politics. The land-grant colleges in Maine, Massachusetts, Pennsylvania, and New York faced grange criticism for steep admissions criteria and the failure to produce practicing farmers, but in time, these institutions built strong ties with farming communities through their research, extension, and outreach efforts. Here the mission stopped being about producing practicing farmers, but instead educating those that could translate scientific discoveries into profitable farm uses. Central to this transition was Isaac Roberts, a son of a farmer, educated in the district schools and never attending college. He became an agricultural professor at Iowa’s land-grant college before coming to New York in 1873 and building a renowned agricultural program at Cornell. He was indicative of the first

24 Justin Morrill, “An Address in Behalf of the University,” p. 15.
26 See Joseph L. Hillis, The Attempted Disruption of University of Vermont and State Agricultural College, unpublished manuscript, UVM archives; Sinclair, “Agricultural Education and Extension,” p. 184-185. On the irregular progression of the New Jersey grange movement see Hubert G. Smith, Agriculture in New Jersey: A Three Hundred Year History (New Brunswick: Rutgers University Press, 1973), 110-112. Smith argues that agriculture interests in the state were highly specialized and farmers were fragmented into different specialty groups. The largest was the New Jersey Cranberry Growers Association that was primarily concerned with improving varietals and standardizing packaging of products.
27 Smith, The First Century; Cary, The University of Massachusetts; Colman, Education & Agriculture; Bezilla, Penn State.
generation of land-grant graduates that would expand agricultural science, and who as children of the agricultural class were able to bridge the cultural gaps that separated the ivory tower from the grange hall.28 Roberts’ protégé Liberty Hyde Bailey would solidify a strong relationship between farmers and Cornell by implementing the nation’s leading extension and cooperative research programs.29

The Connecticut State Agricultural College, the New Hampshire Agriculture and Mechanical College, and the Rhode Island Agriculture College would be founded during this period of reformation in an attempt to refashion the land-grant’s core purpose as the production of practicing farmers. These institutions eschewed the theory-based “book learning” of the other colleges and designed a vocational education program around graduating practicing farmers. The schools were to be devoid of the effeminate trappings of liberal arts and cultural refinement, and instead develop masculine and disciplined college men through manual labor.30 And since the colleges wanted to graduate as many farmers as possible, the admissions criteria were placed in reach of any student with a common school education.

In the final phase (1896-1905), the land-grant institutions of the Northeast experienced a process of standardization. There were three different models of land-grant education at the turn of the century: a) the recently founded agricultural colleges in Connecticut, New Hampshire, and Rhode Island followed the grange’s vision of vocational farm training, b) the programs at Maine, Massachusetts, Pennsylvania, Rutgers, and Cornell focused on advance science and engineering

education, research, and agricultural outreach, and c) the University of Vermont continued as primarily a classical college with minimal investment in the applied sciences. The grange-supported colleges quickly came into competition with a growing secondary school system that undercut their traditional clientele. Institutional leaders recognized that their future was dependent on a growing market of high school graduates aspiring to middle class careers, and to this population the narrow and elementary curricula of their colleges was unattractive. After dramatic battles with the grange, reformers at the Connecticut and Rhode Island agricultural colleges embraced the model of its peer institutions, moving the outliers into the standard regional form. Farmers were forced to accept the settled reality of the Northeastern land-grant college: an institution that conducted useful agricultural research, engaged in outreach to farmers and rural communities, but that did not produce practicing farmers. The influx of federal funds from the Morrill Act of 1890 were used to expand curricular offerings in engineering, chemistry, business, and the liberal arts, and position the Northeastern land-grant colleges as places where students gained access to new middle class careers.

This four-phase pattern of land-grant college development was shaped by major transformations in the American economy. The rise of modern capitalism displaced traditional economic arrangements, diminished the economic and social power of the agricultural class, and prompted the rise and influence of a new middle class of businessmen, bureaucrats, and skilled

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31 A reform agenda would cost the presidents of Rhode Island State Agricultural College and the Connecticut Agricultural College their posts in face of grange opposition. They would be vindicated when their reforms were adopted shortly after their departures. The growing middle class demand for higher education is well covered in Burton J. Bledstein, *The Culture of Professionalism: The Middle Class and the Development of Higher Education in America* (New York, NY: WW Norton & Co., 1976). For a discussion of how the emerging middle class also worked to secure their position by demanding high school education see David F. Labaree, *The Making of an American High School: The Credentials Market & the Central High School of Philadelphia, 1838-1939* (New Haven, CT: Yale University Press, 1988), 1-35.
technocrats. This class realignment resulted in new demands on higher education institutions as farmers wanted agricultural colleges as a bulwark against their waning status, and the new middle class sought colleges that provided the scientific foundations of technical and managerial careers in the new economy. Colleges would move cautiously into these arenas at mid-century, as most college students continued to pursue a classical education for mental discipline, refined tastes, and preparation for the learned professions. Notwithstanding the continued dominance of the classical curriculum, the applied sciences of agriculture, chemistry, and engineering found homes in technical schools, scientific schools, farmers’ institutes, and the occasional course or lecture at a literary college. But it would be the Morrill Act of 1862 that would initiate a comprehensive effort to elevate the study of the applied, useful, and marketable sciences.

Land-Grant College Historiography: The Chimera of Popular Demand

In his classic work on land-grant history, Earle D. Ross argues that the evolution of higher education in the nineteenth century occurred amidst the motivating influences of modern democracy and industrialism. Ross entitled his book “Democracy’s College” not “Industrialism’s College,” however, arguing that it was the expansion of popular democracy that proved decisive in reforming higher education. He states, “The determining influence has been that of popular determination and direction – a democratic system according to the expanding conceptions of the

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This democratizing thesis posits that traditional higher education remained the domain of an elite segment of the population until an expanded polity enacted progressive policies and made higher education relevant and accessible. The influences of industrialism became subsumed within this all-encompassing grand narrative. Ross notes that economic change and class realignment brought revolutionary struggles in Europe, but America witnessed the “practical conditions for . . . political innovation.” The class-based organizations (i.e. the farmers alliance and the grange), according to Ross, helped hasten political participation and advance the democratization of American education. The antagonists in this narrative are the classical colleges – the anti-democratic college - aristocratic bastions bent on defending the classical curriculum even as enrollment and support dwindled. The forces of democracy would embrace a federal solution to redress the aristocratic leanings of American higher education and usher in a new democratic promise – the Land-Grant College.

The three additional works of the traditional land-grant college cannon adhere to the same democratizing and popular demand thesis. For Edward Eddy, the only departure is that the land-grant colleges did not emerge from a “landslide of public sentiment,” but a “gradual public awakening to the promise of higher education.” As in Ross’ work, the classical nineteenth century college is depicted as aristocratic and aloof to societal demands. Eddy argues that it would take an expanded popular democracy to intervene in higher education and align colleges and universities with the needs of a changing society. Allan Nevins describes ubiquitous opposition to the classical colleges, and growing support for federal intervention into higher education.

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35 Ross, *Democracy’s College*, p. 2.
37 Ibid.
education. He argues that the American people pressured the government to create a higher education system that could deliver the benefits of technology and science to the populace.\textsuperscript{40} J. G. Edmonds’ land-grant history is a simplistic description of college foundings and a celebratory accounting of the benefits accrued in each state. This book embraces the evolutionary, democratizing narrative of land-grant college development, and greatly overestimates the unwavering support of farmers for the movement.\textsuperscript{41}

In his classic history of American higher education, Frederick Rudolph devotes little time to the land-grant college. Yet, he makes an observation that was a first step in challenging Ross’ conclusions. Rudolph writes,

\begin{quote}
All these [land-grant college] activities owed little if anything to the views of dirt farmers and workingmen’s associations. They were the work of middle class reformers who were prepared to advance some theoretical and ideological notions of what popular technical education should be.\textsuperscript{42}
\end{quote}

Rudolph reviews the data in Democracy’s College and institutional histories, and finds little evidence of farmers and working people demanding new educational forms. Eldon Johnson consults histories of the early land-grant colleges and reaches a similar conclusion, “[Land-grant colleges] were created by reformers . . . for an ideal, not an established need.”\textsuperscript{43} He argues that if there was broad, popular demand for these institutions, it should be evident in enrollment data. But there was a paucity of student demand in the early years of most land-grant colleges, even with free tuition, scholarships, and preparatory courses. Agricultural departments and programs

\begin{footnotesize}
\textsuperscript{40} Allan Nevins, The State Universities and Democracy (Ames, IA: Iowa State University Press, 1962).
\end{footnotesize}
fared worse, according to Johnson, as only a handful of students matriculated in agriculture and even fewer pursued farming careers. Johnson takes an important step in challenging the popular demand foundation of the democratizing thesis. However like Rudolph, the “reformers” and their visions and purposes - claimed to be at the origins of the movement - are left unexplored and unexplained.

Roger Williams contributed the first in-depth history of the reformers and institutional leaders that sustained American land-grant education throughout the nineteenth century. He uses the works of revisionist education historians – especially Stanley Guralnik, Colin Burke, and David Potts - to undercut the linchpin of Ross’ thesis: the assumption that traditional colleges faced high mortality rates, low enrollments, were aristocratic, and were not meeting the desired educational goals of its students. Potts, for example, illustrates that the low enrollment numbers and college mortality rates were based on inaccurate calculations of previous historical works. In citing Burke’s work, Williams argues that the classical colleges were not exclusively for an elite clientele, as classical college enrollment data revealed many students of modest means and

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44 Ibid, 333-351.

45 Williams’ superb discussion of bringing this revisionist scholarship to bear on the land-grant historiography can be found in Roger L. Williams, George W. Atherton and The Origins of Federal Support for Higher Education (State College, PA: The Pennsylvania State University Press, 1991), 13-20. The revisionist histories he uses to undercut the traditional interpretation of the Nineteenth Century classical college are as follows: Stanley M. Guralnik, Science and the Antebellum College (Philadelphia, PA: American Philosophical Society, 1975); Colin B. Burke, American Collegiate Populations: A Test of the Traditional View (New York: New York University Press, 1982); and David B. Potts, “Curriculum and Enrollments: Some Thoughts on Assessing the Popularity of Antebellum Colleges,” History of Higher Education Annual, 1 (1981), 88-109. This “revisionist scholarship,” specifically David B. Potts’ “Curriculum and Enrollment,” questioned the veracity of historical figures that suggested a high mortality rate of classical colleges. This countered claims of the existence of a “great regression” in higher education growth during the 1830s and 1840s. The fact that classical higher education institutions were “islands of institutional elitism amidst a rising tide of elitism” that “rejected the pleas of reformers” was not, argued Potts, supported by evidence. Opponents of the traditional view argue that many of the more practical reforms of the nineteenth century (most famously Francis Wayland’s innovations at Brown) failed spectacularly due to a lack of popular interest and support.

46 For his analysis of the limited evidence for the traditional view and discussion of the historiography see Potts, “Curriculum and Enrollment,” 37-45 and for a comprehensive accounting of how these revisions have shaped the historiography of the Nineteenth Century College see the editor’s introduction of Roger L. Geiger in The American College in the Nineteenth Century (Nashville, TN: Vanderbilt University, 2000), 1-36.
undistinguished backgrounds. If land-grant colleges could not be depicted as the popular retort to the aristocratic classical colleges, then the straw man of the traditional narrative was in question.\textsuperscript{47} Williams signals the death knell of Ross’ thesis with a new interpretation that gives educational reformers and leaders the leading role:

This happened [the rise and maintenance of land-grant colleges] not because the institutions were destined to do so in response to some vague national demand, but because certain individuals were resolved to create the means – through federal legislation and through an organization of peer institutions – for the colleges’ sustenance.\textsuperscript{48}

Williams’ main goal is to uncover the forgotten legacy of a notable reformer, George W. Atherton, whom the author argues, was the most prominent figure in rescuing the land-grant college movement from decades of struggle and near collapse. Atherton’s authorship and political stewardship of the Hatch Act and the Morrill Act of 1890, and his leadership in the Association of American Agricultural Colleges and Experimental Stations, helped secure promising futures for land-grant colleges. Williams concludes that it was individuals like George Atherton, Daniel Coit Gilman, Andrew D. White, Francis Walker, and members of the Association of American Agricultural Colleges and Experimental Stations who worked vigorously at the federal level to preserve these institutions.\textsuperscript{49}

The problem created from the era of revisionist higher education history is that as Christen Ogren aptly argues, traditional conceptual schema were discredited without being replaced by any new consensus on interpretations for the period.\textsuperscript{50} In this, Williams’ work is no exception. He makes the valuable contribution of exposing the flimsy foundation of the

\textsuperscript{47} Williams, \textit{The Origins of Federal Support}, 1-4.
\textsuperscript{48} Ibid., p. 9.
\textsuperscript{49} Ibid.
traditional accounts, specifically his criticism of the uncritical acceptance and “vagueness” of the democratizing and popular demand thesis. But Williams offers little to bring clarity to the “vagueness,” and actually rejects the importance of popular participation in land-grant history altogether. Instead, he argues that the “deterministic historiography” of land-grant history had prevented a proper accounting of the “great men” of the movement, and uses his work to reveal forgotten “leading lights” – George Atherton, Henry Alvord, and Henry Goodell. This “great triumvirate” of educational reformers did not build great universities, he notes, but were “responsible for securing important legislation and leading the Association of American Agricultural Colleges and Experiment Stations into the early twentieth century.” While Williams claims that he is not arguing for a “great man theory of land-grant education,” his exclusive focus on “leading lights,” and the absence of the popular movement, make it difficult not to place his work firmly within that perspective.

Roy V. Scott’s history of agricultural extension and Alan Marcus’ history of agricultural science and research explore specific demands that farmers made on higher education. Williams rejects the necessity of considering these works in a footnote, “These books tend to reinforce prevailing but erroneous ‘cow college’ assumptions about the nature of the early land-grant colleges.” In actuality, these works are critical to any effort to uncover popular demands on land-grant education. And while Williams is correct in asserting that engineering became the sine qua non of land-grant education, this is no way diminishes the necessity of investigating

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51 Williams is marking a distinction between Earl D. Ross’ “Great Triumvirate of Land-Grant Educators;” Daniel Coit Gilman, Andrew D. White, and Francis Walker. For comparison see Earle D. Ross, “The Great Triumvirate of Land-Grant Educators,” p. 480-488.
52 Ibid., p. 9.
53 Ibid., p. 8.
how farmers’ political activities and educational philosophies impacted the development of land-grant colleges. Scott, in contrast, suggests the agitations of farmers had a major impact:

Agricultural pressure helped to strengthen the fledgling land-grant colleges and to focus their attention more surely on the needs of the farmers . . . forced the colleges to seek means by which they might improve their standing with farmers . . . pointing those institutions toward the concept of extension.56

After years of conflict and negotiation, agricultural extension was standardized as the most effective way for land-grant colleges to reach rural communities, meet the educational demands of farmers, and improve the output of the agricultural sector.57 In this context, Scott places farmers’ efforts to create “separate, independent agricultural colleges” in those states having land-grants attached to traditional colleges.58 While he does not explore the educational specifics (i.e. curricula, admission standards, career outcomes, etc.) of the farmers’ demands, Scott illustrates how farmers’ political pressure forced institutions to address shortcomings in agricultural education and in the application of agricultural science.

In his history of agricultural science experiment stations and the Hatch Act of 1887, Alan Marcus describes the political maneuvers that maintained the experiment stations’ connection with land-grant colleges instead of a proposed attachment with the U.S. Department of Agriculture.59 He adds complexity to conceptions of the popular pressures on the land-grant movement by dismissing the homogeneity of Ross’ popular movement. Drawing a distinction between “systematic farmers” who viewed the future of farming in business terms and “scientific farmers” who believed scientific principles would elevate the vocation, Marcus illustrates how the former advocated a land-grant curricula focused on business techniques and practical training.

56 Roy Scott, The Reluctant Farmer, 37.
57 Ibid., 138-169.
58 Ibid., 37-63.
59 Alan Marcus, Agricultural Science, 127-160.
whereas the latter embraced education in basic science and theory.⁶⁰ While Marcus succeeds in moving the historiography beyond an uncritical homogenization of the farmers’ perspective, his distinction between systematic and scientific farmers poses conceptual problems. He himself notes that the perspectives possess “similarities so numerous as to suggest synonymy,” and the distinction is based primarily on the jargon used.⁶¹ When Scott and Marcus are taken together, however, they suggest a more complex picture of the activists demanding reforms in agricultural education. Scott’s farmers wanted land-grant colleges to help rescue the farming population from economic and social degradation, whereas Marcus’ “men of science” wanted to professionalize farming and establish its scientific foundations.

In a chapter from his edited volume on the nineteenth century college, Roger Geiger spurs an advance in the land-grant literature by connecting the popular movement for “useful knowledge” with the activities of educational reformers like Justin Morrill, George Atherton, and Daniel Coit Gilman. By tracing how the concept “useful knowledge” was debated and transformed throughout the century, Geiger exhibits how land-grant colleges settled on scientific principles over manual instruction and high intellectual standards over elementary curricula.⁶² By juxtaposing “useful education” with Daniel Coit Gilman’s plan for “National Schools of Science,” Geiger uncovers a key divergence in the movement to expand higher education beyond its classical core. Should these new public colleges offer practical studies for practicing farmers and mechanics or offer the scientific and theoretical foundations of careers as technologists and

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⁶¹ Ibid., 219-221.
managers? Geiger concludes that the Morrill Act “was ultimately instrumental in undermining the “limited and limiting vision” of the former.”

In a comprehensive accounting of farmers’ demands upon higher education, Scott Gelber further addresses this tension over the purpose of higher education:

“Most populists expected state universities to emphasize access over achievement, agricultural curricula over the liberal arts, and the dissemination of information over advanced scholarly research.”

He describes the Populist takeover of state universities in the Midwest and South, and explores laypersons’ “attitudes towards access, curriculum, academic freedom, and funding.” In many ways, Gelber’s work is the embodiment and fulfillment of Earle Ross’ thesis. The rise of populism expanded popular participation in democratic life and allowed regular folks to reform higher education in their image. Yet Gelber transcends Ross’ linear, evolutionary approach with a dialectic schema, arguing that popular demands for higher education coexisted and contested the dominant higher education philosophies held by traditional academics. He concludes that the public higher education model that emerged by the end of the century was a product of this “tension of grassroots advocacy and academic authority.”

Earle Ross left an indelible mark on land-grant historiography for forty years. But starting with the critiques of Eldon Johnson and Roger Williams, his conclusions unraveled. Williams presented the pivotal role of land-grant reformers, Johnson challenged the empirical validity of Ross’ claims, Scott and Marcus explicated the contradictory motivations that separated the

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63 Ibid., p. 168.
64 Scott M. Gelber, Academic Populism, p. iii.
65 Ibid., 1-21.
66 Gelber discusses how state granges pressure land-grant institutions to reform agricultural programs in pages 41-65.
67 Ibid., p. iv.
popular demands of farmers from agricultural scientists, and Geiger and Gelber explained how the land-grant philosophies of farmers were in a dialectical relationship with the views of reformers, scientists, and academics. Scholars had concluded that the meaning and purpose of land-grant education was the product of a tension between the popular demands of farmers and workers and the ideals of leaders in education, science, and business. The source of that tension remains unexplained in the historiography, a product of limited consideration of how the forces of industrialism, capitalist maturation, and economic development influenced the land-grant college movement.

It is argued in this dissertation that industrialization and the rise of modern capitalism produced economic classes with conflicting educational needs and demands, and the process of creating and controlling land-grant colleges is best conceived as a contest to protect or elevate the status, power, and economic privileges of different classes. The sources of the tension were opposing beliefs of the proper progression of America capitalism and land-grant colleges’ relationship to that development. Should the colleges hasten social mobility, moving talented labor off the farms into new growth industries? Or was the role of land-grant colleges to intervene in externalities of the market by curbing mobility and strengthening rural communities against the growing power of capitalism’s new middle class?

**A New Economic Order**

The rise of industry, the centralization of capital, and the emergence of modern science transformed traditional structures of social life and realigned the class dynamics of American society. The industrial revolution in America was fueled by capital accumulation, in which large

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68 The term “agriculturalist” is often used to designate those individuals primarily concerned with agricultural science, inquiry, and development and less with the practice of farming.
enterprises and corporate trusts possessed the means to acquire expensive technologies and large labor forces essential for mass production. Large capitalists employed the division of labor system to achieve greater valorization of their work force, increasing profitability, and undercutting the prices of the petit bourgeoisie – the farmers, small producers, and craftsman that had dominated earlier phases of economic life. More than in Europe, however, the petit bourgeoisie in America were able to stave off expropriation at the hands of large capitalists by finding market niches and competitive advantages on the vast continent. Petite bourgeoisie – small farmers, family manufacturing companies, etc – would persist (albeit at lower numbers) in America, but the emerging, large industrial organizations were becoming leading economic powers.

These large, complex organizations were not managed by the capitalist alone. Officers of industry operated the system and managed the workers, technical specialists and the intelligentsia uncovered and employed scientific discoveries, and lawyers and bureaucrats set the rules for complex, economic transactions. The rise of this new class of workers was interconnected with advancements in the applied sciences of engineering, agriculture, and chemistry, and the rationalization and bureaucratization of industrial operations. Scientific rationalism and bureaucratization, as Max Weber argues, placed a premium on workers who could oversee and implement routinized management operations, as well as workers possessing

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69 See the discussion of the historical tendency of capital accumulation in Marx, *Capital*, 927-930.
70 On the process of valorization see Marx, *Capital*, 293-306; on expropriation 927-928.
the technical competency to develop and manage new technologies. As industrialization expanded and capitalism matured, a shift in the workforce was evident: self-employed artisans, small manufactures, and farmers of the petit bourgeoisie were becoming a smaller share of the national labor force, with an increasing number entering a new middle class of engineers, clerks, managers, scientists, and learned professionals.

The American workforce increased from nearly 13 million in 1870 to 29 million in 1900. During this expansion, agriculture would cede its dominance of the American economy to non-agricultural industries. Four million jobs were added in agriculture during this period, but this expansion did not keep pace with rapid employment growth in other sectors (See Figure 1.1).

Figure 1.1. Distribution of Labor via Sector in the United States, 1870-1930

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74 Image is reprinted from Ibid.
In 1870, the percentage of workers employed in agricultural pursuits was 50.4 percent and in non-agriculture it was 38.3 percent. By 1900 the situation was reversed, only 36.3 percent were in agriculture with 54.2 percent employed elsewhere. The manufacturing and mechanical industry added nearly five million jobs, moving from 20.5 percent of all employment in 1870 to 24.8 percent in 1900. The transportation and communications industry added 1.7 million workers (4.0 percent in 1870 to 6.7 percent of all jobs in 1900) and the trade sector added 2.2 million (6.8 percent in 1870 to 10.6 percent in 1900). Finally, by 1900 there were over 800,000 more professionals (a change from 2.6 percent to 4.1 percent of all workers) and over 650,000 positions were added in clerical work (0.6 percent in 1870 and 2.4 percent in 1900).  

Within this redistribution of labor towards manufacturing, transportation and communications, trade, professions, and clerical work was an increase in the managers, technocrats, bureaucrats, skilled workers, clerks, and professionals of the new middle class. For example, the expansion in clerical occupations included 200,000 bookkeepers, 220,000 clerks, and 50,000 credit collectors. The professions added 300,000 teachers, 70,000 lawyers, 70,000 physicians, 35,000 technical engineers, 25,000 journalists, 22,000 dentists, 17,000 designers and inventors, 8,000 architects, and 8,000 chemists. In trade, 500,000 more individuals were pursuing their own retail, wholesale, or import/export business and 700,000 more were working as salespeople in a retail enterprise. 50,000 management, supervisor, or inspector jobs were added in transportation companies and/or telegraph, and manufacturing managers increased by 180,000 between 1870 and 1900.  

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75 Ibid. Raw numbers are rounded.
76 Ibid. For simplicity, job figures have been rounded to the nearest thousand.
In using this same data, C. Wright Mills calculates that the new middle class workforce increased from 6 percent of all workers in 1870 to 25 percent by the start of the twentieth century, and the vocations of the petit bourgeoisie decreased from 33 percent to 20 percent of all employment by the twentieth century. He interpreted the change as great labor shift from a propertied middle class to a “white-collar” middle class, “a shift from property to a new axis of stratification . . . occupation.”77 This educated, middle strata of occupations (neither Capitalist nor unskilled Proletariat) had captured a central position in American society.78

Stuart Blummin explains how the primarily non-manual vocations under the umbrella of this new middle class acquired a unique social identity. The author finds a “middle class way of life” shared by non-manual workers of urban-based companies enjoying the economic returns of marketable skills or educational credentials.79 This affluence provided the means for consuming homes, fashions, and furnishings that were hallmarks of a budding middle class culture. The urban, new middle class offered public displays of their values and culture in volunteer organizations and educational institutions in segregated neighborhoods – an enclave from the working population - where white collar workers, educated in urban high schools, developed a collective awareness of class identity.80

80 See Ibid, 11-16. For another study on the cultural attributes of a new middle class existence see Karen Halttuten, Confidence Men and Painted Women: A Study in Middle Class Culture in America, 1830-1870. (New
The contours of new middle class culture were represented and disseminated throughout American society in art, fashion, fiction, newspapers, mass magazines, and music. Popular expressions depicted the economic and social rewards of a new middle class life, and glamorized the “rags to riches” tales of rural youth moving to the city. It would have seemed like everyone was getting in the game of class advance. Wealth, sex appeal, a continuous adventure was how the social journey to the new middle class was portrayed in the dime novels of the daydreaming farm boy. Agricultural journals printed numerous letters from farmers fearing their sons were dissatisfied with rural life, opposed to manual labor, and obsessed with the imagined awards of an urban existence as a clerk, lawyer, businessman, or doctor.

Starting in the 1850s, the agricultural press commented regularly on the diminished social standing and respect for farming and rural life and the loss of farming progeny to the lore of middle class culture. Numerous editions advanced proposals to improve the social and cultural

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81 Bledstein, The Culture of Professionalism, 46-79.
82 For example, the most popular play by the end of the century was Denman Thompson’s The Old Homestead. The story of a New England farm boy struggling with a choice between middle class ambition and the traditions of farm community life became one of the most popular stories in America by the turn of the century. By 1908, the production had played over seven thousand times, enjoyed a quarter century run in New York, Chicago, and Boston, and earned over three million dollars. Victorians flocked to see the tale of a wayward son succumbing to the temptations of the dangerous city. Denman Thompson, Old Homestead (New York, NY, 1889). See Dance and Curtain, “The Old Homestead – The Greatest Popular Success of the American Stage,” Current Literature 14 (1908): 663.
existence of agriculture, and debated the ubiquitous question “how to keep our sons on the farms?” A useful summary of this activity was published in the Prairie Farmer in 1872,

How shall the boys be kept on the farm?’ is a subject frequently harped upon by writers for agricultural journals, and those that enlighten the rural classes at their fairs, conventions, and other public meetings, through speeches and elaborately prepared papers. [Fathers] are told to make their homes more pleasant and farm life less onerous . . . bringing homes to tasteful adornment . . . [preventing] the rush from the farming class of its youngest members.84

Justin Dent of Vermont warned his readers, “the agricultural societies alone cannot keep their sons on the farm; instead, it [is] up to the farmers themselves to change home culture.” The farmers have failed, Dent argued, to counter the delusions of urban grandeur stemming from “the vast amount of sensational reading that is now scattered broadcast over our land.” Fathers should be giving their sons “access to the best of books and periodicals,” leaving them “less time for dime novels and story papers,” Dent concluded. In The New England Farmer column “A Word to Farmer’s Sons,” the author asked young rural men to consider some advice,

I will not advise you to leave the paternal roof as soon as you are old enough, for the sake of completing a course at one of the many so called business colleges, then to be a clerk in some house at a fixed salary per annum. To many, the life of a merchant seems naught but a season of golden pleasure.

This direct appeal goes on to suggest that many of the learned professions and mercantile positions were becoming filled, and there is little room at the top. Instead, the author argued, “look to the old place . . . think what your father has done . . . see if you can do it better.”85

The cultural divide between farmers and that of the new middle class was most pronounced in debates over male gender identity. Gail Bederman proposes that by the 1820s, working class men and middle class men were constructing and contesting divergent definitions

84 “How Shall Boys Be Kept on the Farm?” Prairie Farmer, no. 45 (1872): 121.
of real maleness. Men of the new middle-class tended to express and defend high morals, sexual restraint, and refined tastes as traits of proper manhood, whereas the working class tended to express “a ‘rough’ code of manliness . . . embracing physical prowess, pugnacity, and sexuality.” This same tension can be found amongst the agricultural population, where farmers’ gender identity was defined by hard work and toil. The older farmers took “pride in showing their toil hardened hands,” whereas the younger generation leaving the farm for urban-based vocations aspired to the refinement, dress, and values of the new middle class man. The farmer may have had a bright brother, cousin, or neighbor who had gone off to school and became a teacher, doctor, or clerk, but he was the weaker child that they had pushed in the mud when they played. It was the real man that stayed on the farm who had the physical prowess and vigor to do the hard labor of agriculture, and those that left for education or middle class careers would acquire “luxurious and effeminate habits . . . incapacitating him for usefulness.” The manual labor of the farm was thought to preserve the strength of a masculine man, whereas the non-manual labor of the new middle class brought feminization and degeneration. One farmer asks, “Why should it produce a greater development of manhood to sit cramped upon an office stool all day . . . then it would to take a reaper and gather together the golden sheaves of a fruitful harvest.” Farmers not only feared that the class realignment would diminish status and power, but also redefine deeply held values that defined gender relations and identities in rural communities.

87 E. Anthony Rotundo, American Manhood.
88 Quote is from “Farmers Sons as Scholars,” The New England Farmer, no. 10 (1858), 477.
90 Sorber, Making College Manly.
In response to threats of economic, personal, and social degradation, farmers formed class-based organizations like the Farmers Alliance (f. 1876) to direct their aggression toward exploitive sectors of capitalist system and ascending classes.\(^9\) This movement is often referred to as populism, a reference to the Populist Party of the 1890s that made political gains in Western and Southern statehouses and captured nine percent of the presidential vote in 1892.\(^9\) In the Northeast, farmers continued to support the major political parties and organized primarily through the non-partisan grange (f. 1867).\(^9\) The grange lobbied for the regulation of banks and railroads, the breaking of trusts, rural mail delivery, the improvement of rural roads, and agricultural education.\(^9\) The Northeastern granges rallied around agricultural education as a means of preserving their influence and economic security amidst the economic and social upheaval of class realignment.\(^9\) Agricultural education of a practical nature, it was argued, could improve the profitability and status of farming and prevent the outmigration and mobility of their progeny to middle class careers in urban locales. Farmers would use their numerical superiority to elect sympathetic lawmakers to support agricultural institutions that would serve these ends.

Richard Hofstadter argues that farmers had willingly entered the capitalist system, and openly pursued commerce until the system turned against them. It was at this juncture that farmers turned against capitalism for the comfort of an “agrarian mythical society . . . an

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92 See bibliographic essay in McMath, *American Populism*.


94 D. Sven Nordin, *Rich Harvest*.

95 On the grange and agricultural higher education see ibid, 62-83.
irrational retreat.” Farmers who were frightened of the rapidity of change and disorganization of society were wooed by mass democracy leaders, or as Hofstadter dismiss them, demagogues. He states:

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Rank in society! That was close to the heart of the matter, for the farmer was beginning to realize acutely not merely that the best of the world’s goods were to be had in the city . . . but also that he was losing status and self respect.
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While interest in agricultural education was based on real financial and social concerns, the debate over land-grant education was also colored by an anxiety that farmers were losing a cherished place in American society. The farmer as the respected backbone of American democracy and society was waning, but hope remained that a proper agricultural education could reassert the economic and social power of the agricultural class.

**Agriculture and Rural Communities in the Northeast**

The changing labor needs of the modernizing American economy shifted populations from rural areas to urban centers. In 1830, 92 percent of the population lived in rural areas, but only 60.3 percent would continue to dwell there by 1900 (See Figure 1.2 for distribution).

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97 Ibid, p. 33.
In the Northeast, this rural depopulation was exacerbated by farmers leaving the rocky soil of New England for the fertile Midwest. Rural communities in New England and Eastern New York experienced slowed population growth in the 1820s followed by a precipitous decline after 1840. Figure 1.3 and Figure 1.4 depict how the population in many rural Northwestern counties peaked prior to 1870, whereas population highs in the rural Midwest were not reached until 1900. A combination of Western and urban-bound migrations and slowing birth rates fueled the demographic shift.

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The loss of talented progeny caused much consternation. The decreasing labor demand on family farms left parents developing strategies to secure the economic welfare of children. While one child could inherit the old homestead, the others would have to resettle on promising

99 Ibid.
100 Ibid.
lands in the next township, county, or state. This caused a growing generational imbalance in rural communities, as youth migrated and elders stayed. The older generation that remained tended to be the most economically secure, but there was a pervasive concern that a continuation of outmigration would ultimately threaten the viability of the community (See Table 1.2 for an example from a typical rural community in Vermont). Leaders pondered who would replace them, and parents and children struggled to preserve family relationships, rites, and traditions across growing distances.  

Table 1.2

<table>
<thead>
<tr>
<th>Age</th>
<th>1860-1880</th>
<th>1880-1890</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-19</td>
<td>29.80%</td>
<td>30%</td>
</tr>
<tr>
<td>20-29</td>
<td>37.20%</td>
<td>41.60%</td>
</tr>
<tr>
<td>30-39</td>
<td>60%</td>
<td>74%</td>
</tr>
<tr>
<td>40-49</td>
<td>61.30%</td>
<td>58.80%</td>
</tr>
<tr>
<td>All Ages</td>
<td>41.20%</td>
<td>44.40%</td>
</tr>
</tbody>
</table>

* Rate is based on surviving members of population

While population decreases caused family and community concerns, it was neither a source nor a product of a regional economic upheaval. The total number of family farms in New England, for example, remained nearly constant between 1820 and 1880 and left the basic

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102 Table is constructed from data found in Barron, *Those Who Stayed Behind*, p. 82. Data is for all males in the township not heads of households.
economic foundation unchanged.\textsuperscript{103} The outmigration from nineteenth century New England has been mischaracterized as a symptom of economic decay, when according to Hal Barron, it is more accurate to conceive outmigration as a lessening of surplus population. He argues outmigration was a natural result of two economic forces: the adoption of labor-saving technologies, and a shift from crop cultivation to less labor-intensive sheep and cattle husbandry.\textsuperscript{104} Rural folks that remained embraced their staid existence, homogenous attitudes, and “rural respectability,” especially when compared with the risky, speculative ventures of their brethren who were moving West.\textsuperscript{105}

By the 1830s, the staple product of New England agriculture was wool, as sheep husbandry was well-suited to the rocky lands and cold climate. But by the 1840s, stiff competition arose from Western farmers with large grazing areas. As wool prices fell, New England sheep farmers sold off herds. Those that remained sustained profits in the 1850s and 1860s by implementing the latest sheep breeding techniques, increasing the average weight of fleeces by up to 143 percent in Vermont and 124 percent in New Hampshire. The resurrection of the Southern cotton industry in the 1870s ended the Indian summer of New England wool, and Yankee farmers moved quickly into the burgeoning dairy industry.\textsuperscript{106}

\begin{thebibliography}{9}
\bibitem{103} Ibid, 79-111.
\bibitem{104} Ibid, 112-131.
\bibitem{105} Ibid., 112-131.
\end{thebibliography}
Agricultural historian Douglas Hurt notes, “As early as 1868, Maine farmers could keep one cow for the cost of caring for eight sheep.”\(^\text{107}\) The sale of butter, cheese, and calves from five dairy cows could fetch nearly double the profit of wool and lambs. Cattle-derived products were highly perishable (in the years prior to refrigerated transportation), leaving Midwestern dairy farmers unable to access Northeastern urban markets. This competitive advantage made dairy farming the preference in New England, New York, and Pennsylvania during the 1870s. Specialized dairy breeds (i.e. Jerseys, Guernseys, Holstein, and Brown Swiss) replaced less productive cattle by the 1880s, further increasing profitability.\(^\text{108}\) Farmers successfully transitioning to dairy production experienced economic stability for the remainder of the century, and in 1900, achieved further gains as city dwellers’ demand for liquid milk spiked with the advent of residential refrigeration.\(^\text{109}\)

In New Hampshire, Vermont, and Massachusetts, farmers attained standards of living above the national average during the last three decades of the nineteenth century. Less successful tillers had quit the farm for other vocations or migrated to other locales, and those remaining received the lucrative returns of dairy.\(^\text{110}\) In states with fewer acres under cultivation, farmers were less successful in moving to sheep and cattle husbandry because of a scarcity of grazing land. For example, Rhode Island and Connecticut farmers tended to leave agriculture for work in manufacturing at rates higher than neighboring states.\(^\text{111}\) In Maine, cooler than usual weather between 1860 and 1885 brought poor yields for those farmers that had balked at cattle-

\(^{107}\) Hurt, “Northern Agriculture after the Civil War,” p. 56.
\(^{108}\) Ibid., 56-57.
raising. This added challenge hastened outmigration to towns or other climates.\footnote{David C. Smith, “Climate Stress and Maine Agriculture, 1785-1885,” In T.M.L. Wigley, M.J. Ingram, and G. Farmer (Eds.), \textit{Climate and History: Studies in Past Climates and their Impacts on Man} (Cambridge: Cambridge University Press, 1981), 450-464.} At mid-century, New Jersey farmers were highly specialized in fruit and forage crop production and enjoyed stability thanks to their proximity to several urban markets. As competition increased from Western and foreign markets, the New Jersey farmers employed “reapers, threshing machines, binders, hay rakes, and fodder choppers,” as well as improved fruit cultivation techniques to retain their competitive advantage in Eastern markets.\footnote{Hubert G. Schmidt, \textit{Agriculture in New Jersey: A Three Hundred Year History} (New Brunswick, NJ: Rutgers University Press, 1973), 134-149; 182-190. Quotes is from Hurt, “Northern Agricultural after the Civil War,” p. 59.}

New York and Pennsylvania had the best agricultural lands in the Northeast. Prior to 1870, New York was the leading agricultural state in the union in terms of cultivated acreage, production of livestock and dairy products, and investment in new technologies.\footnote{Hurt, “Northern Agriculture after the Civil War,” 58-60.} New York’s success would be its undoing, however, as farmers speculated in cheaper Western lands by selling or mortgaging their farms. Also, at that time it was unclear to New York farmers that specializing in grazing agriculture was in their economic interest, since a broad array of goods had traditionally proved profitable. The banking depression of 1873 doomed the speculators, and increased Midwestern competition in several staple markets caused many New York farms to fail, initiating an agricultural decline that would last throughout the century.\footnote{See Gates, “Agricultural Change in New York State,” 115-141.} The story was similar in Pennsylvania albeit less drastic. Unprofitable family farms closed in droves between 1880 and 1890, and those that survived tended to have invested in new technology and dairy production.\footnote{Stevenson Whitcomb Fletcher, \textit{Pennsylvania Agriculture and Country Life, 1840-1940, Vol. 2} (Harrisburg: Pennsylvania Historical and Museum Commission, 1955), 167-180.} Pennsylvania and New York had the furthest and rockiest journeys to transition
their agricultural economies from multi-staple production to the dairy specialization that would stabilize the industry.

Northeastern agriculture went through dramatic changes between 1850 and 1900, but the experience varied greatly between the farmers that left and remained. Farmers that successfully transitioned, first to sheep then cattle, often had decades of economic success. Many of these farmers persisted in agriculture thanks to scientific discoveries and new technologies. The tillers that lacked the land or capital to transition to grazing or invest in technology fared the worst in the face of Midwestern competition – either choosing to remain with little economic security or migrating into uncertainty. And throughout the region, the trend towards grazing agriculture and mechanization resulted in less demand for farm labor, leaving a surplus population that would be redistributed to other industries or regions.

In this dissertation, the dynamics of this regional economic context helps explain why farm populations in some states placed more pressure on land-grant colleges than others. For example, Vermont agriculture remained the most profitable during the course of the study, providing little incentive for farmers to demand appropriations for an independent agricultural college. This can be compared to the small family farmers in Rhode Island and Connecticut who struggled to transition to more profitable techniques, and lent support to independent agricultural colleges as a means to improve their social and economic condition. Farmers throughout the region had a shared interest in employing new methods and technology as the only way to keep pace with Midwestern agriculturalists. It is not surprising that many farmers turned to agricultural colleges, experiment stations, and extension services to assure economic survival. Finally, the reconfiguration into a less labor-intensive agriculture made outmigration and population decline a phenomenon experienced in nearly every community. While the closing of
unproductive and unspecialized farms was part of a rational, market realignment, as a community experience it brought feelings of fear. Farmers would turn to land-grant colleges as a way to lessen this anxiety.

**New Demands for Higher Education**

*Demands for Agricultural Higher Education*

It was not regular farmers, anxious about their economic and social condition, who became the initial instigators for agricultural education. It was men of education and means, amateur scientists often referred to as gentleman farmers or agriculturalists, who took the lead in bringing education to American farmers. These individuals were instrumental in founding agricultural societies, fairs, and farmers’ journals. They were the *de facto* leaders of the movement for agricultural colleges in the Northeastern United States, often holding degrees from classical colleges, and unified by their interest in uniting science and agricultural practice. It was argued in agricultural society meetings that farmers could reap the economic and cultural rewards of the learned professional by placing the agriculture on firm scientific and theoretical foundations, and providing refinement through collegiate study.  

The curricula of agricultural colleges should not be limited, they argued, to practical farm training. Students would be schooled in scientific principles applied or connected to agriculture (chemistry, zoology, botany, veterinary science, geology, entomology, and mechanics). Since many agricultural society types also foresaw a cultural deficit existing in homesteads and farm communities that would inhibit the creation of farming professionals, they promoted cultural

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uplift through broad curricula that included the liberal arts. A course of study at such a high grade required students who were properly prepared, leaving agricultural society leaders to support admissions requirements that approximated the traditional colleges.

Many farmers appreciated the journals, fairs, and societies of the agriculturalists, and reaped economic returns from societies’ work on breeding science and cultivation techniques. However, some farmers were not willing to accept that “book-farming” was appropriate preparation for a tiller of the soil. Colleges (of any stripe) and college men were of a pretentious and aristocratic class, and farmers refused to assent that “theory” produced better results than traditional methods passed down through generations. They rejected the cultural value of liberal arts and literary societies, dismissing these distractions as effeminate, and calling for mandatory student labor to enshrine traditional class values of hard work. It was widely held that once a child was educated, they were no longer content with simple living, and pined for lives of leisure. And it remained a persistent fear that if higher education was not of a practical, manual nature, it would promote mobility out of the vocation and further deplete the agricultural class. If colleges could be organized around manual farm training, then farmers wanted as many of their children as possible to attend. Hence, they supported admissions’ standards that would allow any applicant with a district school education to attend. This was a philosophy of higher education for class preservation and vocational uplift, not social mobility.

118 Marcus, Agricultural Science and the Quest for Legitimacy, 57.
119 See for example, Seventh Annual Report of the Maine Board of Agriculture.
120 For a general discussion of farmers’ discontent with agriculture education movements see Scott, The Reluctant Farmer, 37-63. In Ross, Democracy’s College, 68-85, the author offers a state by state accounting of farmer opposition to early land-grant college arrangements.
New Middle Class Demands for Higher Education

The social mobility that farmers eschewed, however, was becoming an essential part of the Northern society and a Whig-Republican political ideology. In the years leading up to the Civil War, members of the new Republican Party “viewed social mobility as an essential part of Northern Society,” comparing its virtues to the stagnation and degradation of the Southern Slave economy. President Lincoln stated, “. . . advancement, improvement in condition – is the order of things in a society of equals.” The adherents of this ideology proposed that no individual was shackled to his status, and with hard work the wage-laborer could accumulate property, and in time, become a landowner, farmer, or capitalist. Such an ideology proved problematic in practice as low wages made capital accumulation difficult. Furthermore, many of the most fruitful opportunities for economic and social advance required technical skills or specialized education. Initially, vocational competency for new middle class careers was gained through self-study or on-the-job training, but in time, higher education was awakened to the lucrative possibilities of expanding curricula into the applied sciences. Individuals of modest backgrounds would achieve social mobility through their college studies, becoming engineers, chemists, agricultural researchers, or architects.  

122 Lincoln quote is printed in Ibid., p. 16.
123 See Margaret S. Gordon, “The Changing Labor Market for College Graduates,” in Higher Education and the Labor Market (New York, NY: McGraw-Hill, 1973). The author states, “With the rapid industrialization that occurred following the civil war, new demands were created for engineers, scientists, architects, and a host of other professionals. Thus it was scarcely an accident that the development of universities that began in the latter part of the nineteenth century accompanied, and to a degree was a response to, the emergence of more complex manpower needs in an industrializing economy” (p. 27). Alfred Chandler argues in The Visible Hand that the “rise of American engineering education . . . was, in part, a response to the needs of American railroads for trained civil and mechanical engineers” (p. 132)
124 A study of the social origins and career trajectories of land-grant colleges has yet to be conducted. Finding of this dissertation (see chapters 4-7), however, illustrate that in the Northeastern land-grant colleges (between 1862 and 1905), significant percentages of students (at some institutions up to 40 percent of the sample) experienced
Randall Collins and David Brown argue that the college degree offered more than content or skill mastery; it became a marker of middle class culture. Brown contends that the college credential was a “cultural-political constructions of competence and organizational loyalty that bore little relationship to the technical demands of modern work.”125 The college degree offered employers more than a promise of skill competency; it assured that the employer was gaining a colleague of a certain social type. The college-educated candidate was more likely to share the same values as the employer - what is today called “a good fit,”126 – similar life experiences, communication styles, leisure preferences, family lives, and temperament.

Burton Bledstein argues that the modern university became the cultural institution intimately connected with social mobility, the bourgeois worldview, and the credentialing of the new middle class. Professional education and professionalization was the means of “establishing universal standards” and separating the marketable “professional” from the untrained and un-credentialled “amateur.”127 Working class and farming youths would come to see the applied science curricula as a way to capture marketable skills, and the college credential was evidence of belonging to the new middle class cultural field. Lawrence Veysey adds that since upward and downward mobility were equal chances, the college degree became an “insurance policy” against

126 Brown, Degrees of Control.
127 Bledstein, The Age of Professionalism, p. 31.
descending into the lower rungs of society.\textsuperscript{128} By the 1890s, the spread of mass magazines and their popular representations of middle class college life would extend these values to the wider population, and popularize the college as a nursery of middle class ambition.\textsuperscript{129}

\textbf{The Higher Education Response}

The leading classical colleges of the nineteenth century were neither prepared nor interested in producing graduates to fulfill the complex manpower needs of a modernizing capitalist system. Most remained committed to instilling mental discipline through the study of ancient languages, mathematics, and moral philosophy, and of grooming students to become doctors, lawyers, and clergy.\textsuperscript{130} Between 1825 and 1860, colleges slowly incorporated professors of science - many the leading scientists in the country – to supplement the classical core with basic science. The pattern continued amidst an economic transformation raging outside the college walls that required skilled labor, applied science discoveries, and technological innovation. While leading German universities were quick to incorporate a broad spectrum of scientific study, the higher education vanguard in America moved more slowly, content to supply a steady demand for classical education and professional preparation.

Important exceptions were the establishment of Yale’s Sheffield Scientific School (1846), the Lawrence Scientific School (1847) at Harvard, and Dartmouth’s Chandler Scientific

\textsuperscript{128} Laurence R. Veysey, \textit{The Emergence of the American University} (Chicago, IL: The University of Chicago Press, 1965), Quote from p. 266.


\textsuperscript{130} The new consensus on the leading classical colleges of antebellum America is that these programs remained popular while following the dictates for mental discipline laid out in the \textit{Yale Reports of 1828}. Curricular innovations tended to decrease institutional status and overall demand and were pursued warily. However, as this section discusses in detail, these colleges were increasingly facing a diverse marketplace of higher education institutions. For an overview see Roger L. Geiger, “Introduction,” 1-34.
School (1852). The Sheffield School offered students (not Yale undergraduates) two year courses in chemistry and engineering (which matured into a three-year program), and the opportunity for advanced study in geology, physics, agricultural, mines, metallurgy, and mechanics. The Sheffield Scientific School became a national leader in scientific research and education. The recruitment of Louis Agassiz to the Lawrence Scientific School brought one of the best known and respected scientists to Harvard. It also assured a focus on the basic sciences and individual study, and causing the Lawrence Scientific School to lag in developing programs in engineering and other applied fields. The Chandler School followed Sheffield’s lead in offering a three-year degree in engineering and chemistry, however the diminutive age and lax preparation of its students made the institute the junior and less prestigious partner of Dartmouth’s classical college.131

There were some classical colleges that attempted to add applied science courses to the traditional curricula. The leading higher education reformer of the era - Francis Wayland of Brown College – created an academic program in 1851 that shortened the classical curriculum and made room for applied courses in teaching, agriculture, chemistry, and engineering.132 The Wayland experiment relaxed standards and offered partial courses to encourage students from the “industrial classes” to enroll at the college.133 The program opened to large interest, but diminished standards blighted the reputation of the college and depressed enrollments; the board of trustees returned Brown to a traditional course soon after.134 Student demand and the specter of the Yale Reports of 1828 kept leading colleges from straying too far from the classical mold.

131 Roger L. Geiger, “The Rise and Fall of Useful Knowledge, 153-168; Ross, Democracy’ College, 19-21; Rudolph, The American College and University, 231-234.
132 Roger Geiger, “The Rise and Fall of Useful Knowledge,” 158
133 For an overview of the Wayland reforms see Walter C. Bronson, The History of Brown University, 1764-1914 (Providence, Ri: Brown University, 1914), 258-292
The failure of the Wayland reforms suggested to contemporaries that pursuing the market too readily could have disastrous results for the standing and viability of a traditional college. Yet, the scientific schools and curricular reforms opened the vanguard of classical education to applied scientific study for the first time. As a student at Yale College, Andrew Dickson White recalled, “I saw a student examining a colored liquid in a test-tube. A feeling of wonder came over me! What could it all be about?” He admits at first he saw such pursuits as futile, but the experience would be formative in his vision of a modern university, where scientific studies and literary pursuits coexisted and flourished.\(^{135}\)

Other innovations to the traditional model developed sporadically as individuals devoted to science and practical application established new ventures. This was especially true in agriculture, as several institutions were founded in the years prior to the Morrill Act of 1862. Robert Gardiner, a Harvard graduate and a promoter of agricultural societies and science, founded a lyceum in Maine in 1821 to “teach those branches of natural philosophy and chemistry which are calculated to make scientific farmers and mechanics.”\(^{136}\) The Gardiner Lyceum persisted until 1832 and was later made an academy in 1848, but the decade of public lectures and instruction would influence several future leaders of agricultural societies and educational institutions.\(^{137}\) Starting in 1846, the Farmers’ College outside Cincinnati, Ohio opened with the plan to offer both classical studies and applied sciences for those entering agricultural or industrial pursuits. The college catalogue displayed an expansive fare: four year classical course including study in the ancient languages, practical short-courses in agriculture, horticulture,


\(^{137}\) S. L. Boardman, “The School at Gardiner, Maine,” In Liberty Hyde Bailey and Wilhelm Miller (Eds.) *Cyclopedia of American Horticulture* (New York, NY: The MacMillan Co., 1909), 363-366. Perhaps the most important legacy was the school’s relationship with Dr. Ezekiel Holmes who would play the decisive role in establishing the land-grant college at Orono, Maine.
teaching, or business for “young men who have not the time, money, or inclination to take the long classical course,” and a scientific course based in mathematics with applications in engineering and surveying. The Farmers’ College presaged the land-grant act by two decades, but failed to secure Ohio’s share of the Morrill funds, and languished under the financial stress of its audacious scope.138

In four states, agricultural societies secured state appropriations prior to the Morrill Act to establish the New York State Agricultural College at Ovid (f. 1853), Michigan State Agriculture College (f. 1857), the Maryland Agricultural College (f. 1858), and Pennsylvania’s Farmers’ High School (f. 1859). Like the agricultural societies that supported them, the institutions were designed for the scientific study and practice of agriculture. For example, the following was stated in the Farmers’ High School catalogue:

[The college] shall adopt a system of instruction which shall embrace the fullest extent possible those departments of science which have a practical or theoretical bearing upon agricultural and agricultural interests.139

New departures in engineering education were evident as early as 1817, when West Point began a European-styled program under the guidance of Sylvanias Thayer. In Vermont, the Norwich Academy became Norwich University in 1834 and started an engineering program. Union College, an institution known for curricular innovation, introduced civil engineering in 1845, the same year the Naval Academy moved forward with a course on steam engineering. Renesselaer Polytechnic became the nation’s first full-fledged engineering college in 1851, offering a three-year civil engineering degree, and was soon followed by the establishment of

139 Ibid., 48-53, 66-71, quote from p. 70.
polytechnic institutes in Philadelphia (f. 1853) and Brooklyn (f. 1854). In the midst of these engineering reforms, William Barton Rogers presented his plan for a Massachusetts Institute of Technology in 1860. The scheme included a research component “to promote research in connection with industrial science,” a museum to highlight the connection between theory and practice, and the “systematic training in the applied sciences . . . to give to the industrial classes sure mastery over the materials and processes over which they are concerned.” MIT would not open until 1865, when it would proceed to become the standard-bearer of scientific education and research.

In addition to the above departures in applied science, the higher education marketplace was also becoming eclectic by mid-century as denominational colleges experimented outside the classical mold. The denominational colleges, products of religious groups seeking an educated laity, spread westward into numerous small communities. They remained the characteristic higher education institution from the 1850s to the 1880s. In an effort to meet the needs of the local populace and to compete with “high schools, normal schools, institutes of technology, and commercial colleges,” the majority of these institutions entered new markets. Their curricular departures included: “the education of teachers, separate schools of science, engineering, or agriculture; and short courses for commercial subjects.” These multipurpose colleges also coexisted with numerous engineering, business, applied science, vocational, and high schools – many of fleeting success and uneven reputation – that opened in cities nationwide for aspiring to new middle class careers.

140 See Geiger, “The Rise and Fall of Useful Knowledge,” 159-160.
The second president of Cornell University, Charles Kendall Adams, declared that Justin Morrill’s land-grant legislation was a product of the “spirit of the age.” The proposed land-grant colleges would certainly join a fluid marketplace awash in the educational innovations of agricultural institutes, scientific schools, and multipurpose colleges. The Morrill Land-Grant Act of 1862 provided federal land to each state and territory to be sold for the purpose of maintaining

... at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts... in order to promote the liberal and professional education of the industrial classes in the several pursuits and professions of life.

The legislation called for institutions that preserved the literary subjects, but elevated the scientific study of agricultural and mechanical arts. Morrill, a son of a blacksmith, had always pined for a formal education and believed that the children of industrial and agricultural laborers – as much as the son of the professional – “had some right to more of sound and appropriate learning that would elevate and especially profit them in their respective careers.” The classical colleges, according to Morrill, were resistant to studies that would prove useful to individuals pursuing a livelihood outside the learned professions. Morrill viewed the land-grant act though the eyes of a statesman and the lens of political economy. He believed land-grant colleges’ highest purpose was to make America a great nation and Americans great people. In one of his last speeches he explained “These colleges are thoroughly American!... Our

145 Morrill’s biographer Coy Cross makes the same link between his subject’s inability to obtain a formal education and his advocacy for educational access. See Coy F. Cross II, *Justin Smith Morrill: Father of the Land-Grant Colleges* (East Lansing, MI: Michigan State University, 1999), 77-78. The quote is from Justin Morrill, *Address*, p. 18.
countrymen need, and it is hoped will here find, that fundamental instruction which is founded on the widest and best experiences of mankind.”

Justin Morrill’s liberal scheme and his broad land-grant vision for economic and national development would be contested in state houses, grange halls, newspapers, and other public forums. While the colleges were supported by federal funds, implementation and oversight was the domain of the states. Legislative committees convened to ascertain the purposes of the Morrill Act, and boards of visitors assured that land-grant colleges followed the educational ideology of the dominant political bloc. Class-based economic and social interests entered the political arena to advance conflicting schemes for these institutions, and parsed the Morrill Act for language that supported their interpretation. Farmers read the clause “to teach such branches of learning as are related to agriculture . . .” as calling for practical farm training, and “education for the industrial classes” as meaning broad access to farming youth even at the cost of low admissions standards. The grange ignored the warning not to exclude “other scientific and classical studies,” which men like George Atherton embraced to support a liberal scope and high intellectual standards for land-grant colleges. Morrill, Andrew Dickson White, and Daniel Coit Gilman would argue that graduates should follow “several pursuits and professions of life,” but if the act was truly for the industrial classes, farmers argued, then their wish was for land-grant colleges to produce more farmers. The Morrill Act was perfectly ambiguous and invited these conflicting perspectives. The history of the first forty years of the land-grant movement is a history of this conflict.

Research Questions and Chapters

This dissertation is a history of the conflicting, class-based pressures on land-grant colleges in the Northeastern United States. This study chronicles the evolving meanings of what constituted a proper land-grant education, developments in state and institutional policies, the activities and educational visions of class-based organizations, and the process of formation and reformation of land-grant colleges throughout the region. The dissertation is guided by three questions:

What were the underlying factors that precipitated the pattern of formation and reformation of Land-Grant colleges in the Northeastern United States?

What was the distinct pattern of land-grant education that emerged and developed in the Northeastern United States?

What were the competing visions of land-grant education offered by farmers, academics, and bourgeois reformers advocated in this context, and how did they interact and contribute to the development of land-grant education in the Northeastern United States?

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These questions are addressed through six thematic chapters. In *The First Four Decades of Land-Grant Education in the Northeastern United States* (chapter 2), I provide an overview of the first four decades of land-grant education in the region. The chapter explores how through four historical phases, social and economic changes prompted class-based demands on land-grant colleges, transformed the contours of state-level debates, and influenced institutional formations and reformations throughout the region. I explain in *The Origins of Land-Grant Education in the Northeastern United States: Creating Colleges of Science, Industry, and National Advance* (chapter 3), how original land-grant models were developed by educational reformers who hoped to advance science in American higher education and enhance the nation’s economic
competiveness. Daniel Coit Gilman became the most prolific defender of this perspective after penning the article “Our National Schools of Science.” He and his allies argued America should follow Europe’s example by making the leading aims of land-grant colleges the study and application of science, for the purpose of graduating mangers and specialists to guide the nation’s industrial advance. I illustrate in this chapter how two Northeastern Land-Grant Colleges, Yale’s Sheffield Scientific School and Cornell University, were the epitome of this perspective. *The Land-Grant Reformation in the Northeastern United States* (chapter 4), details the movement to reform land-grant arrangements in the Northeastern United States. I argue that the broad-gauge, National School of Science model that was propagated in the first decade of land-grant colleges became odious to farmers for failing to produce practicing farmers, exacerbating rural outmigration, and minimizing practical farm training. Specifically, I explicate the process by which state granges put pressure on legislators to remove land-grant funds from Yale’s Sheffield Scientific School and Brown University, and made the grange-supported Storrs Agricultural School and the Kingston (Rhode Island) Agricultural School the land-grant institutions in their respective states. The chapter concludes with a discussion of how the University of Vermont was able to resist such a fate, largely through the personal intervention of Justin Morrill. In *The Curious Cases of John Washburn and George Flint and the Forces of Land-Grant Standardization* (chapter 5), I explore the presidencies of John Washburn at the Rhode Island Agricultural and Mechanical College and George Flint at the Connecticut Agricultural College. Both attempted reforms to elevate the selectivity and academic rigor of their institutions to meet the standards of the Association of Agricultural Colleges and Experiment Stations, to distinguish their offerings from an emerging high school sector, and to meet the educational needs of a growing population of high school graduates. In addition, these
presidents eliminated required farm labor, and nurtured the rise of a campus culture to meet the insatiable demand for extracurriculars like football, literary societies, and fraternities. Angered by this move away from their practical, manual-training scheme, the grange turned on the colleges they had previously supported and were responsible for the ouster of Washburn and Flint. In the final chapter, I offer a brief summary of the patterns of land-grant development and an assessment of the economic, political, and social forces that shaped that process.
CHAPTER TWO

The First Forty Years of Land-Grant Education in the Northeastern United States

“Should it be Agricultural Colleges apart from schools of all other sorts, or should it be in a department of agriculture connected with the University. On one hand were those who argued for separate Agricultural Colleges: they claimed that these colleges did good work. This was certainly true. It was argued that agricultural students in a university would under constant temptation to quit agriculture for professions more lucrative and honorable: this also was true. But finally, it was argued on this account that Agriculture ought to be separate from the University and put some other part of the state. This in my opinion was not true. And the tendency was overcome.” - Andrew Dickson White

Introduction

The Morrill Act of 1862 is traditionally remembered as the federal government’s first major intervention into American higher education – setting the stage for the Smith-Lever Act, the GI Bill, and the Higher Education Acts. The distribution of federal lands, Daniel Coit Gilman’s call for National Schools of Science, and the rise of the Association of American Agricultural Colleges and Experiment Stations gives the movement its undoubtedly national character. Yet as Justin Morrill characterized his plan, “The whole matter [was left] to the entire control of the several States to arrange, manage, and control as they may see fit . . .” Born from the political culture of individual states, a diversity of land-grant ideas were formed in agricultural society meetings, grange halls, newspapers, and statehouses. State legislatures determined which institutions would receive land-grant funds, suggested academic programs,

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1 Andrew Dickson White, “Training for Farmers,” Speech delivered in 1890. Andrew Dickson White Papers, Division of Rare and Manuscript Collections, Cornell University Library. Speeches on Cornell University and Education, Reel 147.
2 Edward D. Eddy, Colleges for our Land and Time: The Land-Grant Idea in America (New York: Harper & Brothers, 1956), 267-286; John R. Thelin, A History of American Higher Education (Baltimore, MD: Johns Hopkins University Press, 2004), 74-79; Christopher J. Lucas, American Higher Education History (New York: St. Martin’s Griffin, 1994), 147-148. It should be added that these authors note that the Northwest Ordinance of 1787 was technically the first federal policy on education, but of minor significance compared to the ultimate outcome of the Morrill Acts.
3 This quote was printed in the Congressional Globe, 35 Congress, 2 Session, 1414. The quote is reprinted in Earle Ross, Democracy’s College (New York: Arno Press, 1969), p. 68.
curricula, and student labor requirements, and assessed compliance. The considerable latitude given to states to interpret and implement the terms of the act resulted in an eclectic institutional landscape, as the political, economic, and social dynamics of different regions nursed unique land-grant experiments. A proper accounting of the land-grant movement requires an awareness of local, state, and regional contexts, and an appreciation of the diversity of institutions that have been labeled by the “historical construct” of “land-grant college.”

As the opening quote of Andrew Dickson White attests, the most contentious issue was the selection of a state’s land-grant designee: should state governments appropriate funds to found new agricultural and industrial colleges or promote existing institutions to land-grant status? Even after legislatures decided this question between 1862 and 1867, the debate was far from over. The rise of the grange in 1873 would signal a renewed effort to create independent agricultural colleges in those states that had attached the grant to traditional colleges. In the 1890s, land-grant education in the Northeastern United States would be reformed as granges and their allies in some states succeeded in removing the federal funds from the original designees and established new land-grant colleges.

**Independence or Partnership, 1862-1867**

The signing of the Morrill Act by Abraham Lincoln on July 2, 1862 was greeted enthusiastically in the state of Maine. Statehood had arrived only forty years earlier, and Maine’s lawmakers tended to embrace internal improvements that would advance their standing in the

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4 Roger L. Williams, *The Origins of Federal Support for Higher Education* (University Park, PA: The Pennsylvania University Press, 1991) p. 2. Williams suggests that the idea of a singular “land-grant college movement” should be conceived of as a “historical construct . . . an invention by scholars to give form and meaning to otherwise nebulous and uncertain developments.”
union. Governor Abner Coburn summed up the exuberance of many when he exclaimed, “there can be no doubt, I think, that vast benefit will flow from this act . . .” Maine had a tradition of educational innovation, founding and providing state funds for the Gardiner Lyceum as the nation’s first institute of agricultural education in 1821. There were agricultural societies in villages across Maine, a state board of agriculture, and a weekly journal entitled The Maine Farmer. The gentleman farmers and men of science that populated these organizations – historian David Smith calls them Maine’s “agriculture aristocracy” – pressed the legislature to participate in the land-grant program.

In the winter of 1863, the Maine legislature accepted the educational terms of the land-grant act, and turned to consider where to place the grant. A bill for a new, independent industrial and agricultural college was scuttled in March over financial concerns. The governor offered a view gaining adherents in many circles, “It may be expedient, or even necessary, to allow some of our existing institutions to avail themselves of the benefit of the grant.” A special committee was appointed to consider the state’s options. Soon the presidents of Bowdoin College and Waterville College were before the committee declaring that their respective institutions were able and willing to serve as Maine’s land-grant college. Dr. Leonard Woods of Bowdoin played upon the fears of a fiscally cautious and war-weary legislature when he promised that Bowdoin could “. . . without involving any expense to the State [perform] all the obligations assumed by it

8 Smith, The First Century, p. 4.
9 Governor is quoted by President Fernald in Hall, “History of Higher Education in Maine,” p. 160.
in accepting said grant . . .”\textsuperscript{10} The Bowdoin petition promised that lectures and professorships in vegetable physiology, anatomy, veterinary science, stock breeding, practical chemistry, physics, practical mechanics, and engineering.\textsuperscript{11} The state commission endorsed the Bowdoin partnership, but an opposition soon gathered at the instigation of Ezekiel Holmes, editor of the \textit{Maine Farmer}. He argued that the land-grant fund would only serve the interests of farmers if it was “unhampered by any connection with any existing institution – ‘a tub on its own bottom’.”\textsuperscript{12}

Holmes was not a farmer, but like many from these years that were leaders of the agricultural societies and farm journals, he was a man of education devoted to science.\textsuperscript{13} He had graduated from Brown University in 1821, received a medical degree from Bowdoin College, and served as a teacher then principal of the Gardiner Lyceum.\textsuperscript{14} Holmes had been discouraged by the financial hardships and premature demise of the lyceum, and refused to let a perpetual fund devoted to scientific agriculture fall to a classical college.\textsuperscript{15} While he held his alma mater in high regard, Holmes warned his agricultural society brethren that a connection with Bowdoin would permit literary studies to continue to overshadow the applied sciences. Holmes told readers that an independent agricultural institution could stem the tide of outmigration, keeping talented progeny in the rural communities of Maine.\textsuperscript{16} Waffling agricultural leaders were reminded by Holmes that the Morrill Act could fulfill a central tenant of their order – advancing

\textsuperscript{10} Communication from Dr. Woods of Bowdoin College to the Board of Commissioners “relating to the establishment of a college for the benefit of Agriculture and Mechanical Arts.” Forty-Fourth Legislature, House (No. 8). State of Maine (Stevens & Sayward, Printers to the State, Jan. 1865), p. 14.
\textsuperscript{11} Ibid, 14-15.
\textsuperscript{12} Ezekiel Holmes, “The Lessons of the Hour,” Speech before the Kennebec County Agricultural Society at Readfield, October 20, 1864. Smith, \textit{The First Century}, 8-9.
\textsuperscript{15} Ibid, 1-3.
\textsuperscript{16} Smith, \textit{The First Century}, 1-5.
the science and practice of agriculture. The agriculture interests rallied and the Bowdoin plan was rejected. Holmes would pass away unexpectedly before he could witness the founding of the Maine Agriculture and Mechanical College and its designation as the state’s land-grant college on February 25, 1865.

Massachusetts farmers were stirred to action by the state agricultural board to challenge Governor John Andrews’ proposal to attach the land-grant funds to Harvard University. Massachusetts received the largest land-grant scrip in New England, and the governor wanted to combine the proceeds with the recently donated Bussey Estate. The governor noted in his “Great Plan for Massachusetts” that the opportunity afforded by the federal funds could provide the means for “a university which would be worthy of the dream of her fathers, the history of the state, and the capacity of the people.” Andrews was inspired by the great German universities and their commitment to research, science, and learning: “Let us plan to concentrate here the ‘gladsome light’ of universal science. Let learning be illustrated by her most brilliant luminaries, and the claims of every science be vindicated by its bravest champions.” Two competing proposals were proffered from Amherst and Williams Colleges to use the funds to support their

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18 Hall, “History of Higher Education in Maine,” 162.  
19 Smith, The First Century, 1-5.  
21 Benjamin Bussey was a prominent Boston merchant and farmer who bequeathed part of his estate to Harvard University for “instruction in agriculture, horticulture, and related subjects.” In time, the proceeds of the gift were used to establish the Bussey Institute, a school dedicated to agricultural science and experimentation. For a discussion of the Bussey Institute see Samuel Eliot Morison, Three Centuries of Harvard, 1636-1936 (1936, reprint Cambridge, MA: Harvard University Press, 2001), 323-364.  
22 Acts and Resolves Passed by the General Court of Massachusetts in 1863 (Boston, 1863), p. 620.  
23 Ibid.
institutions’ lecture series on agriculture, and one from William Burton Rogers’ Institute of Technology.\textsuperscript{24}

A legislative commission was appointed to review the proposals. While the commission conducted its work, the state board of agriculture campaigned against the governor’s plan through its network of agricultural societies.\textsuperscript{25} The lobbying effort was done without the participation of regular farmers; it was again the work of the gentleman farmers in the agricultural societies. In fact, the primary news outlet for most Massachusetts farmers – The New England Farmer - failed to cover the vicissitudes of the land-grant debate.\textsuperscript{26} The commission and legislature sided with the state agricultural societies and agreed to establish an independent agricultural college, providing it with two-thirds of the federal grant (the other one-third was given to the Institute of Technology for education in the mechanical arts). The spoils for the men on the agricultural board were trusteeships at the new college.\textsuperscript{27}

In New York, there were two possible candidates – the New York State Agricultural College at Ovid and the People’s College at Havana. In 1853, the New York legislature had issued a charter that elevated the academy at Ovid into the state’s agricultural college. Through public subscription, the college secured the means to purchase a 300 acre farm and recruit agriculture and chemistry Professor William H. Brewer from Yale’s Sheffield Scientific School.\textsuperscript{28} The agricultural college was making steady progress in the 1850s, producing several

\textsuperscript{24} Cary, The University of Massachusetts, 23-37.
\textsuperscript{25} Ross, Democracy’s College, 70-71.
\textsuperscript{26} Ibid, 71.
\textsuperscript{27} Cary, The University of Massachusetts. For an excellent discussion of MIT’s place in Massachusetts’ land-grant history see Julius A. Stratton and Loretta H. Mannix, Mind and Hand: The Birth of MIT. (Cambridge, MA: The MIT Press, 2005.)
\textsuperscript{28} True, A history of agricultural education, 51-53.
graduates that included future educators at Rutgers, Cornell, and Yale.\textsuperscript{29} The onset of the Civil War, however, prompted a precipitous decline. When the legislature began evaluating possible land-grant designees in 1862, the doors at Ovid had been closed for over two years.\textsuperscript{30}

The second candidate, the People’s College, owed it existence that started as early as 1837. Mechanics and artisan organizations in upstate New York advocated for educational institutions that could provide “the principles and sciences governing the mechanics and the arts . . . [that would give workers] the greatest proficiency in their several callings.”\textsuperscript{31} An effort in 1849 to raise $100,000 amongst mechanics associations was loudly supported by Horace Greely, who suggested adding agricultural studies to the proposed curriculum. These efforts coalesced in the founding of the People’s College Association in 1851. The organization presaged the Morrill Act by a decade by proposing the following purpose for the college:

\[\ldots\] to minister to the educational wants of the youth of the whole people [through] the dissemination of practical science, including chemistry, geology, mineralogy, and those sciences most immediately and vitally essential to agricultural and the useful arts, though instruction in the classics shall be amply provided.\textsuperscript{32}

In 1853, a charter was issued, and newly minted trustees began a subscription campaign. Fundraising went badly, until an offer of $50,000 and 300 acres from Charles Cook was readily accepted in 1856.\textsuperscript{33} As a condition of his gift, Cook stipulated that the People’s College be built in his remote hometown of Havana, New York.\textsuperscript{34} Over eight thousand people turned out for the

\begin{itemize}
\item \textsuperscript{29}Ibid., 52.
\item \textsuperscript{31}Quote is from People’s College Prospectus as cited in Alfred C. True, A history of agricultural education, p. 55.
\item \textsuperscript{32}This part of the mission statement is reprinted in the Circular of the People’s College of the State of New York. (New York, NY: Wynkoop, Hallenbeck, & Thomas Printers, 1858), p. 9.
\item \textsuperscript{33}True, A History of Agricultural Education, 55-56.
\item \textsuperscript{34}Albert H. Wright, The New York People’s College (Ithaca, NY: Cornell University Press, 1958).
\end{itemize}
laying of the People’s College cornerstone in September of 1858, as college dignitaries and politicians gave rousing speeches on the promise of the new experiment.\(^{35}\)

The colleges at Havana and Ovid both pursued the federal funds, but the People’s College benefited from the adroit political maneuvers of its principal. Charles Cook won election to the state senate with the singular purpose of securing the land-grant endowment for his “little Oxford.”\(^{36}\) His efforts proved successful; on May 14, 1863, the legislature designated the People’s College the state’s land-grant institution. However, since the college was not yet operational – it lacked a finished building, students, and faculty - the legislature declared that the land-grant scrip would only be transferred after a three year probationary period. To become eligible, the college would have to secure ten professors, a farm of 200 acres, shops and machinery, a building that could house 250 students, and a library. It appeared to most contemporary observers that these extraordinary conditions would prove well out of the reach of the People’s College.\(^{37}\)

In Pennsylvania, the Farmers High School (chartered in 1855) was renamed the Pennsylvania Agricultural College in 1862 after coming under the capable leadership of Evan Pugh. Pugh held a Ph.D. in agricultural chemistry from the University of Göttingen, Germany and provided the Pennsylvania Agricultural College with firm ideas on the form and function of an industrial college curriculum.\(^{38}\) His plans anticipated developments in land-grant education that would not be standardized until the turn of the century. Pugh proposed curricula anchored in the study and application of science and dismissed the value of practical training and required

\(^{38}\) Ross, *Democracy’s College*, 28-29.
labor. While noting that the institution would train aspiring farmers in the best scientific methods, he stated the college would also produce “research specialists and teachers for the rural schools.”

Pugh’s central purpose for the college was to connect the scientific discoveries of the faculty to the farmer in the field, and to these ends he proposed “branch schools” and “observation stations” in every county in the commonwealth. It was an agenda that was embraced wholeheartedly by the scientifically-minded gentlemen of the state’s agricultural societies.

The Pennsylvania Agricultural College was designated as the state’s land-grant recipient in 1863, amongst rumblings from several other colleges coveting a portion of the federal revenue. In 1864, petitions from these colleges promoted a bill to repeal the Pennsylvania Agricultural College’s land-grant status. Pugh penned a thirty-five page document defending his vision for the state agricultural college, which he delivered to a legislative committee on March 3, 1864. The Senate voted in favor of repeal 23 to 9, but the House postponed the matter indefinitely by a tally of 47 to 44. The Pennsylvania Agricultural College retained its hold on the federal funds, but it would not be until a second attempt at repeal was defeated two years later that the institution would become the undisputed land-grant college of Pennsylvania. As for Evan Pugh, Penn State historians conclude that his ceaseless work on behalf of the college led to his premature demise. He became gravely ill at the President’s desk, and died a few days earlier on April 22, 1864.

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39 Cited in ibid., p. 29.
40 Eddy, College for Our Land and Time, 19-20.
42 Peter Moran and Roger Williams, Saving the Land Grant for the Agricultural College of Pennsylvania.
43 Dunaway, History of the Pennsylvania State College, 50-51.
44 See Ibid., 52.
The passing of Evan Pugh cast the Pennsylvania Agricultural College into two decades of uncertainty. Between 1864 and 1881, five different presidents waffled between conflicting philosophies on the proper course of study. Pugh’s successor was a Bowdoin College graduate and former chemistry professor named William Allen.\textsuperscript{45} When President Allen assumed his duties in 1865 he inherited an outstanding building debt of $50,000, the lasting distress from the Civil War, and a renewed effort by the state’s other colleges to secure a portion of the land-grant. While Allen was able to preserve the college’s land-grant status, he lacked the resources to develop a coherent academic plan. He was followed by President John Fraser, a Scottish emigrant and Aberdeen University graduate, who convinced the Board of Trustees to embrace educational reforms that approximated Pugh’s vision.\textsuperscript{46} Agriculture would be taught as an experimental science, manual labor would be replaced with military drills, new courses were offered in mechanical and civil engineering, three four-year programs were offered in general science, agriculture, and literature, and tuition was raised to help cover the expansion.\textsuperscript{47}

While this liberal land-grant vision would have met the approval of Justin Morrill or Evan Pugh, the Pennsylvania Agricultural College lacked the funding to carry out such an ambitious program. Enrollments did not increase in response to the expanded offerings, and by 1868, Fraser stepped down. President Thomas Burrows took the reins of the college in 1868 and pledged to secure the institution’s finances and return to the practical focus of the Farmers High School period – farm training, labor requirements, and applied courses taught by practicing farmers. Burrows would die in 1871 and the next two presidents would oscillate between these

\textsuperscript{45} Michael Bezilla, \textit{Penn State: An Illustrated History} (University Park, PA: The Pennsylvania State University Press, 1985), 14-15. Bezilla refers to this period in the college’s history as an “era of drift.”
\textsuperscript{46} Ibid., 16-17.
\textsuperscript{47} Ibid.
two perspectives. The college was roundly criticized by lawmakers and citizens as uncertain in its mission and purpose.\(^\text{48}\)

The Sheffield Scientific School of Yale College was the only volunteer in the state to accept both the endowment and responsibility of being Connecticut’s land-grant institution. The contract between the state and Yale stipulated that one-half of the land-grant interest (the principle was $135,000) was to be spent on full tuition scholarships for state-nominated students.\(^\text{49}\) The leading figures at the Sheffield Scientific School, John Pitkin Norton, Samuel Johnson, George Brush, Daniel Coit Gilman, etc, had all pursued university study and research in Germany, and were committed to recreating a similar scientific institution in Connecticut. As such, they quickly dismissed any notion that land-grant status would prompt new departures into practical agriculture and mechanics. One professor stated in a local newspaper that “Yale College does not propose to run a machine shop,”\(^\text{50}\) and the school’s director George Brush warned that “. . . there is to be no farm connected with our establishment, we shall keep as close to pure science as possible.”\(^\text{51}\) The Sheffield School faculty took their cues from Göttingen University, not from the needs of local farmers and mechanics.\(^\text{52}\) In the words of it greatest champion, Daniel Coit Gilman, the institution was on a quest to “hold an honorable place” amongst those institutions “for the promotion of scientific research and education.”\(^\text{53}\) Meanwhile,

\(^{48}\) Ibid., 18-25; Dunaway, History of the Pennsylvania State College, 94-110.
\(^{50}\) Letter from “One of the Mechanics” to the Editor, The Palladium [New Haven, CT, 1865].
\(^{51}\) Cited from J. E. Lord, Yale or Storrs?: The Land-grant Controversy in Connecticut. (PhD diss., Yale University, 1974).
\(^{52}\) For a discussion of the influence of the German Universities on the early leaders in American scientific institutions see Charles E. Rosenberg, No Other Gods: On Science and American Social Thought. (Baltimore, MD: Johns Hopkins University Press, 1976), 135-152.
Connecticut farmers assumed the state’s land-grant fund would yield a steady crop of new farmers to counter rural outmigration, and were left unaware of the schemes of the Sheffield School faculty.54 This misconception stemmed from the dearth of land-grant newspaper coverage, and the agricultural society’s close relationship with the scientists at the Sheffield School. The men that populated the agricultural societies and the Sheffield School faculty shared the common goal of advancing the scientific branches that informed the practice of agriculture.

Rutgers College and Princeton College each moved with purpose in 1862 to create scientific schools, each communicating a willingness to play host to land-grant education in New Jersey. In February of 1863, representatives from the rival colleges testified before legislative committees that their respective scientific schools could best serve the aims of the Morrill Act.55 Rutgers chief spokesman was Professor Charles Cook (not to be confused with Charles Cook of People’s College, New York), a driving force on creating new scientific courses at Rutgers and a well-respected expert on educational matters at the state capital. Through his leadership and political connections, Rutgers surpassed Princeton as the leading candidate.56 The Senate declared Rutgers New Jersey’s land-grant college with a vote of 12 to 6 and the House concurred by a vote of 50 to 1.57 Cook was a mainstay of the New Jersey scientific establishment, and the state agricultural societies remained confident in his assertions that the new scientific school would promise profitable discoveries in agriculture and the mechanical arts.58

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54 The best measure of regular farmers’ interpretations of the land-grant act during this period (1862-1870) comes from letters written to agricultural journals. These pieces consistently connect agricultural education with the curbing of outmigration.

56 Ibid. McCormick notes that Cook had been working as the state geologist, a position that gained him many associates in scientific circles and in the state house at Trenton.
58 Ibid., 409-413.
Brown College was the only institution of collegiate character in the state of Rhode Island when the legislature voted to accept the federal land-grant on January 15, 1863.\textsuperscript{59} Rural state senators, however, rallied an opposition caucus against Brown, questioning if the college could “provide a proper education for the industrial classes.” They could only manage to delay the legislation for a week.\textsuperscript{60} The leaders of the state’s agricultural society, the Rhode Island Society for the Encouragement of Domestic Industry, hastily submitted a resolution to the legislature for the establishment of an independent agricultural college. As in Maine, the society men hoped to prevent investment in a classical college and prompt the construction of a new school of science where they could play the leading role.\textsuperscript{61} There was only a week of debate, however, and the society had neither the time nor the resources to rally farmers behind their plan. Their task was complicated by the paucity of land revenue that was due Rhode Island, and a conservative legislature that was unwilling to appropriate funds for a new institution when Brown was prepared to do the job for free.\textsuperscript{62} The critics in the legislature were mollified by an agreement that Brown would provide a set number of $100 scholarships each year, in which a State Board of Commissioners would select the beneficiaries (ideally drawn from the agricultural and industrial classes).\textsuperscript{63} With these initial concerns addressed, Brown became the state’s land-grant college on January 27, 1863 without further debate or opposition.\textsuperscript{64}

Perhaps the most innovative and accidental land-grant arrangement in New England occurred in Hanover, New Hampshire. In 1863, the legislature approved the provisions of the Morrill Act and appointed an investigative commission to make recommendations as to the

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\textsuperscript{59} Providence Journal, Jan. 16, 1863.
\textsuperscript{60} Herman F. Eschenbacher, The University of Rhode Island: A History of Land-Grant Education in Rhode Island (New York: Meredith Publishing, 1967), 1-62.
\textsuperscript{61} Ibid.
\textsuperscript{62} Providence Journal, Jan. 22, 1863.
\textsuperscript{63} Walter C. Bronson, The History of Brown University, 1764-1914 (Providence: Brown University, 1914).
\textsuperscript{64} Providence Journal, Jan. 18, 1863.
\end{flushleft}
appropriate land-grant recipient. The commission considered two options: accept a private
donation of a 400 acre farm and $30,000 for creating an independent agricultural college or
designate Dartmouth College the state’s land-grant college. President Asa Smith of Dartmouth
lobbied intently for the grant, stating his institution would “make whatever additional provisions
for Agricultural Education as should be thought needful . . . [and offer] gratuitous instruction of
pupils selected under the authority of the State.” If selected, Smith argued, the state would not
need to appropriate for buildings, professors, or apparatus thanks to the availability of
Dartmouth’s resources. The president had calculated that the interest on the federal funds would
pay tuition for sixty new students annually and help resuscitate Dartmouth’s depressed
enrollments and coffers.

Like in other New England states, the agricultural societies pressured the legislature for
an independent agricultural college, unencumbered by connection to a classical institution. To
assuage these fears, Smith made an offer that would not only decide the question, but impact the
first forty years of land-grant education in New Hampshire. He proposed that fiduciary
management of the land-grant fund and oversight of the agricultural course be placed in the care
of the ex-officio members of the Dartmouth College board. These state officials could assure
proper stewardship of the fund and compliance with the educational requirements outlined in the
act. When the legislative committee submitted its report, however, it offered a novel arrangement
to appease both sides. New Hampshire would found the New Hampshire College of Agricultural
and Mechanical Arts with its own board of trustees, and place the proceeds of the land-grant
funds and a private gift for agricultural education at its disposal. The college would be located

66 Ibid., p. 10.
67 Ibid., 10-11.
adjacent to Dartmouth, and the two would be “held together by a contract and interlocking board of trustees . . .”

The agricultural societies were pleased with the plan, convinced that an independent board would be committed to the applied sciences and resist the incursion of Dartmouth’s classical curriculum. President Smith and the Dartmouth trustees were less enthused. The fact that five trustees were to be selected by the state and four by Dartmouth would make controlling the direction of the new institution difficult; further, the income from new agricultural college enrollees would not flow to the Dartmouth treasury. Dartmouth officials decided that it was better to have some influence over the new college through the confederation arrangement than to allow an independent, state-supported college to grow within such close proximity. On April 7, 1868, Dartmouth and the New Hampshire College of Agriculture and Mechanical Arts signed a contract; defining how the two odd bedfellows would share professors, equipment, and buildings, and implement land-grant education in the granite state.

Justin Morrill’s home state of Vermont began with a plan reminiscent of Governor Andrews’ proposal for Massachusetts. In September of 1863, a bill in the legislature was passed to “incorporate the ‘Vermont State University and Associated Colleges.’” It called for the consolidation of the University of Vermont, Middlebury College, and Norwich College. John Sullivan Adams, head of the state education board, tried to convince the people of Vermont that a combined university could sit atop the common school system, elevating the standards of all

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68 Ibid., p. 11.
69 Ibid., 11.
70 Ibid., 13.
schools and increasing the value of education amongst all classes. When the trustees of Middlebury balked at the plan, however, the proposal disintegrated. In the following summer, Edwin Hammond, an exceptionally wealthy sheep farmer and breeder, rallied local agricultural societies with his public declamation in a Vermont newspaper that demanded a separate, independent agricultural college. Hammond was a major promoter of scientific agriculture, a leader in the state agricultural society and wool grower’s organization, and “the leading sheep breeder in his time . . . making more rapid strides in the in the improvement of Merino sheep than any breeder that had preceded him.” Soon after, Justin Morrill and Hammond supported a bill to create an independent agricultural and mechanical college. The new institution was chartered and awarded all of the land-grant funds, “provided that the trustees were able to raise at least $100,000 through public subscription within a year.”

Unlike in Massachusetts where the town of Amherst offered $75,000 to locate the school within its township, Vermont farmers were apathetic to the subscription campaign. The best offer was mustered from Morrill himself, who pledged $5000 if the college would be located in his hometown. Such generosity was far from sufficient, and with little interest in an agricultural college by farmers, the subscription campaign failed. Hal Barron notes that

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72 Ibid.
74 According the Federal Census of 1870, Hammond at age 70 had an estate worth $80,000 and $10,000 in personal assets.
78 Cary, The University of Massachusetts.
80 Julian I. Lindsay, Tradition Looks Forward: The University of Vermont: A History, 1791-1904 (Burlington, VT: The University of Vermont and State Agricultural College, 1954)
Vermont farmers were not especially “conservative and resistant to change,” as many in his study of Chelsea, Vermont attended agricultural society meetings and scientific lectures. The problem was that most Vermont farmers lacked the economic incentive that aroused passions in other states. Even though many rural townships in the state experienced depopulation rates up to fifty percent, Vermont’s demographic change was not accompanied by economic hardship. Vermont farmers had transitioned to wool production by the 1850s; a process that incorporated grazing land left behind by emigrants, and brought high profits when the Southern cotton crop was decimated by rebellion and war. Green Mountain residents chose to enjoy their profits, and consistently supported low taxes over college appropriations. With the option of an independent agricultural college no longer viable, the legislature turned to the University of Vermont. On November 9, 1865 the University of Vermont was made the state’s land-grant beneficiary under its new charter title – the University of Vermont and State Agricultural College.

The Rise of the Grange: 1873-1886

The Order of the Patrons of Husbandry or “The Grange” was organized in 1867 for farmers to address the economic and social challenges of rural life and agriculture. Membership grew slowly until the Banking Panic and international depression of 1873. Banks had overextended themselves in railroad speculation and western development projects that offered slow returns. As international markets plummeted, runs on banks with low liquidity led to bank failures and lost savings. Farmers turned to the Grange in this time of peril; membership

82 Ibid.
jumped from 200,000 in 1873 to a peak of 850,000 two years later at the height of the
depression. As the depression persisted, however, disappointed grangers left the organization in
droves (nearly 500,000 left the order). The order rebounded and stabilized by the 1880s, and
New England granges would enjoy five percent annual increases throughout the remainder of the
century.86

In the years before the grange, agricultural societies and state agricultural board officials
led the campaign against entrusting agricultural education to traditional colleges. But as
previously argued, they were centrally interested in advancing the cause of science and their own
place in the educational structure, not addressing the ills of the agricultural and industrial classes.
Historian Herman Eschenbacher described the agricultural societies as “part Franklinesque junto
and part political lobby,” whose membership included “principal agriculturalists, artisans, and
men of affairs . . .” These men joined with reformers like Morrill, White, and Gilman to initiate
something akin to a bourgeois revolution in higher education: displacing the literary aristocracy,
elevating studies useful to capitalist development, and promoting social mobility and new career
pathways as “officers of industry.”87 Conversely, the men and women that founded and joined
local granges were of modest or humble means, and held a common belief that class organization
was needed for economic and social security.88 Their class revolution was aimed at the new
bourgeois order. The de facto leadership of scientists and professional agriculturalists were

University of Maine Archives; Scott Gelber, Academic Populism: The People’s Revolt and Public Higher Education,
1880-1905 (PhD. Diss., Harvard University, 2008); D. Sven Nordin, Rich Harvest: A History of the Grange, 1867-1900
(Jackson: University of Mississippi Press, 1974).
87 Andrew Dickson White used the term “officers of industry” to describe those graduates who would enter the
ranks of white collar workers and skilled laborers. He stated that Cornell wanted to take the sons of mechanics and
farmers and send them back fitted to “be worthy leaders in the army of industry.” Andrew Dickson White to Henry
Barnard, Dec, 24, 1870. Division of Rare and Manuscript Collections, Cornell University Library. Andrew Dickson
White Papers. Box 9 mss.
88 Gelber, Academic Populism; D. Sven Nordin, Rich Harvest.
replaced by Grange Masters and Farm Journal Editors with a talent for populist rhetoric against the injustices of railroads, assemblies, banks, and land-grant colleges. Grangers criticized the Northeastern land-grant colleges for failing to improve farmers’ condition, with special emphasis on the continued outmigration of rural youth.\textsuperscript{89} The official position of the organization became that independent agricultural colleges were needed to realize the promise of agricultural education, and in the Northeast, that would mean reforming the original land-grant arrangements.\textsuperscript{90}

The Connecticut State Grange was reorganized in Hartford in 1885 after several years of ineffectual operation. The first order of business was a resolution in support of the recently founded Storrs Agricultural School (f. 1881) – a school founded by private bequest to teach practical farming.\textsuperscript{91} The grange membership stated that the Storrs school had successfully survived a four year probationary period and was now “an institution worthy of our patronage and protection.”\textsuperscript{92} The following year, the Connecticut Grange went further, calling for the removal of the land-grant from Yale and beginning what contemporaries called the “Storrs-Yale Controversy.” Grange Master Hale argued in his state report that farmers were not getting the full benefit of the land grant,

Why is this? What is the trouble? Examine the catalogue of Yale College and note the requirements for admission to this department. The applicant must have a thorough knowledge of Latin as a leading requirement . . . Beside arithmetic and algebra, an

\textsuperscript{89} For an example see Alpha Masser, “Testimony of Grange officials before the Vermont legislature,” Oct. 27, 1890. In Joseph L. Hills, “The State Grange Meeting,” unpublished manuscript, University of Vermont Archives.

\textsuperscript{90} For an excellent discussion of the National Grange’s opposition to land-grant colleges see Williams, The Origins of Federal Support, 92-93.


\textsuperscript{92} Cited in Walter Stemmons, Connecticut Agricultural College – A History (New Haven, CT: Tuttle, Morehouse, & Taylor, 1931), p. 64.
intimate acquaintance is necessary of geometry and trigonometry . . . How many farmers’ boys have the time to fit themselves for such an examination. . .

Hale also declared that admissions requirements left “99 out of 100” of farmers’ sons ineligible for state scholarships to the Sheffield School. The state grange report concluded with the rallying call that would define the remainder of the decade: “justice demanded” the removal of the federal land-grant from Yale.⁹⁴

There was much truth in the arguments of the Connecticut grangers. The records of the State Appointing Board – the entity charged with distributing scholarships – reveals that the board always had more scholarships available than applicants.⁹⁵ During the entirety of Yale’s life as a land-grant, they never denied an eligible student a scholarship.⁹⁶ As Hale alludes, the problem was eligibility, as the Sheffield School had the highest entrance requirements of any land-grant college in the region. Since there were only a few high schools in Connecticut (and they were located in the city), few rural youths had the means or opportunity to prepare for college admission.⁹⁷ In fairness to the Sheffield School, they had never promised to produce practicing farmers nor lower academic standards to increase access. Furthermore, the students from the industrial and agricultural classes that did gain access to Sheffield were more interested in becoming socially mobile in engineering careers or other scientific endeavors than returning to the field.⁹⁸

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⁹³ Ibid, p. 65.
⁹⁴ Ibid, p. 65.
⁹⁶ Ibid.
⁹⁸ Lord, Yale or Storrs.
Opposition to land-grant arrangements was also simmering in neighboring Rhode Island over the issue of student scholarships. The grange came late to Rhode Island (f. 1887), so during the 1870s and early 1880s, the gentlemen of the state agricultural society coupled their quest for scientific agriculture with the traditional granger concern of outmigration. The agriculturalists used society meetings to promote the idea that land-grant scholarships were being “applied to a mere classical education” not scientific agriculture,\(^9\) and informed farmers that half of the scholarships for the “agricultural classes” were going to residents of Providence (which had only fifteen farms in its borders). Scholarships were branded as political patronage for the benefit of urban professionals, and indicative, it was suggested, of the failure of Brown University to uphold the tenets of the Morrill Act.\(^10\)

President Robinson of Brown sensed the growing animosity amongst the agricultural population and decided to confront the concerns of Rhode Island farmers directly. He bluntly told a gathering of farmers that he agreed that there were real challenges facing the farmers of Rhode Island, but it could not be the responsibility of Brown University to solve them all. The fact that farm boys chose the classical course instead of agriculture was because “farm life was unpalatable to young people of the state,” he argued. Robinson agreed that the outmigration of rural youth to the city was a troubling development, yet he exclaimed that Brown University’s agricultural program could not curb this exodus on its own. Brown would make general science “agriculturally applicable,” provide cultivation methods that could increase yields and profits, and teach this science and theory of agriculture to those “whose saw merit in it.” He reiterated that the chief problem was that the boys coming to Brown under the auspices of the Morrill Act “did not want to choose farming as a profession.” These young men, he surmised, contrasted the

\(^9\) Eschenbacher, *The University of Rhode Island*, 10.
\(^10\) Ibid, 10-14.
farm with “imagined comforts of life in the city.” President Robinson was correct that few scholarship recipients chose the agricultural course and that the social and economic challenges facing farmers went well beyond Brown’s purview. However, farmers deeply held the belief that agricultural education was the cure for outmigration, and Dr. Robinson’s own testimony was recognition that Brown was exacerbating not solving the problem.101

The rise of the state grange in 1872 would threaten both the University of Vermont’s land-grant status and the political career of Justin Morrill. As in Rhode Island, some members of the state agricultural society attempted the coup that they were unable to achieve a few years earlier. Thomas Hoskins, the founder of the agricultural journal *Vermont Farmer*, joined with state agricultural board leader Zuar Jameson and University of Vermont chemistry professor Peter Collier to call for reforms at the University in 1874. Justin Morrill wrote to University of Vermont President Matthew Buckham that he sensed a more sinister plot: “Hoskins means mischief . . . He and his co-agitators will, if strong enough, make a raid of the college . . . and will try to create their own school.”102 The main instigator was Jameson, who used his position on the newly established state agricultural board (f.1870) to attract proto-grangers and politicize the board. Much to the chagrin of agricultural society types, Jameson was committed to unifying the agricultural board with the will of the grange. After pushing his activist agenda too far, Jameson and his allies were removed from the board in 1876. But the former board president would immediately take a leadership position with the state grange, and then be elected to the legislature in 1878. Here, his fight against the University would continue.103

101 Ibid, 15.
In the Vermont summer of 1878, Justin Morrill was facing the greatest challenge of his political life from Luke “Brass Buttons” Poland. Poland was no novice; he was a former U.S. senator and representative. Old “Brass Buttons” believed that Morrill had paid a political price from Jameson’s regular attacks on the University of Vermont, and he saw the election of 1878 as his way back into national politics. During a spirited campaign, he repeatedly claimed that the University of Vermont had not upheld its responsibilities to the agricultural class, had misused land-grant funds, and that Justin Morrill and his fellow trustees were in breach of trust. Poland was banking on the support of a network of fledgling granges and the lingering effects of the previous years’ agitation to carry him to victory over Justin Morrill.104 Poland’s political allies, including Jameson who was now the chairman of the agricultural committee, introduced a bill calling for an official investigation of the university by the state’s Supreme Court and the withholding of all funds until the completion of the inquiry.105 One legislator used the occasion to inform Vermont farmers that Morrill was not their friend; he brought gasps to the chamber when he declared that the results of Morrill’s trusteeship at the University of Vermont amounted to a “positive perversion” of the land-grant act.106

Poland proved to be his strongest challenger, but Justin Morrill had made many important friends during his career, and was able to outlast his opponent. Well aware that he did not have the votes in the legislature for either the investigation bill or to defeat Morrill107, Poland

104 Rozwenc, Agricultural Politics in Vermont, 64.
105 Sinclair, “Agricultural Education and Extension in Vermont,” 183; Lindsay, Tradition Looks Forward, 220-231. For the blow by blow politics of the Morrill-Poland campaign see Coy F. Cross, Justin Smith Morrill: Father of the Land-Grant Colleges (East Lansing: Michigan State University Press, 1999), 96-97, 100-105.
106 Cited in Searls. Two Vermonts: Geography and Identity.
107 Senators were indirectly elected by state legislatures in 1878.
withdrew his candidacy and ended his campaign to investigate the university.\textsuperscript{108} The events had brought the deficiencies in agricultural education at the University of Vermont to light, however. And while the Poland-Morrill contest was over, the state grange continued its criticism of the university – and it was open to critique. Of all the land-grant colleges in New England, Vermont remained closest to a pure classical college.\textsuperscript{109} Nearly ninety percent of full-time students were in the traditional A.B. degree program with most going on to the learned professions.\textsuperscript{110} The president was a Greek Scholar; the greatest concern was losing students to Middlebury, Harvard, or Dartmouth; there was little investment in sciences (pure or applied); and there had been nothing done in agriculture beyond hiring a chemist.\textsuperscript{111} The threat of investigation did prod the university to create the position of professor of agriculture – seventeen years after the university had established its agricultural department. In a second act of appeasement, the university asked the farmers of the state to “nominate a man who shall give his full time to scientific and practical agriculture as a specialty.”\textsuperscript{112} Within a year, W. W. Cooke was appointed the first professor of agriculture, but like in other states, the agricultural interests had been awakened to its political power and would soon demand more.

As Yale, Brown, and the University of Vermont faced mounting pressure, criticisms, and even formal investigations at the hands of the grange, the land-grant colleges in Maine and Massachusetts benefited. In Maine, a bleak economy in the years prior to the grange’s ascent resulted in decreasing levels of state support for the land-grant college. Appropriation bills that

\textsuperscript{108} Cross, Justin Smith Morrill, 105. See letter from Justin Morrill to Matthew Buckham, Oct. 12, 1878. University of Vermont Archives. Matthew Buckham Collection. Justin Morrill states that he had expected Polland to withdraw the bill, for he believed the “investigation was a sham by Poland that he never really cared about.”
\textsuperscript{109} See Catalogue of the University of Vermont, 1878. (Burlington, VT: Free Press, 1878); Annual Reports of the University of Vermont and State Agricultural College (Burlington, VT: Free Press, 1879).
\textsuperscript{110} Data obtained from the Catalogue of the University of Vermont, 1880. (Burlington, VT: Free Press, 1880).
\textsuperscript{111} Ibid.
\textsuperscript{112} Sinclair, “Agricultural Education and Extension in Vermont,” 184.
reached the house or senate floor would be cut substantially. David Smith, the historian of the University of Maine, argues that much of the opposition came from the Western part of the state – “prominent in these attacks were Bowdoin graduates still feeling the slight their college had received . . .‖¹¹³ Whatever the source of the opposition, the reality was that in 1878, the will for supporting the college was at such a low ebb that the legislature sought colleges to take over the institution. No proposals came. The trustees finally agreed to introduce tuition, allowing the Maine State College to temper its future requests from the state.¹¹⁴ It would be the rise of the Maine Grange in the 1880s that would rescue the college from its financial woes.

The Maine Grange’s advocacy for the college is at first blush paradoxical. In many ways, Maine’s land-grant college fit the bourgeois not the grange ideal: connecting science to industrial and national development and promoting social mobility into new middle class careers. It coexisted uneasily between the old classical aristocracy and the emerging class movement for practical education. By 1881, less than five percent of graduates had become practicing farmers, with most choosing careers in engineering, business, or teaching.¹¹⁵ The majority of graduates had professional or merchant fathers, and of the ten to fifteen percent that had farming fathers, 80 percent were at the top third nationally in property and assets (See Figures 3.1 & 3.2 in chapter 3, pp. 163-164).¹¹⁶ There were some noteworthy aspects, however, that did gain favor with regular farmers. The sons of humble origins were more likely to attend the Maine State College than in-

¹¹⁴ Ibid, 16.
¹¹⁵ Statistics of graduates’ occupation were compiled from listings in the *Catalogue of the Maine State College*, 1885-1886 (Augusta, ME: Sprague & Son, 1886). Retrieved from the University of Maine Archives.
¹¹⁶ Statistics of graduates’ class origins were compiled by cross-referencing the *Catalogue of the Maine State College*, 1885-1886 and the United States Federal Census of 1860 and 1880. The website Ancestry.com was used heavily to retrieve census data. The top quartile for United States farmers in 1870 was real estate values > $10, 626 and Personal Property > $3,456. This data and procedure for farmers’ income assessment was borrowed from J. Gregory Behle and William Edgar Maxwell, “The Social Origins of Students at the Illinois Industrial University, 1868-1894,” *The History of Higher Education Annual*, 18, 93-110.
state classical colleges or prestigious land-grant colleges like the Sheffield Scientific School.\textsuperscript{117}

This was thanks to rural student access to and preparation in Maine public high schools, admissions requirements that recommended but did not require Latin, modest tuition, and the tendency to give underprepared students an opportunity at the institution. Simon Crosby’s (class of 1872) story is indicative of this generosity,

\begin{quote}
I was poorly prepared for college . . . but was liberally allowed to make up [classes] during my Freshmen year . . . for if I had been refused admission at this time I believe I should never have had the advantages of a college education, and which changed my whole life.\textsuperscript{118}
\end{quote}

The institution had a model farm and student labor requirements, which signaled that even if it did not produce farmers it was for working people, not the idle, effeminate dilettantes of the professional class. The Maine State College also maintained two positions on the board of trustees for “practical farmers,” and the holders of these positions were grange members throughout the 1880s.\textsuperscript{119} What proved decisive in the end were not the specifics of land-grant compliance, but the ability of one man to translate the college’s efforts in a palatable way to the Maine Grange.

That man was Grange Master and Maine Governor Frederick “Farmer” Robbie. After becoming Maine’s chief executive, Robbie prodded the legislature to fund a state experiment station, and secured an annual appropriation for the Maine State College.\textsuperscript{120} “Farmer” Robbie, surprisingly enough, was not a farmer at all! Born into the professional class, he became a bank

\textsuperscript{117} Statistics of graduates’ class origins were compiled by cross-referencing the \textit{Catalogue of the Maine State College, 1885-1886} and the United States Federal Census of 1860 and 1880. Statistics on Sheffield students’ social origins were obtained in “Biographical record of the classes of ’79, ’80, ’81.” Sheffield Scientific School, Yale University Archives. Alumni Association Records.

\textsuperscript{118} Simon Crosby, “A Tribute to M. C. Fernald.” University of Maine Archives. President Fernald Collection.

\textsuperscript{119} Day, \textit{Grange Yesterdays}.

\textsuperscript{120} Smith, \textit{The First Century}.
president, railroad tycoon, Civil War officer, and career politician. He realized astutely that the grange was a nascent political force, and ingratiated himself to the agricultural classes by promoting his military service and his understanding of farmers’ issues. His understanding of populist sentiments made him governor, and the trust he gained from farmers helped convince the rural populace that Maine State College was their institution – “a People’s college.” Robbie’s speeches called upon farmers to lobby the legislature, “Maine is a college for the people and should receive popular support . . . the state should give it a liberal appropriation.” He argued Maine should follow in the footsteps of Michigan, which he extolled for making deep investments in their land-grant university. Although Maine’s curriculum and instruction were primarily theoretical and most graduates were non-farmers, Robbie highlighted those few instances of practical instruction occurring on the model farm and the handful of practicing farmers. One rhetorical example was Robbie’s regular and largely dubious assertion that the college primarily “affords an opportunity for a more thorough and practical education for those who intend farming or mechanics as a business.” Robbie’s efforts were highly successful; he secured funding that would place the college on a firm foundation for the remainder of the century. While neighboring land-grant recipients were fighting grange efforts to curtail funding and seize endowments, Maine’s college was reaping the benefits from the farmers’ rise to power.

122 Address of Governor Robbie to the Senate of Maine, 1883 (Augusta, ME: Sprague & Son, 1883), p. 43. Retrieved from the University of Maine Archives.
123 Ibid, p. 43.
125 Address of Governor Robbie to the Senate of Maine, 1885 (Augusta, ME: Sprague & Son, 1885), p. 32. Retrieved from the University of Maine Archives.
The 1870s were also difficult times for the Massachusetts Agricultural College, as it was attacked by both farmers and traditional academics. Academics accused the college of having low standards and farmers continued to be uneasy with the perceived “bookishness” of the college. The financial predicament at the college stemmed from the state’s depression conditions and the legislature’s position on funding. In a move to make the college self-supporting, the 1872 legislature raised the endowment to $350,000, discharged the college’s debt, and provided $50,000 for a new building, but required the college to increase four-year tuition to $1000. The cost was prohibitive to most students, and the college’s entering class of 1875 plummeted to an all-time low of twenty students. The lowly state of the school prompted several meetings on closing the college or as Lieutenant Governor John Long exclaimed, “Give it to Amherst . . . Give the Agricultural College to Amherst!” The college had survived an earlier attempt to be married to Harvard, but was once again defending its independent status. The arrival of the Massachusetts Grange and the rise of a new type of agricultural paper editor arrived in time to save the institution.

Massachusetts Governor Thomas Talbot held a legislative meeting in 1880 to finalize his plan for closing the college. According to the governor, the institution was not self-sustaining and its paucity of graduates did not justify continued financial support. The plan would meet a swift and organized response under the leadership of a man that would do more to reform land-grant education in New England than any other - Herbert Myrick, soon-to-be editor of the region’s largest agricultural journal *The New England Homestead*. Myrick was a new species of journal editor, quite different from Ezekiel Holmes. While interested in scientific agricultural – authoring books on turkeys, tobacco, and hops – Myrick’s main focus was organizing farmers for

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The promise of the Massachusetts Agricultural College for men like Myrick was the creation of strong leaders to advance the interests of the farming class. If the populist movement was going to offer economic and political alternatives to the capitalist system, it would need to elevate leaders from its own class and not rely on bankers and lawyers to advance their interests. The New England Homestead published numerous pieces calling on farmers to support and maintain the agricultural college. The editorial campaign helped excite the state grange which began pressuring the legislature. The effort resulted in a $10,000 annual appropriation for tuition scholarships and sharp increases in enrollment. The college’s historian Harold Cary notes that hereafter, “the government of Massachusetts had committed itself to public support of the Agricultural College . . . [and it] would not have to face another threat to bring the institution to an end.”

The New Hampshire experiment blended elements of both models that existed in New England: land-grant partnership with an existing college and an independent agricultural and mechanical college. As such, the grange had difficulty gauging whether the college at Hanover was friend or foe. The college embraced a liberal conception of land-grant education, thanks to the work of the institution’s first leader: Professor Ezekiel Dimond (appointed 1868). Like Evan Pugh of Pennsylvania but even less remembered, Dimond was a scholar educated in agricultural chemistry in Germany, committed to bringing Europe’s study of applied science across the

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129 When men like Myrick begin organizing farmers against the land-grant colleges, the Northeastern experience begins to resemble developments in the Midwestern context. See Gelber, Academic Populism.
130 Cary, The University of Massachusetts.
131 Ibid, p. 64.
Atlantic. He eschewed the term agricultural college, preferring the moniker “industrial college” as an expression of the college’s commitment to applied science and industrial utility. Dimond’s scientific commitments were well received by the agricultural society community, but it was his procurement of a model farm at personal expense that endeared him to the state grange. While ultimately compensated for the purchase, Dimond’s willingness to risk his own wealth for a college farm signaled to farmers that he and his institution were firmly committed agricultural class.

At only forty years of age, Dimond died from a brain tumor on January 6, 1876. The board of trustees soon realized how indebted they were to their first professor, for records revealed that Dimond had used much of his personal fortune to pay the college’s bills. In his brief career, the Middlebury graduate received a scientific education in Germany, taught collegiate courses to women at the Oread Institute, and served as the chief architect of New Hampshire’s land-grant institution. After his demise, the felicitous appointment of Jeremiah W. Sanborn as farm superintendent in 1876 maintained amicable relations between the college and the grange. Sanborn was reared on an old New Hampshire farm, educated in two academies and the new high school at Concord, and was a veteran of the Civil War. At age 26, he was made a member of the state agricultural board, a post that helped elevate his faculty position at Hanover. For seven years, Sanborn engaged in experiments on feeds, fertilizer, and breeding and gave many lectures on agriculture science and practice to students and the farming

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134 Dimond’s personal investment in the farm convinced local agricultural society leader John Conant of Dimond’s commitment to agriculture, and Conant made a financial commitment to compensate Dimond for the purchase. See ibid. 29-30.
135 Babcock, *History of the University of New Hampshire*, 47.
Relations with the grange were so cordial in 1879 that State Master Dudley Chase praised the New Hampshire college faculty and asserted “no parent and no young man need fear that the agricultural student will be degraded by his connection with the college.” As often was the case in New England’s land-grant history, New Hampshire’s college did not have the means to prevent Sanborn from being lured away to a more lucrative and prestigious position. He accepted the deanship of agriculture at Missouri College of Agriculture and Mechanical Arts in 1883 (A few years later he would become the first president of Utah’s land-grant college).

George H. Whitchler, one of Massachusetts Agricultural College’s first graduates (class of 1881), replaced Sanborn as farm superintendent and was named professor of agriculture in 1887. Whitchler proved quite capable as a scientist and continued his predecessor’s research agenda. But at such a young age and as an emigrant from Massachusetts, he lacked Sanborn’s political and personal connections within the New Hampshire farming community. That loss was acutely felt when the college came under fire in the 1880s for not producing enough practicing farmers. Between the years 1871 and 1884, 20 percent of graduates became practicing farmers compared to the 39 percent that pursued business (manufactures, management, clerks, retail, and merchants) and the 31 percent that entered the learned professions (physicians, educators, and clergy).

This disparity was introduced by grangers as proof that the men of culture and education at Dartmouth were exerting a bad influence on the student body. They argued that the lack of respect accorded to agricultural students was making farming youth

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137 Ibid., 226-227.  
138 Cited in Babcock, History of the University of New Hampshire, p. 60  
139 Metcalf, New Hampshire Agriculture, 227.  
140 Babcock, History of the University of New Hampshire, 54.  
141 These figures were presented in the Boston Journal in 1885. Babcock’s history confirms these numbers (p. 67). In Marilyn Tobias’ Old Dartmouth on Trial (New York, NY: University Press, 1982), p. 170 & 176, the author provides supporting evidence that only a modest percentage of graduates became farmers and more students came from Vermont then New Hampshire
question the value of the vocation. For as class of 1871 student C.A. Wilcomb states, “Putting ten country boys in more or less proximity to 300 regular college boys was not calculated to promote much enthusiasm among the 'bucolic' as we were called. Oh yes, we had another rather pungent appellation, 'dungists'.”

In 1885, a state grange committee called for severing ties with Dartmouth and moving the agricultural college out of Hanover, citing the following reasons for separation:

The college had not accomplished as much for agriculture as it could have . . . it would continue to be a small college overshadowed by its larger neighbor . . . The management of the college had been in the hands of men who had little interest in or knowledge of agriculture . . . [and] removal would enable the institution to develop freely to greater usefulness.

Between 1885 and 1887, the New Hampshire legislature conducted several public hearings and investigations, but found few reasons to change the land-grant arrangement. Legislators could find no grievous offences by Dartmouth that would justify the substantial financial outlays to found a new college.

The State Grange of New Jersey was founded in 1873, and while many farmers joined the order, its political activities were modest compared to compatriots in other states. The grange remained an important social organization for New Jersey farmers, but much of the political lobbying was done through specialty groups like the New Jersey Cranberry Association. Yet occasional grange critiques arose from time to time along the standard line: concerns about Rutgers’ admission requirements, the lack of practical instruction, and the dearth of graduates practicing farming. Professor George Cook, who had been central in securing the land-grant for

142 This quote was published in the University of New Hampshire Exhibit “Fields of Dreams: UNH in the Formative Years.” University of New Hampshire Online Archives.
143 Grange critique cited in Babcock, History of the University of New Hampshire, pp. 79-81.
Rutgers, defended his institution’s compliance with the Morrill Act. According to Rutgers historian Richard McCormick, Cook played the leading role in convincing state leaders that young men did not want to study practical farming. He argued that increases in higher education access for rural youth could not be achieved without the improvement of preparatory education, and the greatest service and profit to the state would come through agricultural research and extension. Critics were further mollified when Rutgers’ Board of Trustees made a liberal investment of $15,000 for a model farm and another $15,000 on applied science apparatus. Although few graduates of the Rutgers Scientific School would pursue farming, concerted efforts to disseminate useful agricultural research and a disinterested grange allowed Rutgers to trace its course relatively unabated.

The most public critique of Rutgers’ service to agriculture and the farming population came not from farmers but from President James McCosh of Princeton. McCosh had little interest in the plight or demands of farmers, for when he spoke before the National Education Association in 1873 to appraise the effectiveness of land-grant college’s agricultural programs it was aimed at self-interested ends. He pressed the interpretation of the land-grant act that pigeonholed the institutions as primarily agricultural. By framing the land-grant institutions as “agricultural colleges,” McCosh and allies like President Elliot of Harvard challenged the wisdom of directing federal funds to narrow ends. In his speech, McCosh borrowed grange

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145 McCormick, Rutgers: A Bicentennial History, 93.
146 Demarest, A History of Rutgers College, 411.
147 During the first fifteen years of the Rutgers’ Scientific School there were 99 graduates. 41 went into engineering, 24 in business, 25 in law, medicine, or teaching, and 6 became farmers. See McCormick, Rutgers: A Bicentennial History, 92.
rhetoric to argue that the agricultural colleges had few students enrolled in their programs and produced even fewer practicing farmers.\footnote{See Demarest, \textit{A History of Rutgers College}, 413.}

As Roger Williams has argued, it was in response to this attack that Rutgers professor George W. Atherton became a leading advocate for a broad-gauge view of the land-grant’s purpose.\footnote{Williams, \textit{The Origins of Federal Support}, 63.} While Atherton’s speech at the National Education Association targeted the conservative establishment of Princeton and Harvard, his arguments were equally a response to the grange position. Atherton declared that the term “agricultural college” was a misnomer, and it was contrary to their avowed purpose to evaluate them on “how many farmers they turned out.”\footnote{Ibid., p. 484.} These were not place of practical instruction, vocational training, or manual labor, but colleges . . . founded for the purpose of bringing good scientific and liberal education within the reach of the graduates of the public schools.\footnote{Ibid., p. 484.} The land-grant colleges, he argued, would promote access and mobility, would maintain a high intellectual grade by only admitting high school graduates, and would elevate the study of applied and useful science alongside the liberal arts.\footnote{Ibid., 484.} In defending Rutgers and its sister institutions, Atherton had articulated the key principles that separated the broad-gauge land-grant visions of Justin Morrill, Andrew Dickson White, and Daniel Coit Gilman from the narrow-gauge, practical vision of the grange.

When George Atherton assumed the presidency of Pennsylvania State College in 1882, he brought his ideas of a broad curriculum, high standards, and the union of science and application to the institution. Atherton secured tight links between agricultural research and
education, and his commitment to advancing knowledge in agricultural science and
disseminating it to farming communities proved to be the most effective response to grange
antagonists.\footnote{Dunaway, \textit{History of the Pennsylvania State College}, 111-120.} Atherton dismissed the practical training approach of his predecessors, and
proposed a curriculum that offered a foundation in the underlying disciplines of agriculture –
chemistry, zoology, botany, physical science, etc. Intent on returning to Evan Pugh’s vision,
Atherton was committed to making the college a true university, a bastion of scientific discovery
and liberal education.\footnote{Ibid., 118.} To implement his plans in agricultural science and outreach, Atherton
recruited nationally-respected scholar Henry Armsby from the Storrs School to head the state’s
experiment station.\footnote{Ibid., 135.} Soon research findings from the station were disseminated to the
agricultural population through summer programs and state exhibitions - pleasing farmers and
undercutting traditional grange criticisms.

\textbf{The Rise of Cornell University and the Farmers’ Critique}

In its first year as the land-grant college of New York (1863), People’s College showed
considerable progress, and it seemed plausible that the remote institution might actually meet the
steep contractual conditions set by the legislature. The construction of a building that could
house the required 250 students was underway and 114 students had enrolled in the college by
the second term.\footnote{Bell, “The College that Almost Was.”} The founder Charles Cook had been exceedingly generous; he donated at
least $100,000, a 200 acre farm, and promised further gifts from his estate for recruiting a
complete staff of ten faculty members.\footnote{True, \textit{A History of Agricultural Education}, 56.} According to local historians, when Charles Cook
suffered a stroke at the end of 1863, the fortunes of the People College took an abrupt turn. Cook
emerged from his illness uninterested in the plight of the college he founded, for after his brush with death, he began converting all his assets into cash and securities. He even put a lien against the college to recover a portion of the gifts he had already made. College leaders across New York watched the demise of People’s College with keen interest and jockeyed for position to become the state’s next land-grant college.

Nearly every legislator with a college in their district wanted the land-grant removed from the People’s College and placed in their home institution. In 1864, the matter was referred to the New York Senate’s Committee on Agriculture and the Committee on Literature (where educational matters were considered). The chairmen of the two committees were Ezra Cornell and Andrew Dickson White. Cornell had served as the head of the state agricultural board and after his election to the state senate in 1864 he was a natural choice to oversee agricultural legislation in the chamber. White, a Yale graduate and former University of Michigan professor, was nearly thirty years the junior of his Republican colleague when he was elected as a senator that same year. White recalls meeting his colleague whose name would be forever affixed with his own: “He was then about sixty years of age, tall, spare, and austere, with a kindly eye, saying little, and that little dryly. He did not appear unamiable, but there seemed in him a little aloofness . . . this was Ezra Cornell.”

Ezra Cornell’s initial inclination was to divide the fund between several institutions. He supported a bill that came before his committee to distribute the land-grant equally between the

158 Bell, “The College that Almost Was.”  
159 Ross, Democracy’s College, 76-78.  
160 White, Autobiography, 300.  
161 Becker, Founders and the Founding, 90-110.  
162 Ibid., 90-110.  
163 White, Autobiography, p. 102.
New York Agricultural College at Ovid and the People’s College. The legislation was referred to the Committee on Literature. White was opposed to diminishing the impact of the land-grant fund by splitting it between institutions, and further, he was convinced that the People’s College would most certainly close. The financial situation at the New York Agricultural College was equally desperate and White’s refusal to report the bill out of committee appeared to end hope that the doors at Ovid would reopen. Then at a summer meeting of the New York Agricultural College board, the situated was radically altered when Ezra Cornell proposed an incredible solution,

If you locate the [New York Agricultural] college in Ithaca, I will give you for that object a farm of three hundred acres of first quality land desirably located . . . I will also erect suitable buildings for the use of the college, and give an additional three hundred thousand dollars . . .

The only condition was the legislature had to appropriate a portion of the land-grant to the college, “and thus place the college upon a firm and substantial basis.”

Andrew Dickson White, for his part, maintained his refusal to split the grant, but suggested to Cornell that he would fully support a bill to give the entirety of the Morrill funds to such a venture. This began the Cornell-White collaboration. The dream of creating an American research university in the European tradition had developed in White’s mind during his studies in France and Germany and during his faculty tenure at the University of Michigan. This influence that White had in escalating Ezra Cornell’s vision is revealed in one of Cornell’s letters: “The

164 Bishop, A History of Cornell, 60.
165 Ibid., 60.
166 Ibid., 60-61.
167 Andrew Dickson White, Autobiography.
168 Ibid.
enterprise expands from an Agricultural College to a university of the first magnitude – such as we have to go to Europe to find . . . we can make Ithaca the seat of learning in America."

In February of 1865, White proposed a bill to establish Cornell University (White suggested naming the institution after its generous benefactor) and “to appropriate to it all the income of the sale of public lands granted to the State.” The university’s scope was to be comprehensive – instruction in the arts, literature, agriculture, mechanical arts, and “all knowledge.” The bill stipulated that Cornell University would distribute 128 free scholarships annually, one from each Assembly district in the state. The proposed “university of the first magnitude” was to have no religious affiliation, and students of all backgrounds were to be welcomed.

Supporters of the People’s College, the New York Agricultural College, and every other institution hoping to rise to land-grant status fervently opposed the measure. The lawyer for the People’s College argued that Ezra Cornell was a monopolist attempting to control all higher education in New York. The religious press, advocates of state support for their own church-related colleges, attacked the non-sectarianism of what they coined “the godless university.” The opposition charged that the agricultural and industrial classes would be left out of Cornell’s “aristocratic” university. A few days after the bill of incorporation was presented, the lawyer for

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170 An Act to establish the Cornell University, and to appropriate to it the income of the sale of public lands granted to this State by Congress, on the second day of July, eighteen hundred and sixty two. Passed April 27, 1865. Republished in Becker, Founders and Founding, 162-167.
171 Cited in Bishop, A History of Cornell, p. 64.
172 Ibid.
174 Ibid.
175 Ibid., p. 67.
the People’s College argued that it was the intention of Cornell and White’s to “rob the state,” and erect an institution for professionals, idlers, and aristocrats. Such demagoguery won the People’s College a stay of execution, and it was given three months to comply with terms of Morrill Act or the grant would be removed. When the time elapsed, however, the People’s College had advanced no further and its land-grant days were at an end.\footnote{Proceedings of the State Senate Hearing, Cited in Bishop, A History of Cornell, p. 67.}

Andrew Dickson White, full of youthful energy and dreams of creating great centers of knowledge, focused on using the land-grant funds and Cornell’s endowment to “found and build a worthy American university.” Three years prior to the founding of Cornell, White penned a letter to his friend Gerrit Smith and mused about grand ideas forming in his mind. He contended that even amongst the darkness and uncertainty of war, America is in need of “a true liberal university in Western New York.” This university would offer prized instruction to all people of all races, restrain the “merchant morality” sweeping the nation, and temper passions for war and conquest. His university would include a school of literature, “an asylum for science,” and instruction in history, law, metaphysics, history, political economy, and the classics. Libraries, laboratories, and observatories would be “splendidly endowed,” and he would bring together “liberally-minded men of learning . . . [where they] could cluster.” Unlike the feeble denominational colleges, White argued, this great university would support pure science and give it a stronghold by placing men like “Agassiz and the young men whom he is training.” White’s university would be a sanctuary for scholars and gifted students to explore and expand upon the

\footnote{True, History of Agricultural Education, 173.}
growing body of knowledge permeating human society. The serendipitous arrival of Ezra Cornell’s philanthropy could now make White’s once farfetched dreams a reality.  

Andrew Dickson White was selected to be the first president of Cornell, but it was soon apparent that he and the founder held different educational philosophies. White’s desire to implement high standards for the incoming class was tempered by the founder’s call that at Cornell University “every person can find opportunity.” It was not uncommon for Ezra Cornell to personally intervene in admissions decisions in the early years on behalf of boys deemed educationally unqualified. A compromise was reached by admitting students in two tracks at different levels of preparation. Provisional students would be required to take remedial courses before being fully accepted into the University.

White of course could not go against the wishes of the financial benefactor, and the university had to strike an uneasy balance between the two missions of the college – access for a broad clientele and curricula of a high intellectual grade. The Plan for Organization, written by White states that this coexistence made “the educational problem double,” as the college needed to offer special programs in industrial arts and agriculture alongside and equal to the traditional departments. For White, the applied science departments would coexist seamlessly with the rest of the curricula if these programs were based on basic science and firm theoretical foundations. Cornell, however, always believed that practical education would be part of his institution’s offerings. Contrary to White’s wishes, Cornell demanded that a shoe factory be built on campus for students to both learn practical skills and the value of hard labor. In the early

181 Ibid.
years, Cornell would visit the industrial arts building like a caring father to observe students learning to operate a new machine he purchased. This uneasy tension between the visions of the president and of the founder would persist throughout Cornell’s first decade.183

Ezra Cornell’s support for practical, manual education and his humble, agricultural background did not prevent a strained relationship from developing between New York farmers and the university. The source of this discord was competing views on what role land-grant colleges should play in promoting class mobility. To understand how his educational outlook differed from farmers, it is instructive to explore the life of Ezra Cornell.

Ezra Cornell’s biography is the classic narrative of social class mobility that pervaded American society at mid-century, and his experience with this changing economic order helps explain his land-grant education ideas. Through a journey from child poverty to telegraph tycoon, Ezra Cornell gained beliefs about education that would color his plans for Cornell University. Evidenced from his own life, he saw endless opportunity in the emerging industrial order for those that could harness the skills to invent, implement, and manage profitable technologies. Education could provide those skills to children of any background, who like him, was willing to expend the effort.

As a child of humble means, Ezra Cornell moved with his family from town to town as his father (Elijah) looked for work. After moving from New England to New York, Elijah Cornell secured employment on a farm and taught in a district school where Ezra received a basic education. According to historian Carl Becker, the “essential quality” of Ezra Cornell’s intelligence was “manipulating material things and mastering practical affairs,” an ability that

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was apparent at a young age.\textsuperscript{184} He was already an accomplished carpenter at the age of sixteen, was hired to repair machinery at a plaster and flour mill five years later, and soon was placed in charge of the entire enterprise at an annual salary of $350.\textsuperscript{185}

The Panic of 1837 claimed the mill and his job, but Cornell had spent a portion of his earnings to buy the patent rights on a new plow that he was soon peddling in Georgia and Maine. While in Maine, he had a fortuitous meeting with an associate of S. F. B. Morse, who was searching for a machine to expedite the underground installation of telegraph cables. Cornell was recruited to build a prototype. The machine was a success, but was mooted when the underground wire technology faltered. Undeterred, Cornell devised the plan to string telegraph wires on polls. He was rewarded with contracts to build several lines in subsequent years, and after one project netted $6000, Cornell was ready to join the capitalist ranks. His investments in the overcrowded telegraph industry went so badly though, that by 1854, he amassed $50,000 in debts and was forced to merge his telegraph lines into the new Western Telegraph Company. He received stock shares valued below his debt load and returned to his home in New York to enter politics and collect modest dividends from Western Union. Fortunately by 1860, the dividend was paying $15,000 a year and his debt was erased. By 1864, his investment returns surpassed the incredible annual sum of $150,000. The poor boy with a knack for manipulating machines and inventing gadgets was now a millionaire preparing for his final act as philanthropist.\textsuperscript{186}

Mark Twain wrote that the “all-pervading speculativeness” of the Gilded Age was good and bad for the individual and the nation. “Good, because it allows neither to stand still . . . toward some point or other which is ahead . . . Bad, because the chosen point is often badly

\textsuperscript{184} Becker, \textit{Founders and the Founding}, p. 46.
\textsuperscript{185} Ibid., 46-47.
\textsuperscript{186} Bishop, \textit{A History of Cornell}, 43-61.
chosen, and then the individual is wrecked; the aggregation of such cases . . . is bad for the
nation.” 187 Without the lucky resolution of his telegraph speculation, Ezra Cornell would have
been but another wrecked individual of the age. Yet, his aversion to settling down on a career
and his knack for jumping at the next economic opportunity was an ideology that positioned him
to reap his fortune and illustrates the risky game of social mobility that defined the era. It would
be this ideology that would frame his understanding of the purposes of land-grant education and
his vision for Cornell University.

One would expect that with his family farm background, his service on the state
agricultural board, and his advocacy for poor college youths would have endeared Ezra Cornell
and his university to the New York farm population. This was not the case for important reasons.
First, the embittered coalitions that had supported the People’s College and the New York
Agricultural College propagated the charge that the land-grant had been stolen from the people
for the self-interest and economic gain of Ezra Cornell.188 Second, Ezra Cornell’s commitment to
secular higher education and his Quaker religion and tendencies towards deism fueled ongoing
criticism from religious leaders who hoped that land-grant funds would be dispersed to
denominational colleges.189 Third and most infuriating to Ezra Cornell was the charge that he
had founded an “aristocratic” university.190

As stated above, the aristocracy critique began at the outset, as People’s College
supporters declared that the wealthy benefactor was designing a university for the sons of the

Bledstein, Culture of professionalism: The middle class and the development of higher education in America (New
188 Andrew Dickson White, Autobiography, 320-321; Becker, Founders and the Founding, 100; Bishop, A History of
Cornell, 66-67. The main charges were made by the lawyer of People’s College founder Charles Cook, who claimed
Cornell’s plan was a “selfish scheme” to “erect a monument to himself.”
189 On Cornell’s religious views see Bishop, A History of Cornell, 26-27.
190 Becker, Founders and Founding, 101.
rich and the professional class and perverting the land-grant mission. Farmers echoed this charge, claiming that the new university would instill “haughty notions,” idleness, and the effeminate culture of the upper classes.\textsuperscript{191} This deeply affected Cornell, and he wrote several letters describing his working-class lineage and farming roots, referring to himself as a “mechanic and farmer . . . [whose] wealth [was] the legitimate fruit of those pursuits.”\textsuperscript{192} He noted that the university had three mechanics and three farmers on its board of trustees, as well as a farm and workshop to support poor students. Andrew Dickson White said the following of the whole affair:

At the time when these attacks were at their worst, he was giving especial thought to the problem of bringing education at the university within reach of young men with good ability and small means. I am quite within bounds in saying he gave an hour of thought upon this for every minute he gave to thought upon the attacks of his enemies.\textsuperscript{193}

The notion that Cornell’s interests were geared towards the moneyed, upper-class at the expense of the workers was erroneous, for he found the idle, old-money aristocracy equally odious. Cornell did not want an aristocratic university for cultural refinement and the learned professions, but a bourgeois institution built for the new economy. His central object was nurturing socio-economic mobility, giving the children of farmers and workers gained access to useful knowledge that could propel advance in emerging industries. Thus the motto, “I would found an institution where any person can find instruction in any study.” But as the grange emerged as a force in 1873, farmers warned that this curricular breadth would expedite the outmigration of students from the farm and further punish the agricultural class and rural communities. Typical was the statement in the \textit{American Agriculturalist},

\begin{footnotes}
\footnote{Ibid.}
\footnote{“Ezra Cornell’s Defense Against the Charge of Being the Founder of an ‘Aristocratic’ University, 1865,” In Becker, \textit{Founders and Founding}, pp. 168-170.}
\footnote{White, \textit{Autobiography}, p. 323.}
\end{footnotes}
The abiding conviction of the farmer is that education beyond the rudiments is a dangerous thing for the farmer’s son, and if he attempts to master the science of the calling, he is pretty sure to have a call to some other calling soon after opening his books.\textsuperscript{194}

Farm journal editors declared that land-grant colleges should focus on practical instruction in farming, and warned that other subjects would dwarf the study of agriculture and entice children away from the farm.\textsuperscript{195}

The death of Ezra Cornell in 1874 marked the end of the university’s commitments to manual training, required labor, and modest admissions standards. President Andrew Dickson White articulated the direction Cornell University was destined to take from hereafter:

The place for elementary instruction, he said, is the farm, as that for the mechanic trades is the workshop. The duty of the college is to investigate the processes, to distinguish facts from fallacies, to examine the theory and practice of plows and plowing, of the enrichment of soils, of the drainage of lands . . . of the breeding of animals, and so forth.\textsuperscript{196}

The founder had held some educational beliefs that were compatible with the granger vision of agricultural education, and he had served as a check upon White’s ambitions to elevate Cornell to the standards of the great European universities. President White wanted to replace all vestiges of practical, industrial training with the study of science at a high-intellectual level. With the passing of the founder, the student factory and the mandatory labor requirements were both eliminated. No more public claims were made that the poorest could work their way through college, and in fact, tuition was raised to fund the expanding academic program. Little investment was made in agricultural education, and the sorry condition of the model farm became the focus of grange criticism.

\textsuperscript{194} \textit{American Agriculturist}, (August 1867): 279.
\textsuperscript{196} Cited in Bishop, \textit{A History of Cornell}, p. 88.
In 1874, a delegation of farmers visiting the campus farm observed the “bedraggled state [of the farm buildings], scared away the rats and dead chickens, and spat . . .” They returned home and wrote the state’s agricultural paper, *The New York Cultivator*, that the university was contravening the provisions of the Morrill Act.¹⁹⁷ The state grange lamented that only seven students were registered for the agricultural program and fewer and fewer farmers’ sons were enrolling in the college. In fact, the numbers taking the agricultural course had been in steady decline from the first year (1869), when 30 out of 412 students were registered in agriculture. *The Cornell Era* described the agricultural students of the first classes as “city boys who know nothing of farming and have romantic notions of what can be accomplished in farming.”¹⁹⁸ By 1878, there was only one graduate that declared an interest in pursuing agriculture (and he would become a veterinarian¹⁹⁹) compared to twenty-two in engineering, eleven in business and manufacturing, and eighteen in the learned professions of law, teaching, and medicine.²⁰⁰ A letter from the university’s Vice-President Russell to Andrew Dickson White in 1870 warned of the serious problems in agricultural education: “thistles unharvested, hay laying in the field, cows running dry, no manure because no animals, no vegetables . . . For Heaven’s sake let us do something.”²⁰¹

Unlike land-grant institutions of modest means, Cornell University’s financial resources allowed it to address internal challenges without subjecting itself to the public scrutiny and governmental inquiries that often accompanied funding requests before state legislatures. The investment in agricultural education that turned the tide was securing Isaac P. Roberts in 1874

¹⁹⁸ *Cornell Era*, Nov. 10, 1869, p. 67.
¹⁹⁹ Myron Cassius Kasson would be Cornell’s first recipient of the advanced degree in veterinary science in 1871.
²⁰⁰ “Statistics of the Class of 1878.” Division of Rare and Manuscript Collections, Cornell University Library.
²⁰¹ Vice-President Russell to Andrew Dickson White, July 28, 1870, Andrew Dickson White Papers, Rare and Manuscript Collections, Cornell University Library. Box 9 mss.
from Iowa State College where he was director of the model farm and professor of agriculture.\textsuperscript{202} While New Hampshire and Maine were losing promising academic talent to Midwestern land-grant colleges,\textsuperscript{203} Cornell was able to recruit faculty back to the Northeast. Roberts arrived on campus and encountered an agricultural program in disarray – the cows would not milk, one work oxen had to hold up the other, and a prized Arabian Stallion worth $15,000 fell dead the first time he was taken from the stall.\textsuperscript{204} The new professor, who would come to be called the “father of agricultural science in America,” sent an ultimatum to the board of trustees – “I will resign unless money would be immediately provided to rehabilitate the farm.” Roberts’ message also signaled his vision for the future: “determine[d] to lay the foundation of a College of Agriculture such has never before been conceived.”\textsuperscript{205} Roberts’s demands led to a liberal appropriation to his department and improvements were made – a herd of healthy cattle were purchased, fields were cultivated, and a new barn was erected in 1880.\textsuperscript{206}

Relations between Cornell and the New York Grange improved markedly as Isaac Roberts gained the trust from farmers. In his autobiography, Andrew Dickson White claims that Roberts task was made difficult thanks to the failed efforts of the previous agricultural professor, Henry McCandless, who did much to sour New York farmers’ view of the institution.\textsuperscript{207} He was a young graduate of an Irish university who promised to create a scientific farm in Ithaca based on British techniques, but was remembered by White as “walking over the farm in a dilettantish

\textsuperscript{202} White, \textit{Autobiography}, 369-370.
\textsuperscript{203} In New Hampshire, the lost its talented agricultural professor Jeremiah Sanborn to Missouri, and Maine lost a nationally recognized engineering scholar to Michigan. See Babcock, \textit{History of the University of New Hampshire}, 54.
\textsuperscript{205} This letter is reprinted in Bishop, \textit{A History of Cornell}, p. 159.
\textsuperscript{206} Ibid.
\textsuperscript{207} Roberts, \textit{Autobiography of a Farm Boy}, 179-181, Colman, \textit{Agriculture and Education}, 53-54.
way, superintending operations in white gloves, and never touching any implements . . .”\textsuperscript{208} The Scottish implements that McCandless brought from Europe and his aversion to cultivating New York staples like corn and pumpkins made Cornell’s model farm foreign and disconnected from the needs and interests of New York farmers. But Roberts did not have such a high-brow pedigree; he was born and raised on a farm and had the appearance and mannerisms of the “plain people off the western prairies.”\textsuperscript{209} Upon arriving at Cornell, Roberts felt that his class background contributed to “a sort of social neglect” at the hands of “the classically educated members of the Cornell faculty . . .”\textsuperscript{210} Yet, it would be his humble origins, simpler ways, and expression of working class masculinity that would close the schism between the farmers and Cornell.

In 1877 at the second annual meeting of the New York State Grange, a resolution was presented that charged Cornell University with failing its land-grant mission by subordinating agriculture to other studies. A protégé of Roberts was a delegate at the convention and stood to defend his mentor and Cornell’s agricultural program. The young man demanded that the grangers visit Cornell before passing judgment to which the resolution’s sponsors agreed. A grange delegation came to campus and was duly impressed with Roberts and the improvements he made.\textsuperscript{211}

\textsuperscript{208} White, \textit{Autobiography}, p. 368.
\textsuperscript{209} Roberts, \textit{Autobiography of a Farm Boy}.
\textsuperscript{210} Ibid., p. 177.
\textsuperscript{211} The story of the grange meeting and delegation visit was first told in White, \textit{Autobiography}, 370.
Roberts traveled throughout New York to meet with local granges, confronting critics directly, and explaining how discoveries at Cornell could improve the lot of farmers.\textsuperscript{212} His efforts were so successful that one of original sponsors of the grange resolution stated:

I am glad to confess that I discovered that my prejudices were entirely unfounded, and that Cornell was prepared to accomplish wonders for agriculture, and that she needed more than anything else the cooperation of farmers.\textsuperscript{213}

That support was evident in 1877 when the state grange called upon the legislature to support the creation of an agricultural experiment station to be “unit[ed] with the agricultural department of Cornell University.”\textsuperscript{214}

The improved relations with farmers brought a steady increase in enrollment in the agricultural program.\textsuperscript{215} Hundreds of part-time students participated in short courses and summer courses in agriculture, and those pursuing the bachelor of agriculture increased six fold throughout the 1870s. While many land-grant recipients in the Northeast were vulnerable to legislative interference at the height of agrarian political power, Cornell University was able to strengthen its agricultural program and reap some benefits from the rise of the grange. Isaac Roberts mended relationships with state grange officials, while defending the importance of scientific agriculture. The hiring of Roberts’ protégé Liberty Hyde Bailey in 1888 would bring the nation’s leading agriculture educator to Ithaca, where he spearheaded efforts to standardize

\textsuperscript{212} Roberts discusses in his autobiography several meetings with granges and individual farmers across the state.
\textsuperscript{213} Cited in \textit{Proceedings of the New York State Grange}, 1875, p. 70.
\textsuperscript{214} Cited in Coleman, \textit{Agriculture and Education}, p. 77.
extension and outreach in New York, and created the model of agricultural education that was emulated by institutions throughout the region and beyond.\textsuperscript{216}

**Raising the Stakes: 1887-1894**

The rise of the state granges marked the beginning of an organized effort to remove the land-grant from its original recipients, but it was the promise of additional federal funds from the Hatch Act and the Second Morrill Act that intensified the effort. The Hatch Act of 1887 provided $15,000 to establish agricultural experiment stations under the direction of the “colleges or agricultural department of colleges in each State or Territory.”\textsuperscript{217} The New England state granges refused to concede that Hatch Act funds should go to original land-grant recipients that had not fulfilled their responsibilities under the terms of the act. Grangers in Rhode Island and Connecticut sensed a political opportunity to advance their agenda to separate the land-grant funds from Brown and the Sheffield Scientific School. A month after the passage of the Hatch Act, Senator Charles Peckham created a committee to investigate Brown’s fulfillment of its land-grant responsibilities before any Hatch Act funds were released. The Committee worked for over a year, meeting with the state grange and Brown representatives, before offering its recommendation on the distribution of Hatch Act funds. This year-long hiatus would provide time for the agricultural interests to muster their forces.\textsuperscript{218}

On August 20, 1887, a Farmers’ Field Day was held in Oakland Beech, Rhode Island under the joint sponsorship of the Connecticut, Massachusetts, and Rhode Island Granges.


\textsuperscript{218} Eschenbacher, *The University of Rhode Island*, 17.
Herbert Myriak energized a crowd of 1100 farmers with his fiery rhetoric on the failure of Brown’s agricultural department and urged them “to see that they got the most practical benefit from the Hatch Act money.” To the jubilation of those gathered, the chairman of the conference shared a letter from Senator Peckham that revealed the investigating committee was prepared to recommending an independent agricultural college for Rhode Island. The participants passed a resolution which would become its manifesto on the question of agricultural education. The full resolution was distributed across the state by the New England Homestead as a pamphlet entitled “The Farmer Speaks Out.” The farmers resolved the following: “We unreservedly oppose the establishment of the proposed [Hatch Act] experiment station in connection with Brown University . . .”

President Robinson of Brown University grew concerned after the release of the “Farmer Speaks Out” pamphlet, and defended his institution before the investigating committee. He began by reminding the committee that if Brown had not accepted the land-grant fund in 1863, it would have been lost to the people of Rhode Island. The president tried to draw conservative legislators to his side, arguing that if the Hatch funds did not reside with Brown, the state would need a new agriculture college – “a more expensive endeavor than people realized.” The audience was not filled with Brown supporters, however, and soon farmers ridiculed the president’s defense. One farmer derided the agricultural course and the lack of scholarships being awarded to farmers’ sons. Another exclaimed that what Brown wanted from the Hatch Act funds was “a laboratory, more beneficial to the professors than to the students.” Charles Flagg, the elder statesman of the agricultural board, summarized the dominant position in the room by

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219 Rhode Island Country Journal, August 26, 1887.
220 See Eschenbacher, The University of Rhode Island, 17 – 20; “The Farmer Speaks Out” (Handbill). For a detailed assessment of the Oakland Beach meeting see chapter 4.
quoting the Oakland Beech manifesto: “we want an [independent] agricultural school with the experiment station attached.”

The investigating committee issued its report on March 15, 1888, stating “no one not associated with Brown favored giving the Hatch money to the University.” The report concluded that the land-grant funds “had been diverted to uses other than those originally intended,” and called for the creation of an independent agricultural college. The new agricultural college and the agricultural experiment station were to be located in the rural town of Kingston, and the legislature appropriated $50,000 for construction and $10,000 annually for expenses. The state was now in the strange position of providing Hatch Act funds and state support to the Kingston school, while the federal land-grant funds still resided at Brown, but the grange would move quickly to address the irregularity. The Rhode Island Grange, and its allies on the Kingston School’s Board of Managers, began a campaign to secure the original land-grant by criticizing the scholarship beneficiaries and Brown’s hapless agricultural curriculum. Members of the Kingston board published a report that claimed between 1882 and 1888, 77 percent of the land-grant scholarship recipients were from cities, 66 percent from Providence itself. They noted that the only required course in the agricultural curriculum was zoology, and no evidence could be found of any Brown graduate that became a practicing farmer. The pages of Rhode Island newspapers were filled with letters and articles critical of Brown and its “so-called” agricultural program.

222 Ibid.
224 Ibid.
225 Eschenbacher, The University of Rhode Island, 23.
The newly elected president, Elijah Andrews, realized the land-grant endowment was not worth Brown’s public debasement. The interest from Rhode-Island’s land-grant endowment was quite insignificant, and it was a constant distraction to President Andrews’ private fundraising campaign. Andrews wanted to use the largess of private wealth to transform Brown from a provincial classical college to a modern university of the bourgeois ideal. Brown stood content to relinquish the original land-grant funds to Kingston, and hope for an amicable coexistence. In the summer of 1890, President Andrews wrote the governor to convey his intentions, and both institutions awaited the return of the legislature to finalize the change.\footnote{Bronson, \textit{The History of Brown University.}}

When the legislature finally returned to session in January of 1891, the situation was dramatically altered. Changes of heart followed the passage of the second Morrill Act which promised an annual appropriation of $15,000 (raised by $1,000 each subsequent year to a maximum of $25,000) for “the more complete endowment and support of colleges for the benefit of agriculture and the mechanic arts established under the provisions of an act of Congress approved July 2, 1862.”\footnote{\textit{Second Morrill Act of 1890. Act of August 30, 1890, ch. 841, 26 Stat. 417, 7 U.S.C. 322 et seq. Retrieved from http://www.csrees.usda.gov/about/offices/legis/secondmorrill.html.}} Andrews rescinded his offer of rapprochement. The Brown fundraising campaign was not progressing well, and the president and trustees believed an injection of federal funds could resuscitate the plan to transform Brown into a modern university.\footnote{\textit{Ibid.}}

Charles Flagg, now the chairman of the Board of Managers of the Kingston School, and Thomas Hazard of the state grange led the effort to block Brown from securing the funds from the second Morrill Act.\footnote{\textit{See Providence Journal, April 17, 1891.}} In the face of a united agricultural lobby, the Kingston school was
given a new charter and renamed the Rhode Island College of Agriculture and Mechanical Arts on May 28, 1892. The bill of incorporation ordered the accumulated and future proceeds of the second Morrill Act given to the new institution.\textsuperscript{231} Brown lost an appeal to the state supreme court and took its case to the United State Supreme Court in June of 1893. By 1894, Brown officials had weighed the costs of awaiting the Supreme Court ruling, both to its finances and public standing, and sought a compromise. Brown University would return the original land-grant funds of $50,000 if they were compensated $40,000 for the costs incurred over twenty years. The state agreed, and after trading checks on May 14, 1894, connections were formally severed.\textsuperscript{232}

In Connecticut, Grange Master J.H. Hale continued to call for the transfer of the land-grant funds to the Storrs Agricultural School as “the means to be taken to secure an education especially adapted to the agricultural classes.”\textsuperscript{233} He faulted the Sheffield Scientific School’s high admissions standards, the fact that only eight students had ever enrolled in the agricultural department, and that not a single graduate became a practicing farmer over thirty years. Sheffield faculty responded forcefully: “It was not [the purpose of the Morrill Act] to teach the details of agricultural practice, or the process employed in the manufacture . . . things of this kind can be learned far better on the farm and in the workshop.” Instead, the mission was “to promote the liberal and practical education of the industrial classes in the several pursuits of life.”\textsuperscript{234}

The Connecticut grangers rallied behind a 1892 National Grange report that claimed “none of the agricultural colleges which is connected with a classical institution has been

\textsuperscript{231} Eschenbacher, \textit{The University of Rhode Island}, 51.  
\textsuperscript{232} Bronson, \textit{The History of Brown University}.  
\textsuperscript{233} Cited in Chittenden, \textit{History of the Sheffield Scientific School}, p. 229.  
\textsuperscript{234} Ibid., 230.
successful in imparting agricultural education and a portion of them have been dismal failures, [while] the independent agricultural and mechanical college are, without exception, eminently successful.”

In March of 1893, the Standing Committee on Agriculture began to consider a bill to make the Storrs School an agricultural college, making it eligible to receive the federal land-grant funds. Yale representatives testifying before the committee highlighted its “binding contract” with the state, and argued that it had completely fulfilled its terms. Timothy Dwight, the president of Yale, argued that his institution provided professors in agriculture, botany, and horticulture, provided free scholarships to students, and had faithfully performed its duties to the industrial classes and to the state.

When the Connecticut General Assembly began debate on March 29, 1893, the Hartford Courier reported that legislators in favor of Storrs were in the majority four to one. State Grange Master Hale was a senator and also the legislative chairman of Agriculture Committee and led the debate with his usual criticism and a hopeful idealism for an independent agricultural college. Connecticut farmers were at the height of their political power, and on April 13th and 21st, the state’s two legislative bodies passed bills re-chartering the Storrs Agricultural College and conferred upon it all land-grant funds. The bill authorized the state treasurer to distribute “all money received from the United States for educational purposes” to the Storrs Agricultural College. Storrs now was in possession of all the proceeds from the 1862 and 1890 Morrill Act as well as the Hatch Act funds. The bill allowed Yale to seek damages, which a state commission

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235 Cited in Stemmons, Connecticut Agricultural College, 68.
236 Ibid, 70-72.
determined to be $154,604. In 1896, the State of Connecticut began paying the stipulated damages to Yale, and the Sheffield Scientific School was a land-grant college no more.\textsuperscript{237}

While the presidents of Brown and Yale gave earnest effort to defend their colleges and retain the land-grant, President Samuel Colcord Bartlett of Dartmouth actually pursued separation and instigated discord. Bartlett was a Presbyterian minister, who as historian Marilyn Tobias writes, “conceived of the college as a closely knit paternal Christian organization with himself as pastoral head and interpreter of life and policy.”\textsuperscript{238} As Bartlett attempted to maintain the campus as a site of moral development, the faculty, students, and alumni demanded a transformation to reflect the changing society. Students detested the strict oversight, and the New York alumni complained that Dartmouth lacked the high collegiate culture of Yale and Harvard and its graduates were unprepared to ascend to leadership positions in the new economy. The controversy became an embarrassing public issue when the board of trustees held a quasi-trial in 1881 for Dartmouth constituents to elaborate their charges against the president. The president gave a passionate and effective defense of his policies and retained his post, but the trial exposed conflicting educational agendas at Dartmouth. Bartlett’s efforts to save “old Dartmouth” from modernizing forces would continue over the next decade in the face of mounting calls for reform.\textsuperscript{239}

The programs in the Chandler Scientific School and the New Hampshire Agricultural College did not correspond with Bartlett’s educational vision, for he remained steadfast in his belief that the classical course provided the proper collegiate education. In a speech at the

\textsuperscript{237} Ibid, 71-74.
\textsuperscript{239} Ibid.
agricultural college commencement in 1881, the president offended those gathered when he extolled the virtues of the classical graduates and dismissed the agricultural college graduates as ready to do little more than the work of “highway surveyors, selectman, and perhaps, members of the legislature.” Charles Pettee, professor and dean at the agricultural college, wrote to a friend of Bartlett’s mistreatment of the agricultural students, “[he goes] out of the way to inform them that they are not members of Dart. College.” Bartlett’s actions were cited by the grange as evidence of the untenable land-grant relationship that had been forged in New Hampshire. Grange leaders continued calls for the establishment of an independent agricultural college “managed by practical, intelligent farmers, who have its welfare purely at heart.” But while the Dartmouth administration and the grange both wanted out of the marriage, the New Hampshire legislature remained unwilling to finance a new college and end the impasse.

Dean Charles Pattee believed the question of relocation was settled in 1889, and stated in the annual report that the agricultural college “must strengthen its bonds of union and sympathy with ‘Old Dartmouth’ so that all eyes in the State shall turn towards Hanover as the ‘mother of arts and eloquence.’” The situation was altered when gentleman farmer Benjamin Thompson died and willed his entire estate to New Hampshire for the establishment of an agricultural college. His property was appraised at $408,392.96, which was estimated to produce an annual return of $18,900.00. Thompson’s education ideas for the school were in line with the agricultural society members of his generation: education of a high grade, required labor, the teaching of the science of agriculture, and the conducting of regular experiments on the college

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240 Babcock, History of the University of New Hampshire, p. 74.
241 Letter reproduced in ibid., p. 74.
242 Cited in ibid., p. 79.
243 Pattee letter cited in ibid., p. 77
farm. As a condition of accepting the gift, the will stipulated that the state must contribute $3000 a year for twenty years.²⁴⁴

While all pursuing different agendas, President Bartlett, the state agricultural board, the agricultural college faculty, and grange leaders lobbied the legislature to accept the gift and move the agricultural college out of Hanover. Five of the major newspapers in the state editorialized against accepting the terms of a will that would require future legislative expenditures. The *Portsmouth Journal* declared that Thompson was “forc[ing] another incubus in the shape of a state agricultural college upon New Hampshire,”²⁴⁵ and the *Dover Daily Democrat* mused that the intent of the gift was “to establish a turnip yard over in Durham if the state will agree to fence it and keep it fenced.”²⁴⁶ However with the agricultural interests organized behind the magnanimous bequest, the legislators could hardly vote to reject the offer even at an annual cost of $3000. On March 5, 1891, *An Act to accept the Provisions of the Thompson Will, and to Provide for the Present Disposition of the Funds* was unanimously passed by both chambers and signed by the governor.²⁴⁷

In the month that followed, a special legislative committee reported in favor of removing the land-grant from Dartmouth after one year as required by the contract. President Bartlett, who could not wait to see agricultural College mustered out of Hanover, declared his willingness to waive the one-year stipulation.²⁴⁸ On April 10, 1891, the legislature voted to remove the land-grant funds from Hanover to an independent college to be built in Durham, New Hampshire. The new institution received the Thompson bequest, the regular state appropriation, the Morrill Act

²⁴⁴ *Ibid.*, 83-91
²⁴⁵ *Newspaper article quote is reprinted in ibid.*, p. 91
²⁴⁶ *Newspaper article quote is reprinted in ibid.*, p. 92
²⁴⁷ *Ibid.*, 93
funds of 1862, and the Morrill Act funds of 1890. Work on buildings and grounds commenced immediately, and the New Hampshire College of Agriculture and Mechanical Arts in Durham received its first class in the fall of 1893.²⁴⁹

The Vermont legislature was arguably the most conservative in the Northeast. A robust wool and cheese industry delivered large profits to Vermont farmers, and few were interested in supporting state venture through taxation. But in 1888, State Grange Master Alpha Masser was trying to convince farmers that an independent agricultural college was worth their support. He argued that the University of Vermont had failed the state’s farmers, and the federal funds should be given to this proposed institution.²⁵⁰ President Matthew Buckham and Senator Justin Morrill were hard at work trying to preserve the University of Vermont’s land-grant status.²⁵¹ In 1888, both men pleaded with the conservative legislature to make its first appropriation to the university to help the institution serve the state’s farmers.²⁵² Morrill traveled across Vermont, giving speeches on his land-grant act, explaining his broad, liberal intentions for the colleges. In the face of reformations throughout New England, Buckham attempted reforms to stave off an inquisition at home. The first permanent professor of agriculture was hired in 1886, an agricultural course and department were organized in 1888, and that same year the college began offering an eleven-week short course for farmers.

In November of 1890, Alpha Masser presented a petition from 5000 farmers demanding that a new independent agricultural college receive all federal funds from both Morrill Acts.

²⁴⁹ Ibid., 103-106.
²⁵¹ There collaboration on this issue can be seen in letters between both from 1888 to 1890, University of Vermont Archives. Matthew Buckham Collection. See Chapter 4 for a detailed discussion of this correspondence.
Justin Morrill and Matthew Buckham went to the state capitol to defend the university against the grange lobby. Morrill gave his most comprehensive explanation of his interpretation to date, arguing that elevating scientific study and providing access to larger numbers were his central aims not. It had never been his intention to provide vocational training of a low grade, he argued, and land-grant colleges should be simply schools for training farmers.  

Behind the scenes, Morrill wrote letters and visited colleagues in the legislature, where he reiterated that the agricultural college bill submitted on behalf of the grange was not in compliance with the Morrill Acts. He played upon conservative tendencies by suggesting that a new college would require state support for buildings, apparatus, and faculty salaries. When the final votes were called, the house overwhelmingly supported the grange bill, but the senate defeated the measure 18 to 12. It took the intervention of the father of the land-grant colleges, but the University of Vermont was able to buck the regional trend and retain the state’s land-grant.

Gradual Standardization

The new century dawned and the Northeastern United States had yet to reach consensus on the purpose and form of land-grant education. The region had followed three different paths. With the help of Justin Morrill, the University of Vermont had preserved its land-grant status, but a distrustful farm population and conservative legislature limited the institutions’ growth. The University of Vermont remained primarily a classical institution, making only slight advances in the applied sciences of agriculture and engineering before the turn of the century.

The Maine State College of Agriculture, the Massachusetts Agricultural College, and the

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253 See Chapter 4.
254 See for example Justin Morrill to G. G. Bennedict, November 5, 1890. University of Vermont Archives. Matthew Buckham Collection.
255 Morrill describes his approach to Buckham in a letter on November 25, 1890. University of Vermont Archives. Matthew Buckham Collection.
256 Rozwenc, Agricultural Policies in Vermont, 69.
agricultural programs at Pennsylvania Agricultural College, Cornell University, and Rutgers University charted an intermediate course. These colleges were producing few practicing farmers, but they proved successful in graduating agricultural leaders who took positions at land-grant colleges, experiment stations, and state and federal agencies.\textsuperscript{257} Their scientific work on fertilizers, pesticides, breeding, veterinary science, and cultivation to name a few, proved profitable and brought good will from the farming population. The colleges built close relationships with state granges, hosting meetings, exhibitions, and socials for their members. Farmers came to appreciate these contributions, and slowly accepted the fact that most graduates would choose business, engineering, or teaching vocations over farming.\textsuperscript{258}

The products of the grange-inspired reformation, the Rhode Island State College of Agriculture and the Connecticut State College of Agriculture offered an alternative model of land-grant education. The colleges attempted much of the grange vision: required labor, practical instruction on the model farm, and modest admissions standards.\textsuperscript{259} Many of the students that enrolled during the first year had only the benefit of a common school education. The registrar books reveal that no students were turned away at Connecticut, even those who failed every subject on the entrance examination (Rhode Island was only slightly more selective).\textsuperscript{260} The curriculum was elementary, for example at Storrs the most difficult course was trigonometry during the senior year (Sheffield Scientific School students had trigonometry their first year).\textsuperscript{261} Students spent the first half of the day in the classroom learning the basics of agricultural

\begin{footnotes}
\footnote{Data from \textit{Catalogue of the Maine State College, 1885-1886} and Harold Cary, \textit{The University of Massachusetts}.}
\footnote{Cary, \textit{The University of Massachusetts} and Smith, \textit{The First Century}.}
\footnote{Annual Reports of the Board of Managers of the Rhode Island State Agricultural School and Experiment Station, 1889-1895. Providence: E. L. Freeman & Son, State Printers).}
\footnote{“Register of Students, 1884-1894.” University of Connecticut Archives: Dodd Research Center. Office of the Registrar.}
\end{footnotes}
practice, and then would remove to the fields in the afternoon for practical instruction. And, the Connecticut Agricultural College pleased its grange backers when it managed to have the highest percentage of farming alumni anywhere in New England (In some of the earliest classes, seventy-five percent of the class went on to farm).\textsuperscript{262}

After an initial outburst of enthusiasm, however, enrollment numbers at both institutions began a sharp decline.\textsuperscript{263} The colleges were facing a shrinking market. Emerging high schools offered vocational curricula and undercut the traditional clientele, and those with aspirations for social mobility chose colleges of a higher intellectual grade.\textsuperscript{264} In addition, the Association of American Agricultural Colleges and Experiment Stations worked in the background to elevate and standardize the entrance examinations and curricula of member institutions; Rhode Island and Connecticut were not in compliance.\textsuperscript{265} Recognizing the dilemma, President Washburn of Rhode Island and President Flint of Connecticut convinced their boards of trustees in the need for reforms. Washburn worked to develop an engineering program and raise admissions standards. Flint fired several members of the faculty, practical farmers from the Storrs Agricultural School days, and replaced them with university-trained scientists. The reforms caused outrage amongst grangers, which circulated unsubstantiated allegations of drunkenness, immorality, or ill-temperament against both men.\textsuperscript{266} While the historical evidence suggests that the claims were untrue, both men chose to leave their campuses rather than submit to the public debasement of

\textsuperscript{262} Data on graduates collected from CAC Bulletin, “Alumni and Alumnae,” University of Connecticut Archives: Dodd Research Center. Alumni Association Collection; and Report of the Board of Managers, 1914. “Graduates” University of Rhode Island Archives.

\textsuperscript{263} Stemmons, Connecticut Agricultural College; Eschenbacher, The University of Rhode Island.


\textsuperscript{265} See Williams, The Origins of Federal Support.

\textsuperscript{266} For the Washburn charges see the Providence Sunday Journal, May 12, 1902; for the Flint charges see Hartford Courant, July 20, 1901.
their character.\textsuperscript{267} As early as 1905, however, both colleges would return to the reforms initiated by the departed presidents.\textsuperscript{268} Admission standards increased, new faculty members joined the colleges, programs were offered in the mechanical arts, curricula moved to a higher grade, and enrollment improved.\textsuperscript{269} The farmers were forced to accept the settled reality of the New England land-grant college: an institution that conducted useful agricultural research, engaged in outreach to farmers and rural communities, but that did not produce farmers.

\textsuperscript{267} See Lucy Tucker Interview, Oral History Project. University of Rhode Island Archives; Dean Adams Interview, Oral History Project, University of Rhode Island Archives, William Clarke Interview, Oral History Project, University of Rhode Island Archives; Stemmons discussion of the “War of Rebellion in Connecticut Agricultural College.”

\textsuperscript{268} Stemmons, \textit{Connecticut Agricultural College}; Eschenbacher, \textit{The University of Rhode Island}.

\textsuperscript{269} Ibid.
CHAPTER THREE

The Origins of Land-Grant Education in the Northeastern United States: Creating Colleges of Science, Industry, and National Advance

“It is safe to say that the battle which had been raged between the devotees of science and the proficient in letters are over. The question is settled! Science has won its spurs and achieved its knightly rank.”¹ – Daniel Coit Gilman

“God intended us for progress, and we counteract his design when we deify antiquity, and bow down and worship an opinion, not because it is either wise or true, but simply because it is ancient.”² – Francis Wayland, Address at Union College, 1854.

“Should no effort be made to arrest the deterioration and spoliation of the soil in America, while all Europe is wisely striving to teach her agriculturalists the best means of hoarding up capital in the lands on that side of the Atlantic . . . [then] we are doomed to be dwarfed in national importance . . .”³ – Senator Justin Morrill, Addressing the purposes of his Land-Grant College Bill on June 6, 1862.

Introduction

Ezekiel Holmes left his home in Kingston, Massachusetts at sixteen years of age for Providence, Rhode Island and Brown University. The year was 1817, and Holmes had completed his college preparations at the hand of a local minister.⁴ His first two years at Brown were filled with Greek and Latin grammar, readings from Cicero, Homer, Euclid, and the Greek Testament, the study of Hedge’s Logic and Roman Antiquities, arithmetic, and geography.⁵ One student described his professors as follows: “portly men, going on sixty. Sitting crossed legged in an arm-chair . . . They would insist on you giving them the exact words of Blair, or of Kames, and

of Stewart and Hedge . . . there was nothing . . . but translating, and parsing . . .”\(^6\)

As an escape from their mundane coursework, many students joined one of the two rival literary societies, where they enjoyed private libraries, debates, public declamations, and socials. The Philermenian Society was the older of the two and embraced an aristocratic, Federalist heritage, whereas the United Brothers had Republican leanings.\(^7\) The young Ezekiel Holmes had little interest in the literary clubs or politics, so in 1818, he and fellow classmates established the Philophysian Society, a group devoted to his budding passion for scientific research.\(^8\)

A scientific spirit had entered the halls of Brown during Ezekiel Holmes’ tenure at the instigation of chemistry professor John D’Wolf and botany lecturer Dr. Solomon Drowne. D’Wolf had attended Brown but did not take a degree and received the bulk of his training from nationally-renowned Philadelphia chemist Dr. Robert Hare.\(^9\) Student testimonials extol the teaching abilities of the young D’Wolf: “He opened to the eyes of the young student . . . the wonders of a new and brilliant science . . . Sometimes in drawing practical deductions from the science he was teaching . . .”\(^10\) Dr. Drowne was a much older man (b. 1753), having graduated from Brown at the dawn of the revolution and serving in the continental army before matriculating at the University of Pennsylvania Medical School and studying in Europe. Even at such an advanced age, he was remembered as a man “full of enthusiasm,” who had honed his craft by giving public lectures in Philadelphia and Providence. Drowne cultivated his own botanical garden, which supplemented the paucity of material available in the scientific texts.\(^11\)

\(^6\) This quote is from Brown undergraduate Barnas Sears of the class of 1825, cited in Bronson, *The History of Brown University*, p. 167.

\(^7\) Ibid., 180-182.


\(^10\) Student quote cited in ibid., p. 161.

\(^11\) On Solomon Drowne, see Ibid., 160-161.
Starting in his Junior year, Ezekiel Holmes took courses in the natural sciences and was awed by D’Wolf and Drowne. The Philophysian Society students were inspired to undertake their own scientific inquiries, “searching for plants and minerals during . . . leisure hours . . . [and through] experiments in chemistry conducted by means of simple private apparatus [that Holmes] had purchased himself.” One of Holmes scientific explorations resulted in the discovery of what would be called the Mt. Mica Quarry in Paris, Maine. He had unearthed the most remarkable deposits of tourmaline in the United States, which would produce the world’s first rose quartz crystals and remain a profitable gem mine into the twenty-first century.

In the days before the Brown commencement of 1821, the members of the Philophysion Society gathered for an address entitled “Utility of Philosophy to a Nation,” by Ezekiel Holmes. At only twenty years of age, he delivered a sophisticated address describing how scientific discoveries spurred advances in nations around the world. He then reminded the society members of their responsibility to the world they would inherit:

> It is our duty to peruse the great volume of Nature which [God] has spread . . . to increase the talent he has given us . . . to investigate the objects about us, to learn their uses, and apply them for the benefit of the community.

Holmes declared that throughout history men tried to pass along indefatigable truths to future generations, but a Philophysian was skeptical of such claims. For he said, “Experience answers, adhere strictly to the truth . . . admit nothing certain until it has undergone the most severe scrutiny of the senses . . .” His final words reveal a confidence that scientific men would not only bring progress to the people, but become celebrated leaders of the nation: “Go on by your

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13 Ibid., p. 208.
14 Ibid., 209.
15 Ezekiel Holmes, “Utility of Philosophy to a Nation,” Published in Boardman, “Ezekiel Holmes. Memorials, Journals and Correspondence,” p. 188.
16 Ibid.
researches . . . until every nation on the Globe which reveres the name of an American will also bow with respect to that of a Philosopher.”

The scientific society would end in 1827, but Ezekiel Holmes and like-minded compatriots persisted in living the lives of Philophysians. After taking a medical degree from Bowdoin College in 1824, Holmes settled in Gardiner, Maine to practice medicine. He was soon recruited to teach natural sciences at the Gardiner Lyceum, where he set upon collecting minerals, insects, and plant-life to share with his students. He was promoted to the position of principal in 1829, but endured a pittance in salary and a constant lack of funding for apparatus and supplies. In a letter to the trustees, Holmes stated,

something must be done to save the reputation of the institution . . . The public [has] been disappointed and they in turn will and do disappoint you in their patronage.

He proposed the enlargement of the model farm, the building of a workshop, and an expansion of the boarding house. However with the lack of financial support, progress was allusive. Disheartened, he left Gardiner in 1832, and embarked on a host of new ventures: writing for agricultural journals, agitating for the state’s first geological survey, introducing new livestock breeds to the state, and writing the founding constitution of the Maine State Agricultural Society. And it would be with his establishment and editorship of the *Maine Farmer* – the state’s leading agricultural journal – that Ezekiel Holmes would leave his legacy on land-grant education in Maine. When Bowdoin College was poised to become the state’s land-grant college

17 Ibid.
19 Ibid., 210.
21 Ibid.
in 1864, Holmes warned fellow agricultural society members, that attachment to a classical college would mean the subjugation of scientific study.\textsuperscript{23} For as envisioned in 1820, he wanted colleges established with the purpose of “holding out encouragement to those who are desirous of knowledge . . . [where] the humble admirer of Nature may roam at his pleasure.”\textsuperscript{24} And remembering the challenges at Gardiner, he rallied support for a perpetual federal fund that could permanently sustain scientific study. His successful advocacy for an independent Maine Agricultural and Mechanical College was premised on making scientific studies the equal of literary pursuits, and giving a place for aspiring and established Philophysians to uncover scientific truths and promote human progress.

**Agricultural Societies and Science**

Ezekiel Holmes’ story is illustrative of how a cohort of college-educated, scientific individuals left an indelible mark on scientific education during the mid-nineteenth century. Similar to how members of the revolutionary generation joined philosophical societies, amateur and professional scientists of the 1830s, 1840s, and 1850s formed agricultural societies to advance knowledge of those branches related to farming, mining, and mechanics – botany, chemistry, geology, physics, and animal physiology.\textsuperscript{25} In Jacksonian America, farming not only dominated the economy but the social and cultural milieu, and scientists were interested in improving all aspects of the national vocation.\textsuperscript{26} Many agricultural society members held primary careers as doctors, lawyers, merchants, or public officials, and devoted their free hours

\textsuperscript{23} Smith, *The First Century*, 4-5.
\textsuperscript{24} Ezekiel Holmes, “Utility of Philosophy to a Nation,” p. 188.
\textsuperscript{26} Ibid., 7-26.
to experimentation with the crops and animals on their farm laboratories.\textsuperscript{27} The agricultural society movement would spawn agricultural fairs, agricultural journals, state agricultural boards, and experiment stations that would serve as sites for sharing research discoveries, discussing theories, and debating the future of agricultural science and farming practice.\textsuperscript{28}

The three main components of the agricultural society agenda were to establish a scientific basis for farming, achieve an accepted place for agricultural science within the broader scientific community, and convince the traditional farmer to embrace science on his own lands.\textsuperscript{29} Society members attempted to connect with the farming population though their agricultural journals, which were used to disseminate science, theories, and commentary.\textsuperscript{30} In short, they wanted to use their outreach efforts to professionalize farming by placing it upon a set body of knowledge, to elevate the status of farming in society, and to give the agricultural scientists the leading role in plotting the direction of the vocation. However, Alan Marcus astutely observes

\begin{footnotesize}
\begin{itemize}
\item [\textsuperscript{29}] Marcus, \textit{Agricultural Science}, 18-26.
\item [\textsuperscript{30}] While most journal editors claimed a large readership amongst “regular farmers,” the historiography includes varied accounts of who actually read agricultural society journals. For example, Albert L. Dumaree claims in \textit{The American Agricultural Press 1819-1860} (New York: Columbia University Press, 1940) that most readers were wealthy farmers and professional whereas ordinary farmers found the journals irrelevant. This perspective stands in contrast to Richard Bardolph’s assertion in \textit{Agricultural Literature and the Early Illinois Farmer} (Urbana, IL: University of Illinois, 1948) that the journals were “organs of the plain people.” However, Sally McMurry’s empirical analysis of subscription lists of the \textit{New York Cultivator} suggests a more balanced and nuanced view. McMurry finds that most readers were farmers not professionals, educated, and positioned in the middle income strata of the community. The author places the readers between the extremes of the wealthy “book-farmer” reformer and the meaner “anti-book farmer,” and finds farmers who respected tradition and practiced cautious experimentation. See Sally McMurry, “Who read the agricultural journals? Evidence from Chenango County, New York, 1839-1865,” \textit{Agricultural History}, Vol. 63, No. 4 (Autumn, 1989): 1-18.
\end{itemize}
\end{footnotesize}
that this three-pronged agenda presented an inherent tension amongst the agricultural scientists. This conflict is put well by Marcus, “For agricultural scientists to secure for themselves the disputed position within the American scientific community required them to downplay the contentions of scientific farmers but not alienate their faith in science.”31 The term “scientific farmers” was applied to practicing farmers who believed in the value of science and attempted their own experiments. The agricultural scientists had to draw a distinction between their own objective, professional investigations and the amateur inquiries of the “scientific farmers” that were often colored by conjecture, pet theories, and tradition. As the scientists moved into and became credentialed by agricultural colleges in later decades, they promoted a new view of the practical farmer: those who could take scientific discoveries and translate them into practice, but not engage in serious inquiry themselves.32

The agricultural societies’ efforts to convince the farming population to embrace their scientific pronouncements were complicated by class and status differences. Agriculture journal writers often used the pronoun we or our class to suggest common cause and interests with the traditional farmer. For example,

Many suppose the farmer to be a mere hewer of wood and a drawer of water for the rest of society, possessed of little or no intellectual cultivation . . . but the only way we can place ourselves on an equality in the social scale with the highest grades in society, is, by elevating as a class our intellectual and moral condition [italics added].33

But the wealth and education of the agricultural society gentlemen placed them in a different social and economic position. This produced rhetoric that mixed self-assured confidence with

31 Marcus, Agricultural Science, p. 30.
32 On the important distinction between “scientific farmers” and “agricultural scientists,” and the rise of agricultural scientists in America see ibid., 27-53.
33 The New England Farmer; a Monthly Journal (1848-1871); May 26, 1849; 1, 12.
paternalistic evaluations of the condition of the average farmer. An editorial in the *New England Farmer* in 1853 lectured farmers for being beholden to traditional practices,

> they need . . . to get rid of the prevailing notion that farming is, necessarily an unmental employment . . . they need more intercourse . . . to see and learn what other farmers are doing, and if they have improvements . . . adopt them.\(^{34}\)

The editorial concluded that farmers’ greatest need was to form agricultural societies for their own benefit, where they could reap the civilizing influences of science.

By the 1850s, agricultural society members turned to educational reform, calling for agricultural colleges to advance the science of farming.\(^{35}\) One Pennsylvania agriculturalist argued that “books, periodicals, and agricultural exhibitions” were no longer sufficient to teach “so profound a science as agriculture . . . [which] is susceptible of more rapid progression than any other pursuit.” He argued that neither individual experimenters nor agricultural societies “possess[ed] the means . . . to make experiments . . . on an extensive and reliable scale.” However, if state agricultural colleges were established, “liberally endowed, provided with competent professors and tutors, and a farm of sufficient extent,” then farmers would be afforded the opportunity “. . . of becoming acquainted with the physical sciences.”\(^{36}\) Charles Plumb, an agricultural scientist from New York, notes that agricultural colleges would not only advance the scientific knowledge at the basis of agriculture but produce individuals who could lead the vocation’s advance. He states that agricultural college graduates would improve the industry by

\(^{34}\) "What the Farmer Most Needs." *The New England Farmer; a Monthly Journal* (1848-1871); August 1853, 5, 8.


“advising and directing [farmers and by] exercising a progressive, intelligent influence over the work of husbandman.”

It would be an oversimplification to suggest that the scientists and gentlemen farmers of the agricultural societies were in consensus on what was the primary purpose of agricultural colleges. Some wanted institutions centrally geared towards advancing knowledge of agricultural science and educating future professors and scientists, who in the words of one agricultural professor, could “develop and elucidate science, which the masses may apply.” Others maintained a greater interest in educating practicing farmers. While eschewing manual training methods, what Marcus argues would have “violated the spirit of a higher or professional education,” these reformers believed scientific education would make farmers more receptive and able to translate science into practice. The different camps were united by a shared commitment to educational institutions where science, especially the applied science of agriculture, had the leading role. Whether agricultural colleges should focus on training an elite scientific few or bring scientific practice to the masses remained an open question, and the society members joined together to lobby for state agricultural colleges. The movement in the Northeastern United States bore fruit in Massachusetts (colleges were proposed but never opened in 1827 and 1847), New York (The State Agricultural College at Ovid, chartered 1853), and Pennsylvania (The Farmers’ High School, chartered 1855).

Massachusetts was at the vanguard of the agricultural society movement, incorporating its state organization as early as 1792. The avowed purpose was

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37 Cited in Marcus, *Agricultural Science*, p. 35.
38 This quote is from agricultural professor E. M. Pendleton is cited in Marcus, *Agricultural Science*, p. 36.
39 Ibid., 33.
to make experiments themselves and invite others thereto on the subject of agriculture . . . [and] to give handsome premiums to the men of enterprise who have by their inquiries made useful discoveries and communicated them to the public.  

By the 1820s, the society’s publication The New England Farmer was the leading agricultural journal in the region. In September of 1825, the journal called for a Massachusetts Agricultural College, and proposed a course for common school graduates that included agriculture, mechanics, moral philosophy, and domestic economy. The college was to have a model farm “best adapted to agricultural experiments.” Society members met in Boston to prepare a petition for the legislature and raise funds. No immediate results followed. In 1827, a similar scheme was presented by agricultural society members from western Massachusetts who prodded legislators to “establish the Massachusetts Seminary of the Arts and Sciences.” Again no action was taken on the legislation, and the movement for an agricultural college lay dormant until the 1840s.

Amherst College, a small private college just two decades old, came under the leadership of one of the most fervent supporters of agricultural and scientific education in the state in 1845. President Edward Hitchcock (1845-1854) was an active member of the scientific community: a member of the local agricultural society, chemistry and natural history professor at Amherst, the state geologist, and he conducted the first scientific survey of Western Massachusetts. In addition to his primary responsibilities in chemistry, he taught courses in botany, geology,

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40 See the website of the Massachusetts Society for the Promotion of Agriculture: http://www.promotingmassag.org/history.php.
43 Ibid., p. 54.
44 True, History of Agricultural Education, p. 76.
45 Ibid.
46 Ibid., 78.
zoology, astronomy, and anatomy. Hitchcock was mentored by Professor Benjamin Silliman of Yale College, the leading science professor of the day and founder of the American Journal of Science and the Arts. Historian Frederick Rudolph attests, “Silliman was a magnet for young men with scientific aspirations . . . [who] won fame as a popularizer of the scientific outlook.” After completing his scientific survey of the region, Hitchcock was convinced that Amherst’s scientific capacity could be used to improve Massachusetts agriculture. Speaking directly to agricultural education naysayers in the state, he said in 1845, “The day had gone by . . . when we reject and treat contemptuously what has been called book farming.” The president was joined by Amherst professor Dr. Charles Shephard, who gave several lectures to students and agricultural societies alike on scientific agriculture. Shephard issued his own warning to farmers: “Either participate in the movement or else see [your] sons leaving their homes . . . daughters entering the cotton mills . . . and farms sliding from under [you] into more enterprising hands.”

In 1847, Shephard convinced the Amherst trustees to petition the legislature for a state agricultural college – an institution with “an experimental farm, botanical gardens . . . and other needed apparatus.” A charter was issued by the state, as was a pledge of $15,000 under the condition that the institution could raise $15,000 itself.

Popular support for an agricultural college still proved wanting, as the campaign to raise $15,000 fell flat. In 1850, the state legislature commissioned Edward Hitchcock – who was in Europe at the time – to inquire into the best methods for agricultural education on that continent.

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47 Edward Hitchcock, Reminiscences of Amherst College: Historical, scientific, biographical and autobiographical: also, of other and wider life experiences (Northampton, Mass: Bridgman & Childs, 1863).
49 This quote was from an address given by Hitchcock in Northampton, Massachusetts and is quoted in Harold Whiting Cary, The University of Massachusetts: A History of One Hundred Years (Amherst, MA: The University of Massachusetts Press, 1962), p. 12.
50 Ibid., p. 12.
and make recommendations for Massachusetts. His report reiterated past demands for an experimental farm and called for professors of the major areas of agricultural science.\textsuperscript{52} Hitchcock also made a not too subtle reference to Amherst, suggesting the agricultural college be located near an existing college to allow for the sharing of resources.\textsuperscript{53} But once again efforts were stalled when the foci of the agricultural societies and the legislature turned to the establishment of a state agricultural board (f. 1852). During the next few years, the energies of the agricultural societies would be devoted to this entity, as the state board meetings became the primary site of sharing and disseminating new knowledge in agricultural science and practice.\textsuperscript{54} But when a new hope for agricultural education emerged from Justin Morrill’s land-grant college act in the following decade, a tried and tested agricultural science coalition – centered and led from Amherst – seized the opportunity to implement its vision.

In New York, the state agricultural society petitioned the legislature for an agricultural college in 1852, which failed by a single vote. The following year, the society again lobbied for an institution that would furnish

the sons of the farmer and mechanics of [the] state . . . all the facilities for a thorough education, and at the same time furnish them with all practical knowledge . . .[and proffer] the advantages which science is capable of yielding . . .\textsuperscript{55}

The New York State Agricultural College was chartered on April 15, 1853, and at the annual convention, the president of the state agricultural society, Lewis G. Morris, gave an address on what he saw as essential characteristics of the new enterprise. Morris was one of the state’s first scientific breeders of Devonshire cattle and South Down sheep, a member of the Royal

\textsuperscript{52} True, \textit{History of Agricultural Education}, 78-80.
\textsuperscript{53} Cary, \textit{The University of Massachusetts}, 14.
\textsuperscript{54} Ibid., 15-16.
Agricultural Society of England, a key investor in the building of the Harlem Canal, and an international exporter of cattle stock.\textsuperscript{56} The president’s speech called for a union of scientific theory and practice, and specifically focused on the importance of agricultural chemistry to “realize the wonder-working influences of those chemical combinations that serve to produce the plant and resuscitate the soil.”\textsuperscript{57}

Similar events transpired in Pennsylvania, where agricultural society president Frederick Watts led efforts to establish an agricultural college in the commonwealth. Watts was a graduate of Dickinson College in 1824, a successful attorney and judge, and a business developer for the county railroad lines and gas and water companies.\textsuperscript{58} In addition to these pursuits, he was an agricultural reformer and gentleman farmer who experimented on his 116 acre farm outside of Carlisle, Pennsylvania. It was from there he introduced new crops and farming implements to area farmers and gained notoriety as an agriculturalist.\textsuperscript{59} When the Pennsylvania Agricultural Society was formed in 1851, Watts was the unanimous choice for president. He used his leadership position to pressure the state legislature to establish an agricultural college. A charter for the Farmers’ High School of Pennsylvania was passed in 1854, which according to the institution’s first catalogue in 1859, was to

afford a system of instruction as extensive and thorough as that of the usual courses in our best colleges . . . but devoting no time to the ancient languages . . . and devoting a correspondingly longer time to scientific instruction.\textsuperscript{60}


\textsuperscript{58} Dickinson University, Encyclopedia Dicksonia, Retrieved from http://chronicles.dickinson.edu/encyclo/w/ed_wattsF.htm

\textsuperscript{59} Ibid.

\textsuperscript{60} Farmers’ High School of Pennsylvania. Catalogue of the officers and students of the Farmers’ High School of Pennsylvania for the year 1859 (Philadelphia, PA: W.S Young, 1859), p. 32
The curricula would embrace those sciences which had “a practical or theoretical bearing upon agriculture . . .”\(^\text{61}\) After leading the effort to write the charter, Watts was selected as the first president of the board of trustees, and expedited the procurement of a gift of a 200 acre farm in the center of the state and an appropriation from the legislature.\(^\text{62}\) In 1859, he found a capable president for the institution with impeccable scientific credentials and a clear higher education vision. His name was Evan Pugh, and his arrival signaled a new wave in the movement for higher education reform.

**American Students in Europe**

Whereas the scientists and gentlemen farmers that populated agricultural societies and edited journals were either educated in basic sciences in a classical college or self taught,\(^\text{63}\) reformers Evan Pugh, Samuel Johnson, Ezekiel Dimond, William Clark, and John Pitkin Norton pursued advanced scientific study in the universities of Europe. While abroad, they became abreast of the newest discoveries in chemistry, botany, geology, and engineering, and were propelled into a fast track of higher education leadership. Norton and Johnson were leading lights at Yale’s Sheffield Scientific School, Dimond at the New Hampshire Agricultural College, Pugh at Pennsylvania Agricultural College, and Clark at the Massachusetts Agricultural College.\(^\text{64}\) Laurence Veysey notes a smattering of American students studied in Europe between

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\(^{61}\) Ibid.


\(^{63}\) For good background on some of the leading lights of the agricultural society and journal movement see George F. Lemmer, “Early Agricultural Editors and Their Farm Philosophies,” *Agricultural History*, Vol. 31, No. 4 (Oct. 1957): 3-22.

1820 and 1850, but the trickle became a steady stream in the 1850s. Upon returning home, these students were zealous missionaries for expanding scientific study and linking science with practice in American higher education. After his transatlantic jaunt and while serving as Yale’s librarian in 1856, Daniel Coit Gilman shared in his article “The Scientific Schools in Europe” all the virtues of European Universities. He celebrated the achievements of France’s Polytechnic Institution, School of Mines, and Engineering School, the exemplary universities in Germany, Prussia, and Austria, and Belgium’s Mining, Engineering, and Agricultural Institutions. Gilman concluded with an urgent plea to build similar institutions in America. The old guard in the agricultural societies – the likes of Holmes, Morris, and Watts – partnered with this younger generation of expatriate scholars in a joint effort to elevate the study of science in American higher education.

The supremacy of European science was on full display at the World’s Fair in London in 1851. While confident in their democracy, laissez-faire economics, and protestant Christianity, English commentators of the event admitted inferiority in scientific education. The London Times declared the future supremacy of the British Empire required improved training for those destined as leaders of science and industry. Similar sentiments were expressed by the Americans. The delegation from the United States proudly displayed new technologies from its railroad, mining, and agricultural industries. However, when failing to fill their allotted space in

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67 Ibid.
69 See Jeffrey A. Auerback, *The Great Exhibition of 1851: A Nation on Display* (New Haven, CT: Yale University Press, 1999)
70 Ibid.
the hall of industry and science, the area was taken over by French exhibitions. While the paucity of American displays in the Great Exhibition Hall was partially caused by its government’s limited funding for the fair, it also exposed America’s scientific deficiencies. This was apparent to American visitors and was the source of regular comment in newspaper accounts of the event. America was entering the golden age of its industrial development, but the World’s Fair of 1851 provided a stark reminder that in the area of scientific discovery, education, and application, the upstart nation lagged behind its international competitors.

The pace of scientific discovery in Europe in the first half of the nineteenth century was truly remarkable, especially in the areas of chemistry and geology. And while the London papers had expressed concerns with the quality of their scientific education during the World’s Fair, the British Isles and Continental Europe both witnessed substantial scientific gains during this era. Unlike scientific advance in the United States, much of the Old World activity was associated with institutions of higher learning. Sir Humphrey Davy of the Royal Institute of London established the fundamental laws of electro-chemistry, discovered numerous unknown elements, and published the Elements of Agricultural Chemistry in 1813. His student Michael Faraday, a professor of physics at the Royal Institute in 1833, pioneered the field of electromagnetism with discoveries of electromagnetic induction, diamagnetism, and the laws of electrolysis. His experimentation on electric current and electronic rotation devices was the

73 Allison Lockwood, Passionate Pilgrims, 262.
74 Ibid.
76 For an excellent overview of scientific developments of European institutions see Russell H. Chittenden, History of the Sheffield Scientific School of Yale University, 1846-1922 (New Haven, CT: Yale University Press, 1928), 4-21.
77 Holmes, The Age of Wonder, 337-378.
precursor technology to the modern electric motor.⁷⁸ In Scotland’s St. Andrews University, Sir David Brewster published his findings on the polarization of light in his Treatise on Optics in 1838.⁷⁹ In France, Gay-Lussac was uncovering the laws of the combination of gases in 1808 and André-Marie Ampère was creating the intellectual boundaries of electro-dynamics at the Collège de France in 1814.⁸⁰ Years later in 1849, fellow Frenchman Louis Pasteur would begin his scientific research on chemical molecules as a professor at the University of Strassburg, which would not only advance knowledge of organic chemistry but greatly enhance global health.⁸¹

The most renowned chemist of the era and intellectual forefather of agricultural science was Justus von Liebig of the University of Gießen (1824-1852) (today named the Justus Liebig-Universität Gießen) and the University of Munich (1852-1873) in Germany. Liebig conducted experiments and published findings that formed the intellectual foundational of organic chemistry and its application to agriculture. Among his many works, he published the Textbook on Organic Chemistry and Organic Chemistry in Relation to Agriculture.⁸² After reading Liebig’s treatise in 1840, Scottish chemist James F. Johnston of the University of Durham devoted his time to agricultural chemistry and delivered a series of lectures on the subject to agricultural societies across the highlands. Johnston published Lectures on Agricultural Chemistry and Geology in 1843, which brought him recognition as Britain’s leadings scholar of agricultural science and an appointment as chief chemist of Scotland’s Agricultural Chemistry

⁷⁹ Holmes, The Age of Wonder, 445-473
Association. In geology and natural history, Sir Charles Lyell published *Principles of Geology* in 1833 and inflamed the debate about the antiquity of the Earth, and Elie de Beaumont of the College de France and Ecole des Mines conducted an exhaustive survey of France and explained continuous changes to surface structures. Famed Swiss scientist Jean Louis Agassiz, while professor of natural history at the University of Neuchatel, made extensive study of glacier activity as well as fossil-based inquiries into the history of Europe’s aquatic life. Finally, naturalist Charles Darwin began his scientific research in 1842, and in 1859 published his paradigm shifting work *On the Origins of Species by Means of Natural Selection*.

This rich intellectual landscape attracted American students wishing to share in this European enlightenment. Two institutions proved especially attractive, University of Gießen and the University of Göttingen. Some of America’s earliest and most celebrated agricultural chemists studied under Justus Liebig at Gießen, including: John Pitkin Norton, the first professor of the Yale Sheffield Scientific School, his successor John A. Porter, and William Brewster, agricultural professor at the New York State Agricultural College in Ovid before moving to Sheffield. Equally important to America’s scientific development was the colony of students encamped at the University of Göttingen in the 1850s and 1860s, including William Clark, Evan Pugh, Samuel Johnson, George Caldwell, J.P. Kimball, and Ezekiel Dimond.

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84 See Ibid., 4-21.
86 Chittenden, *History of the Sheffield Scientific School*, Ibid.,
87 Rosenberg, *No Other Gods*, 135-152; Pugh would become president of Pennsylvania Agricultural College, Johnson the founder of American experiment stations, Caldwell a professor at Cornell, Kimball a professor at the New York State Agricultural College, and Dimond the President of the University of New Hampshire.
The formative experience in Germany brought intellectual growth and credentials, membership in an international fraternity of scientists and scholars, and commitment to the scholarly values of academic professionalism. Historian Charles Rosenberg eloquently describes the influence of German study.

[T]he German experience gave to American students a particular body of techniques and concepts, knowledge which at once justified and, in a sense, constituted the peculiar status of the man of learning . . . Once he had accepted the values of the world of academic science, the American scholar could measure achievement in primarily in terms of acceptance as a creative scholar by his disciplinary peers . . . American chemists returned to their native land not only with a reformer’s zeal, but with a blueprint to guide them.89

This was evident in the experience of Evan Pugh, whose academic beliefs were shaped by his interactions with European scientists and his research into the agricultural process of nitrogen fixation. Writing to Samuel Johnson, Pugh declares “I have had a jolly time attending all the meetings of the Chemical Society and some of the Royal Society. To meet such men as Faraday, Lyell, Graham, Graham, Hoffman, etc. is no ‘small potatoes by any means.’”90 No small potatoes, indeed! Only a decade prior, Pugh was but a blacksmith apprentice to his father in an undistinguished, rural Pennsylvania village.91 In Europe, he had pursued advanced chemistry at Leipzig, earned a Ph.D. at Göttingen, and observed Robert Brunsen’s gas laboratory at Heidelberg University. And he did not passively observe others, but advanced knowledge himself. In 1857, he relocated to England’s Rothamsted research station and conclusively answered the question: “do plants assimilate nitrogen directly from the air?”92 This contribution fulfilled Pugh’s scholarly ambition, what he referred to as “the great object of the chemist,

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89 Ibid., p. 142.
92 Bloom, Evan Pugh, p. 57.
[discovering] something new – something that . . . can [be] publish[ed] to the world.”

His discovery brought recognition in Europe and America. He was elected a fellow of the Chemical Society of London and of the American Philosophical Society. As Pugh and his peers returned stateside, they sought to instill these same academic values in the institutions they would build. They would orient land-grant colleges towards original research and scientific education of a high intellectual grade.

**Creating National Schools of Science**

Scientific education and research in America was drastically different from Europe, but it was a situation that returning students hoped to alter. Evan Pugh wrote Samuel Johnson that his sponsors at the Rothamsted Experimental Farm in England offered him a £500 salary to remain, but he must return home for “there is a field there upon which the harvest is great and the laborers are few.” And although Samuel Johnson joked the only way a chemist could survive in America was by marrying a wealthy bride, he too returned stateside to nurture the rise of American science. The return of one expatriate – John Pitkin Norton – began the slow but steady process of building a school of science in New England. Norton was the product of both reform influences: the agricultural society movement and advanced scientific study in Europe.

John Pitkin Norton was the son of wealthy Connecticut businessman and gentleman farmer John Treadwell Norton. The elder Norton was a leading citizen of Farmington, Connecticut where he amassed a fortune as president of the New York Central railroad, and

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94 *Chester County Historical Society, Evan Pugh*, 6.
96 Ibid., 137.
gained national attention by sponsoring the freed *Amistad* Africans to reside in his town.\(^9^7\) After becoming independently wealthy, Norton, Sr. spent the majority of his time at his mansion overlooking his expansive farm and collaborating with fellow gentleman from the state agricultural society.\(^9^8\) It was here that John Pitkin Norton became fascinated with the study of nature and the science of agriculture. His father recognized this, and encouraged (and financed) his son to become an “educated farmer.”\(^9^9\) Norton received a strong preparatory education at a New York academy, but there were few options for a scientific education in agriculture. So Norton crafted his own educational program from multiple sources. Between 1838 and 1840, he spent winters under the tutelage of Dr. Theodore Dwight of Brooklyn, studying classical subjects and mineralogy, geology, and chemistry.\(^1^0^0\) Summers were spent on New York farms, including one of the state’s largest agricultural operations, where he observed scientifically-trained Scottish agriculturalists. Between 1841 and 1843, Norton attended lectures on chemistry, mineralogy, and natural philosophy in New Haven and Boston, and although not a Yale student, he was a private pupil in Benjamin Silliman’s laboratory for three years.\(^1^0^1\)

In 1844, John Pitkin Norton informed his father that he intended to be a professor of agricultural chemistry, and sailed across the Atlantic for advanced study.\(^1^0^2\) He came under the mentorship of famed agricultural chemist James F. Johnston and worked in his experiment station in Edinburgh.\(^1^0^3\) The young Norton found Johnston to be “very pleasant indeed and just the man for a good instructor,” and appreciated his willingness to take excursions across the


\(^9^8\) Ibid.


\(^1^0^0\) Ibid.

\(^1^0^1\) Chittenden, *History of the Sheffield Scientific School*, 43-44.

\(^1^0^2\) Lanard, “John Pitkin Norton.”

\(^1^0^3\) Hill, “John Pitkin Norton’s Visit to England, 1844,” 219-222.
country and explain the best methods of scientific cultivation.\textsuperscript{104} Under his mentor’s guidance, Norton produced two scientific papers that were read at Cambridge. One project, a complete analysis of “Oats . . . the husk, the chaff & the straw of different varieties,” won him £50 from the Highland Agricultural Society.\textsuperscript{105} \textit{On the Analysis of the Oat} (1845) not only brought Norton recognition as a leading agricultural chemist in Britain, but garnered considerable attention from former associates at Yale College.\textsuperscript{106}

In the spring of 1846, John Pitkin Norton returned to New Haven to visit with his former teacher Benjamin Silliman. Coincidently, an anonymous donation has been made to Yale that proposed “to give five thousand dollars for the endowment of a professorship of agricultural chemistry and of animal and vegetable physiology, provided twenty thousand dollars be raised for that purpose.”\textsuperscript{107} The ageing Silliman addressed the corporation and argued that failing to recruit Norton, a young man of impeccable credentials and unlimited promise, would be assuredly regretted. The corporation assented, appointing Norton as professor of agricultural chemistry. At the same meeting, Benjamin Silliman, Jr. (for many years assistant to his father) was named professor of practical chemistry. In 1847, Norton and Silliman, Jr. began their new roles as the founding faculty of the School of Chemistry within the newly established Department of Philosophy of Arts.\textsuperscript{108} The department was to provide the opportunity to study science for its own sake, or to prepare students for “the ‘higher’ practical occupations of life . . . such as engineering, architecture, agriculture, mining, and manufacturing . . . [and as] teachers of

\textsuperscript{104} Cited in ibid., p. 219.
\textsuperscript{105} Ibid., p. 219 .
\textsuperscript{106} Ibid., p. 219.
\textsuperscript{107} Lanard, “John Pitkin Norton.”
natural science.”\textsuperscript{109} It was reserved for “graduates . . . and other young men of good moral character” who were not members of Yale’s undergraduate class.\textsuperscript{110} Eleven students enrolled in the Department of Philosophy of Arts the first year (all in the School of Chemistry) and fourteen more arrived the year after.\textsuperscript{111} Students attended lectures on agricultural chemistry, analytical chemistry, vegetable physiology, and botany, and conducted chemical experiments in the laboratory. Included in these first classes were Samuel Johnson, William H. Brewer, and George Brush; all became professors at Yale and nationally renowned scientists in their own right.\textsuperscript{112}

The Yale Corporation offered the Department of Philosophy and the Arts little more than the status of the Yale name. Salaries were generated from student fees, the department had to pay rent for classroom and laboratory space, and Benjamin Silliman, Jr. and John Norton used their personal finances for scientific apparatus.\textsuperscript{113} As Yale Professor Thomas Lounsbury explained,

\begin{quote}
The college . . . had no money to give, but even if it had, it is more than doubtful that they would have given it. No one . . . ever dreamed of the supreme importance which the natural sciences were soon to assume in every well-devised scheme of education.\textsuperscript{114}
\end{quote}

Yale’s traditional academic program remained one of the most popular courses of study in the country, and administrators were weary of redirecting resources towards untested educational experiments.\textsuperscript{115} Yale College stayed true to their curricular manifesto, \textit{The Yale Reports of 1828}, a defense of the ancient languages and classical texts. It declared that the purpose of higher

\textsuperscript{109} Combination of two quotes in \textit{Proposed Plan for a Complete Organization of the School of Science, Connected with Yale College} (New Haven, CT: Ezekiel Hayes, 1856), p. 4, 7.
\textsuperscript{110} See the department’s corporate authorization in Chittenden, \textit{History of the Sheffield Scientific School}, pp. 40-41.
\textsuperscript{111} Ibid., 48.
\textsuperscript{112} Ibid., 48-49
\textsuperscript{113} Ibid., 46.
\textsuperscript{114} Cited in Ibid., p. 46.
\textsuperscript{115} David B. Potts, \textit{Liberal Education for a Land of Colleges: Yale’s “Reports” of 1828}. (Palgrave Macmillan, 2010)
education was the cultivation of mental discipline not the accumulation of specific knowledge. Historian David Potts argues that Yale was following a rational strategy, for between 1828 and 1860, the college experienced 60 percent enrollment growth by maintaining a rigid commitment to the classical curriculum. It is for these reasons that the Yale Corporation was careful not to let the new scientific program devalue or compete with its staple product by prohibiting the college’s undergraduates from taking courses in the department.

While cautious of rapid innovation, the Yale administration did notice the steady enrollment growth in the School of Chemistry and created a Bachelor of Philosophy degree for graduates of the Department of Philosophy and the Arts. In 1852, the first class graduated with this distinction. That same year, the total student body swelled to 46, the department introduced a new course in engineering, and an equal number of students were enrolled in chemistry and engineering. The continuation of the program was in serious doubt, however, following the loss of the two founding professors in as many years. Benjamin Silliman, Jr. was recruited away by the University of Kentucky as its analytical chemistry professor in 1850, and after the first graduation in the spring of 1852, John Pitkin Norton died prematurely at the age of 30. On his deathbed, Norton bequeathed his books and apparatus to the college, and amongst his final words he uttered: “I hope it will be kept up.” The Yale Corporation had been pleased albeit surprised at the quality and number of students that had availed themselves of the programs under Norton and Silliman’s tutelage, and decided it would be “kept up.” Luckily for Yale, qualified scholars

116 Reports on the Courses of Instruction in Yale College by a Committee of the Corporation and the Academical Faculty. (New Haven, CT: Hezekiah Howe, 1828).
118 For enrollment numbers see Chittenden, History of the Sheffield Scientific School, 60-61.
119 Ibid., 54.
120 Lanard, “John Pitkin Norton.”
would soon become available thanks to faculty discontent and aborted reforms at its New England neighbor – Brown University.

Historian Roger Geiger states Brown University President Francis Wayland was “perhaps the most authoritative critic of the [mid-nineteenth century] colleges.” Wayland assumed the presidency of Brown in 1827, a post he retained for 28 years. Starting in 1842, Wayland called for reforms to the college curricula, proposing modern languages, engineering, chemistry, application of chemistry to arts, didactics (science of teaching) and the theory and practice of agriculture. His desire to elevate scientific study at Brown University was colored by his background as a political economist. Wayland authored *The Elements of Political Economy* (1837), the most used political economy text in the country at mid-century. He believed the advancement of science and its application to human labor was the key to the “progress of civilization.” It was through the proper cultivation of science that “this youthful republic would place itself abreast of the empires of Europe.” Wayland argued that skilled workers in the higher practical professions (he cites Civil Engineering) had been in demand for twenty years, but colleges and universities were unable and unwilling to produce them. He concluded a reorganization of American higher education was in order to promote science and technological

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126 Ibid., 18.
innovation, increase the productivity of labor, and supply specialized white collar workers for a modernizing economy.

In his 1850 *Report to the Corporation of Brown University on Changes in the System of Collegiate Education*, Wayland proposed a reorganization of Brown’s degree programs. The Bachelor of Arts degree would continue to include the traditional staples of the classical curriculum, but in addition, students would choose between additional courses in the ancient languages and mathematics, modern languages, or new courses in the applied science fields.127 The novel Bachelor of Philosophy degree would be devoid of the ancient languages. Instead, mathematics, English literature, and modern languages were required; the remainder of the academic program would be derived from science and applied science coursework.128 Wayland declared,

> collegiate study [of a] fixed term of four years . . . must be abandoned . . . and the time allotted to each particular course of instruction would be determined by its supposed relation to the wants of any particular profession.129

The president envisioned students studying subjects of their choosing and staying for varied amounts of time to meet their career goals. Those that passed examinations would receive degrees, and those completing courses would receive certificates of proficiency. In the years prior to 1850, Brown experienced drops in enrollment, and the board of trustees consented to the reforms in the hope of tapping an unmet demand for higher education.130 The new curricula and degree programs would take effect during the 1851-1852 school terms.

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Central to Wayland’s agenda was the hiring of two science professors: Professor William Augustus Norton in engineering and John A. Porter in agricultural chemistry. Norton had taught at Delaware College and was a graduate of West Point - a seminary that Wayland praised for producing more civil engineers and doing “more towards the construction of railroads than all our one hundred and twenty colleges united.” Porter had spent two years studying advanced agricultural chemistry in Germany with Professor Liebig, and was hired by Brown at the recommendation of his esteemed mentor. Events seemed promising at the outset, the first chemistry course taught by Porter attracted 11 students, and Norton’s engineering course opened with 19.

The initial enthusiasm of the professors, however, soon dissipated. While they may have expected a European-styled scientific school in Providence, both men were disappointed to discover Brown remained beholden to its traditional roots. Porter was dismayed with Wayland over requirements to manage student behavior. A student rebellion of 1851, including a riot in chapel climaxing with “abusive epitaphs towards the President and faculty,” was seen by the administration as the result of disagreement amongst the faculty over what constituted proper student discipline. Porter and Norton argued that they had done nothing “intentionally” to prompt the student rebellion, but had made it known that “police visits” to dormitories were “degrading” to their standing as scholars and scientists. At the end of their first term, both men resigned.

Wayland desired a new program of scientific study, but remained beholden to a traditional

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131 Delaware College prolonged its existence by experimenting with courses in agricultural science and engineering in the 1850s. See Ross, Democracy’s College, p. 20.
132 Wayland, Report to the Corporation of Brown University, p. 18.
134 Bronson, The History of Brown University, 287.
135 For an accounting of the student rebellion and faculty conflict that led to Porter’s and Norton’s resignations see Ibid., 296.
culture of academic paternalism. This approach disallowed an environment that nurtured the aspirations of the budding academic professional: more opportunities for research and less time managing student culture and behavior. Wayland’s commitment to the old order cost him Porter and Norton and doomed his reforms. After the first year few students were enrolling in the new degree or certificate programs, and the low entrance requirements brought less qualified candidates and soiled the reputation of the college.\textsuperscript{136} By 1856, Francis Wayland had resigned, and the board of trustees reinstated the Greek proficiency admissions requirements and the tried and trusted classical curriculum degrees.

The failure of the Brown University reforms proved to be a blessing to Yale’s new scientific department. On this subject, Daniel Coit Gilman once wrote, the fortunes of the Yale Scientific School were bestowed from “a little country town in Germany . . . first in chemistry and the allied branches, then in every other one of the natural sciences. The place was Giessen; the inventor, Liebeg . . .”\textsuperscript{137} This was true of the founder John Norton, and after his death, a second Liebeg protégé – John A. Porter – was recruited to lead the institution. After their disastrous experience at Brown, John A. Porter and William Augustus Norton accepted professorships of analytical chemistry and engineering in Yale’s scientific department.\textsuperscript{138} Not only had Brown lost the two leading scholars at the core of its reform initiative, but 15 engineering students followed Norton from Providence to New Haven.\textsuperscript{139} Norton would be the leading force in establishing the School of Engineering at Yale.\textsuperscript{140} In 1856, the faculty ranks grew again when two former graduates of the scientific program – fresh from study in Europe –

\begin{footnotesize}
\begin{enumerate}
\item Ibid., 290-292.
\item Gilman, \textit{The Sheffield Scientific School}, p. 120.
\item Bronson, \textit{The History of Brown University}, 287; Chittenden, \textit{History of the Sheffield Scientific School}, 55-62.
\item Ibid., 61.
\item Ibid., 57.
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returned to take positions at their alma mater. George J. Brush had studied at two leading mining schools, the Royal Mining School of Freiberg and the Royal School of Mines in London, and became Professor of Metallurgy. After working with Liebeg, Samuel Johnson returned from Germany to devote his energies to building an agricultural science program at Yale, and would be the foremost advocate for establishing agricultural experiment stations in America. In 1856-1857, he would take over John A. Porter’s position as professor of analytical chemistry, when Porter became the professor of organic and industrial chemistry. Natural History Professor James D. Dana of the regular collegiate department and Benjamin Silliman Jr. (who had returned from Kentucky in 1856 to take a post on the regular academic faculty at Yale) also taught the scientific students, rounding out the department’s instructional staff. In 1856, Professor Dana penned the *Proposed Plan for a Complete Organization of the School of Science Connected with Yale College*, which explicated the purposes and organization of what was now called the Yale Scientific School.

Dana’s proposal illustrates that the Yale Scientific School was to be America’s answer to the great European universities. For faculty members like founder John P. Norton, as well as the more recent additions of John A. Porter, Samuel Johnson, and George Brush, the experiment was an opportunity for scientifically-minded men to recreate the setting of discovery and dissemination they experienced abroad. The documents states,

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141 Ibid., 69-70.
142 Ibid., 64.
144 *Proposed Plan for a Complete Organization of the School of Science, Connected with Yale College* (New Haven, CT: Ezekiel Hayes, 1856).
[our] country is now ready for the establishment of a school of science . . . The studies pursued in the best institutions of Europe have been carefully considered in reference to our educational establishment and to the wants of our country . . . 145

The program of study would be of the highest intellectual order as each student would receive both “good mental discipline and thorough scientific acquirements.”146 The graduates of the Scientific School would receive the Bachelor of Philosophy Degree after three years of study. The students were organized into one of two tracks: a) “students of science” who would “find means for carrying out their investigations of nature,” and b) those preparing “for the higher practical occupations.”147 Dana’s pamphlet was circulated across the region to campaign for private donations. The outreach efforts produced a generous gift from Joseph Sheffield in 1858.

Railroad tycoon and wealthy philanthropist Joseph Sheffield was conveniently the father-in-law of Professor John A. Porter. On July of 1858, he deeded land and a large building to house the scientific school that would from then on bear his name. He purchased expensive apparatus for the laboratories as well as a $50,000 endowment to place the institution on a firm financial foundation.148 The core specializations in the Sheffield School were chemistry and the new civil engineering degree program. Between 1858 and 1861, new professorships were added in industrial mechanics, physics, and modern languages. The catalogue of 1861 notes that students could enroll in the “General Courses” degree program for non-specialists. By supplementing the Sheffield School courses from the Yale’s regular academic program, “general” students could receive instruction in mathematics, physics, modern languages, English literature, history, political economy, chemistry, botany, geology, astronomy, industrial mechanics, and engineering. The course of study in all degree programs was three years (in

145 Ibid., p. 5.
146 Ibid., p. 7
147 Ibid.
chemistry and engineering the first year was general knowledge with the last two reserved for specialization). With the bequest of Joseph Sheffield, an American school of science in the European tradition became a reality. As its mission statement for many years attested, “The Sheffield School is devoted to instruction and researches in the mathematical, physical, and natural sciences with reference to the promotion and diffusion of science . . .” Students and faculty members alike could now expand the boundaries of science without leaving the homeland.

While Yale’s Sheffield Scientific School was the first institution in the United States to offer a comprehensive, undergraduate curriculum in the natural and applied sciences, it coexisted with antebellum science reforms at other institutions. Harvard’s Lawrence Scientific School (f. 1847) recruited Louis Agassiz to Cambridge, and under his guidance, the institution became dedicated to pure science inquiry and individualized study. During the 1850s, the science of engineering was being advanced in the Military academies and an emerging sector of polytechnic colleges. By 1860, William Rogers was planning the Massachusetts Institute of Technology, which would become the national leader in expanding knowledge of engineering and other applied sciences. As previously noted, New York, Pennsylvania, and Massachusetts agricultural societies worked to advance the cause of agricultural science and education. The fruits of their labors were the New York State Agricultural College (f. 1853) and the Farmer’s High School (f. 1858). Literary institutions remained committed to the dictates of the Yale

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149 For the rapid curricular changes occurring during the first decade of the Sheffield Scientific School see ibid., 37-74.

150 See Catalogue of the Officers & Students in Yale College, 1875-1876. (New Haven, CT: Tuttle, Morehouse, & Taylor, 1875), 63-64.


152 Ibid.

Reports of 1828 and to the fixed course rooted in the classics. These colleges may have dabbled with an occasional scientific course, but remained satisfied in providing cultural refinement and preparing students for the learned professions.\textsuperscript{154} The failure of the Brown experiment was a warning to classical college leaders of the danger of straying too far from traditional curricula. There were a smattering of denominational colleges that attempted to meet local demands for practical science instruction, but these usually amounted to irregular courses or lectures supplementing the classical core.\textsuperscript{155} This was the uneven state of science in higher education at the eve of Senator Justin Morrill’s land-grant act of 1862.

**Schools of Industry and National Advance**

The previous section highlighted educational reformers of the antebellum era that embraced the Louis Agassiz dictum “I have no time for making money.”\textsuperscript{156} These scientists were primarily concerned with developing institutions that could advance the cause of science for its own sake. There was a second group equally interested in expanding America’s scientific capacity, but tended to focus on technological application and viewed reform through the lens of political economy. In an economy increasingly based on innovation, America’s scientific backwardness was seen as a threat to economic competitiveness and national progress. Similar to the basis for Francis Wayland’s reform efforts from a decade prior, the 1860s witnessed calls for higher education to increase the nation’s agricultural, manufacturing, and industrial output through scientific discoveries. They also proposed enhancing the quality of applied science

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\textsuperscript{154} See David B. Potts, *Liberal Education for a Land of Colleges.*
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\textsuperscript{156} See Elizabeth Cabot Cary Agassiz, *Louis Agassiz: His Life and Correspondence, Volume 2.* (Boston, MA: Houghton, Mifflin and Company, 1885).
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education to produce a more productive labor force, especially amongst the emerging technical
fields of engineering, mechanics, and scientific agriculture.\textsuperscript{157}

Justin Morrill’s land-grant act was a product of this ideology, premised on the belief that
American higher education could hasten the rise of American capitalism and advance the
nation’s standing in the world. On December 14, 1857, Congressman Morrill introduced a bill to
the House of Representatives with the purpose of “donating public lands to the several states [to
create institutions of higher learning] for the benefit of agriculture and the mechanical arts.” On
April 15, 1858, the House began a week of debate on the merits of the bill. On April 22nd, a final
vote was called. In the words of Morrill, “105 stood firm against . . . 100, the strongest vote the
opponents of the bill had been able to muster.” It would not be until February of 1859 that the
United States Senate would pass its version of the land-grant bill, with two minor amendments,
by a tally of 25 to 22. The bill then went to President Buchanan, who after waiting one week,
affixed his veto. In his veto message of February 26th, Buchanan argued that the measure was
unconstitutional, unfair to Western states, and would injure those institutions not receiving
federal aid. Morrill’s land-grant college bill would have to await a new chief executive.\textsuperscript{158}

The committee reports and congressional debate on the land-grant bill of 1858 reveal
little on the educational purposes of the bill. The opposition focused primarily on the unfairness
to Western settlers and the unconstitutionality of federal intervention into state’s rights. Senator
George Pugh of Ohio argued that unclaimed Western land should be “reserved for actual

\textsuperscript{157} Lee Stuart Duemer’s \textit{The origins of the Morrill Land Grant Act of 1862: A convergence of war and threat of war, agricultural influence, modernization, and the American university movement}. Diss. University of Pittsburg, 1996. Dissertations & Theses: A&I, ProQuest. Web. 8 Oct. 2009. While Duemer’s analysis is quite general, he does assert that macroeconomic changes (or as he terms it “modernization”) was a key influence on the origins of the land-grant movement.

\textsuperscript{158} The summary of 1858 bill’s legislative process is taken from L.L. Kandall, \textit{Federal Aid for Vocational Education: A Report to the Carnegie Foundation for the Advancement of Teaching} (New York, NY: Carnegie Foundation, 1917).
settlers,” and Senator Clement Clay of Alabama exclaimed “the powers asserted in this bill are hostile to the reserved rights and true interest of the states.”\(^{159}\) In 1858, most southern legislators assessed legislation within the context of preserving Southern slavery, and federal forays into higher education were seen as bringing abolitionists one step closer to intervention. Since the opposition refused to capitulate that the bill was legal, they did not debate its intended purposes or educational aims, leaving Justin Morrill to discuss these areas without retort.\(^{160}\)

Morrill declared that America faced deteriorating soil, diminished crop production, and a rapidly expanding populous, which required the agricultural advancement to sustain the nation’s progress. He argued that agricultural societies and county clubs had attempted to conduct research to these ends, but their “plentiful lack of funds . . . has retarded their maturity and usefulness.”\(^{161}\) Morrill proposed that only “thoroughly scientific institutions” could the nation assure the advancement of agricultural science.\(^{162}\) At these schools of science, there would be a “careful, exact, and systematized registration of experiments,” which he explained would provide “a rational induction of principles upon which we may expect to establish a proper science.”\(^{163}\) From this scientific basis, American agriculturalists could address many ills, remedy poor soil and crop diseases, improve breeding, land drainage, and crop cultivation, and eliminate destructive insects. Europe had invested liberally in ensuring the growth of its agricultural industry, and America should do the same. Morrill offered few educational specifics, stating only that farmers and mechanics “require special schools and appropriate literature quite as much as any of the so-called learned professions . . . and the faculties of young men shall be trained with

\(^{159}\) Quotes reprinted in Ibid., p. 10, 12.  
\(^{160}\) For a discussion of how the land-grant bill fit within the larger debates and political culture of the civil war era, see James McPherson, *Battle Cry of Freedom*. (New York, NY: Oxford University Press, 1988), 450-453.  
\(^{161}\) Ibid., p. 5.  
\(^{162}\) Ibid., p. 4.  
\(^{163}\) Ibid., pp. 4-5.
some reference to the vocation to which they are devoted to through life.” In 1859, Morrill had an incomplete conception of the purpose of the proposed colleges, beyond developing agricultural science and industry.

Three years later, the political winds shifted. President Lincoln was in the White House, and the congressional opposition to the Morrill Act dissipated when southern legislators departed with their state’s successions. Dissent now rested solely with Western legislators, who as Roger Williams argues, “did not want to see Western lands in the hands of Eastern speculators.” The land-grant bill of 1862 would give 30,000 acres of land (or land scrip) per congressional representative to each state, excluding those in rebellion against the Union, for the purpose of establishing colleges focused on the teaching of agriculture and the mechanical arts, while not excluding the classics and military affairs. Notwithstanding the objections of the Western bloc, the bill sailed through committee and came to the floor of the House. On June 6, 1862, Justin Morrill addressed the assembled chamber in support of his bill.

Justin Morrill speech of June 6, 1862 provides important insights into how the father of the land-grant colleges viewed his institutions as primarily a means of economic development and national progress. As in 1858, his address was short on educational details, as no discussion of curriculum commenced. Morrill did state that the act would allow “a bright-eyed boy, without means, but strong in virtues and noble aspirations . . . to achieve a liberal education.” And it would be through this liberal education that “young men might have . . . more fitness for their

164 Ibid., p. 4.
165 Ross, Democracy’s College, 64-65.
167 “Speech of Honorable Justin S. Morrill of Vermont, In the House of Representatives, June 6, 1862.” University of Vermont Archives. No.19: Congressional speeches, Vermont, p. 112.
sphere of duties, whether on the farm, in the workshop or on the battlefield.”\textsuperscript{168} In later years, Morrill would comment that his humble roots as a blacksmith’s son and a lack of opportunity to secure a higher education were major impetuses in writing his land-grant bill to provide college access to the industrial classes.\textsuperscript{169} Yet his speech of 1862 was short on this public good and expanded democracy rhetoric, and he framed the issue of student access largely in economic terms.

\textquote[Each man is trained to bring into action his whole mental and physical force . . . a superior and more valuable labor . . . Science, working unobtrusively, produces larger annual returns and constantly increases fixed capital, where ignorant routine produces exactly the reverse.\textsuperscript{170}]

After discussing how the land-grant bill could increase the productivity of American labor, Morrill turns to an economic assessment of agriculture and industry. Returning to his performance of four years prior, Morrill discussed how his bill would improve America’s agricultural output and enhance the nation’s economic competitiveness. He focused on the failures of American agricultural production, and the need for federal investment to increase output and prevent dependence on European goods. He noted that between 1850 and 1860, the Northeastern United States has witnessed a decrease in wheat, corn, hay, swine, oxen, and cheese production. Morrill laments that Pennsylvania had nearly equal acreage of England, but produced thirty times less sheep. New York, the leading agricultural state in the Northeast according to Morrill, had failed to increase production of any major staples over the previous decade, even though it had over a million more acres under cultivation. The state of United States agriculture was even more unsettling in the face of European advances in agricultural science and cultivation. The scientific techniques of the English, including the exhausting, restoring, and clearing of crops, had resulted

\textsuperscript{168} Ibid.  
\textsuperscript{169} Coy Cross, \textit{Justin Smith Morrill}, 77.  
\textsuperscript{170} Ibid., p. 123.
in each harvest being more profitable than the last. Louis Napoleon’s government investments in agricultural education and science had made crop production to double and in some case increase four-fold. And without going in to the specific innovations of European universities and scientific schools, Morrill exclaimed, “it is enough to know that [Europe] seems eager to place their people ahead in the great race for mastery.” 171

Justin Morrill viewed land-grant colleges as a means to advance knowledge of agricultural science, to apply that understanding to grow America’s agricultural industry, and to increase the productivity of American labor. Morrill’s purposes are best understood in the context of his political values and views on economic development. As a staunch Whig, Morrill followed in the footsteps of party leader Henry Clay in promoting “American System” policies: high tariffs to protect American industry, investment in internal improvements to develop economic infrastructure, and the maintenance of high land prices. 172 Morrill was mentored by economist and social theorist Henry Charles Carey, who penned numerous treatises on protectionism and developmental capitalism. Carey argued that in a developing economy like the United States, government intervention into the economy was the only way to ensure industrial development, high wages, and international competiveness. 173 Beholden to these ideas, Morrill became Congress’ leading proponent of protectionism for American industry, and a year before the land-grant act of 1862, he succeeded in passing the Morrill Tariff of 1861. 174 The tariff bill, while odious to southerners who wanted free markets to export its cheep goods, was a boon for northern industry, especially for the New England staples of wool and cheese. So when debating

171 Quote Ibid., p. 121.
174 Holt, The Rise and Fall.
the land-grant bill, it is not surprising that Morrill states “it is of the highest moment that at this time we make no blunder in the guidance of the industry of the country . . .”\textsuperscript{175} To its founder, the policy to create land-grant colleges was, at its core, an internal improvement program in the Whig tradition; it was a government intervention to guide America’s economic development.\textsuperscript{176} Agricultural education would lead to scientific cultivation, improved lands, increased valuation of fixed capital, and the creation of educated and productive labor for the new economy. As Morrill’s tariff protected industry from foreign goods, his land-grant colleges aimed at elevating American capital and labor in an effort to best international competitors.

Justin Morrill was not alone in understanding the land-grant act as a means of enhancing America’s economic development. University sponsors, reformers, and founders Francis Wayland, Joseph Sheffield, Daniel Coit Gilman, Andrew Dickson White, and Ezra Cornell all embraced this perspective in their own unique ways. After Wayland faded from his position as national spokesman for higher education reform in the 1850s, Daniel Coit Gilman seized that mantle to advocate for colleges and universities that were more closely linked to American industrial advance.

During Gilman’s time abroad between 1853 and 1856, he was convinced that Europe’s economic and commercial supremacy was a product of liberal investment in universities and scientific schools. He declared in a 1856 article, that anyone comparing the manufactured products on display at the World’s Fair Exhibition of 1851 to American goods would have to

\textsuperscript{175} Speech of Honorable Justin S. Morrill of Vermont, p. 124.
conclude: “the productions of our shops and factories are . . . inferior to what are made at a corresponding cost abroad.”

Gilman posed the following question to the American people:

Now, to what is the underdeveloped state of our mines, the imperfect character of our agriculture, the inferior quality of our manufactures, and the disappearance of our forests, to be attributed?

It was not because Americans were lazy or unintelligent, but because the nation lacked “the educational means we require . . .” Common schools provided basic education and colleges suited the learned professional, but Gilman argued an education fit for the “specialties” and the training of “specialists” was absent. He witnessed European students studying architecture and engineering, mining and metallurgy, mechanical arts, and applied chemistry, and pursuing technical careers that advanced the industries of their countries. Gilman concluded, “In the present condition of our country, it is . . . important that a Scientific School of the highest order should receive a corresponding degree of sympathy and support.”

In 1858, Daniel Coit Gilman was working as Yale’s librarian when he learned of Justin Morrill’s land-grant bill. Gilman wasted no time in collecting petition signatures in Connecticut on behalf of the legislation. After President Buchanan vetoed the bill, Gilman busied himself with his library work, but his interest was soon captured by the rapid advance of the recently established Sheffield Scientific School. by the time of the land-grant bill’s passage in 1862, Gilman had accepted a new position as Sheffield Scientific School’s professor of geography. The Connecticut legislature agreed to the terms of the Morrill Act in December of 1862 and during the following year, the Sheffield Scientific School was designated the state’s land-grant

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178 Ibid., p. 323.
179 Ibid., p. 327.
180 Veysey, *The Emergence of the American University*, 159.
Gilman and his faculty colleagues greeted the news with excitement and caution. Of promise, was the opportunity to use federal funds to expand the school’s faculty, and to these ends, three professorships were added in 1864 in support of agricultural science. Yale hired scientific school graduate William Henry Brewer as Professor of Agriculture, Daniel Eaton as Professor of Botany, and Louis Agassiz protégé Addison Verril as Professor of Zoology. Notwithstanding the land-grant’s role in expanding their ranks, the faculty members remained concerned with state legislative debates and newspaper coverage that interpreted the land-grant’s purpose as supporting manual or vocational education.

Most troubling to Gilman and the faculty of the Sheffield School was the persistent claim that the legislation was intended to create “Agricultural Colleges.” Gilman lamented the inaccurate and incomplete designation ‘Agricultural Colleges’ [that] continu[ed] to gain favor . . . [and] had already led, in some places, to unpleasant discussions with farmers and their friends, who have claimed all the advantages of the grant . . .

Sheffield’s new professor of agriculture, William Brewer, criticized misguided manual education “schemes . . . proposed by educators, enthusiasts, cranks, associations, legislators, etc. . .” No consensus on the purpose of the act was emerging in the 1860s, and before his opposition gained strength, Gilman wanted to rally supporters behind his vision. The Morrill Act was of great

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182 Acts of the Congress of the United States and of the Legislature of Connecticut Pertaining to the National Grant of Public Lands for the Promotion of Scientific Education. (New Haven, CT: Yale University, 1883). Manuscripts and Archives, Yale University Library, Box 52, No. 574.
183 Earle Ross writes in Democracy’s College that Connecticut made “official connection with one of the best developed scientific schools in the county without any expenditure for equipment and maintenance, and the Sheffield Foundation secured essential aid (the federal land-grant) at a formative stage” (p. 74).
184 On the Sheffield faculty reaction to the land-grant bill see True, History of Agricultural Education, 106-108.
185 As Roger William notes, Justin Morrill himself never conceded to the term “agricultural colleges”, which was applied by the legislative clerk. He also states that many land-grant presidents and association leaders were “overwrought” with the public perception that land-grant funds were for establishing “agricultural colleges.” See Williams, The Origins of Federal Support for Higher Education. (University Park, PA: Penn State University, 2000), p. 2.
importance, but to Gilman, the momentous legislation was passed abruptly and without
“thorough discussion in the periodicals of the day [on what was] possible and desirable in the
national education.”\textsuperscript{188} It was this rapid passage that led to the fragmented understanding of the
act’s aims, argued Gilman. It was with a hope of spurring national dialogue, suppressing the
tendency towards agricultural or technical school schemes, and building a consensus around his
ideas that he penned an article for the \textit{North American Review} entitled “Our National Schools of
Science.”

Gilman wanted the land-grant funds invested in publically funded institutions for “the
study of natural science in its application to industry.”\textsuperscript{189} These National Schools of Science
should promote “those branches of useful knowledge which exhibit the Creator’s works in their
true aspects, and connect with material advancement and civilization of mankind.”\textsuperscript{190} For
Gilman, it was not enough to develop new scientific knowledge in laboratories or experimental
farms; the colleges had to connect those findings to economic and social outcomes. He focused
his attention on who would be trained, what would be taught, and what students would pursue
after graduation. Gilman took no issue with agricultural colleges per se, and was not opposed to
their focus on agricultural science or the promotion of American agriculture. In fact, Gilman
expressed appreciation for the agricultural colleges in Pennsylvania, New York, Michigan, and
Illinois, and their efforts to “help the science of agriculture by investigation and experiments.”
His fear was that some within the agricultural college movement preferred manual, vocational
training of a lower grade with the goal of producing practicing farmers.\textsuperscript{191} As Roger Geiger
writes, Gilman wanted to prepare “mangers not workers,” and collegiate instruction of a higher

\textsuperscript{188} Gilman, “Our National Schools of Science,” p. 6.
\textsuperscript{189} Ibid., 16.
\textsuperscript{190} Ibid., p. 9; Roger L. Geiger, “The Rise and Fall of Useful Knowledge,” 160-161.
grade was needed to produce the leaders of American industry, including agriculture. Gilman summarizes with the following:

We do not think it likely or desirable that they [land-grant colleges] should train young men to go back and labor with the hoe or the anvil. They are rather to train men by scientific courses of study for the higher avocations of life, and especially to take charge of mines, manufactories, the construction of public works, the conduct of topographical and other scientific surveys, - to be leading scientific men.¹⁹²

Gilman’s assessment of European higher education and his experience at the Sheffield Scientific School had convinced him that “far greater results . . . in the development of national industry” could be obtained by preparing students for the host of middle class jobs in management or science – “the higher avocations of life.”¹⁹³ He embraced land-grant curricula where mathematics, physical, and natural science of a high intellectual grade provided the basis for an industrial or scientific career. America should mirror France, Gilman argued, where when someone witnessed a great industrial organization in Paris they invariably asked, “Was the manager of this establishment a pupil of the Ecole Centrale des Arts et Manufactures?”¹⁹⁴ If America followed his lead, then Gilman believed the nation’s next great industrial advances would be led by land-grant, “National School of Science” graduates.

The same year Gilman published “Our National Schools of Science,” he invited Justin Morrill to his house to meet with the Sheffield Scientific School faculty to discuss the purpose of the legislation. Gilman was confident that the “Sheffield Scientific School [was] just such an institution as was described in the act of Congress,” but his faculty colleagues wanted further assurances that their present scientific course and high standards would not run afoul of the land-grant law. Morrill pleased those gathered by agreeing with Gilman that the funds were not for

¹⁹² Ibid., p. 27.
¹⁹³ Ibid., p. 27.
¹⁹⁴ Ibid., 23.
creating agricultural schools, nor institutes of low grade, but were intended to make the useful sciences the equal of literary studies. He expressed hope that talented students would pursue useful careers in industry, science, and business instead of the overcrowded professions. Morrill delivered the same message time and again, most famously at Massachusetts College when he stated,

the design was to open the door to a liberal education for this large class . . . offer something more applicable to the productive employment of life. It would be a mistake to suppose it was intended that every student should become a farmer or mechanic.

**The Northeastern Land-Grant College**

The meaning and purposes of the Morrill Act would be debated several times over as each state struggled to develop a college to fit its specific context. The act to establish the Maine State College of Agriculture and Mechanical Arts passed in February of 1865, but it would not open until 1868. During the interim, buildings had to be built, a faculty and president secured, and course of study determined. Even after the death of its leading voice, Ezekiel Holmes, the state agricultural society and agricultural board were actively involved in shaping the direction of the institution. The legacy of the agricultural scientists and their commitment to agricultural chemistry was apparent in the first catalogue.

Each student will devote three hours a day to Analysis, under the direction of the Professor of Chemistry, thus acquiring facility in conducting experiments, and securing a practical knowledge of the methods employed in chemical investigations.

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195 This encounter between Morrill and the Sheffield faculty is provided in True, *A history of agricultural education*, 107-108.
196 Morrill’s remarks were relayed in a letter by Professor Brewer. An excerpt of that letter is provided in ibid., 107-108.
The influence of the agricultural societies’ scientific perspective waned in 1866 when Phinehas T. Barnes replaced Holmes as the most prolific commentator on land-grant education in Maine. His public notoriety advanced his candidacy to the board of trustees, to which he became a leading member. He had been a professor of ancient languages at Bowdoin College, but his passion was “industrial education.” In 1866, Barnes wrote a series of articles in the *Maine Farmer*, in which he declared an answer was needed to three questions: Who are to be educated in the industrial college? How are they to be educated? And, to what ends? His answers to these questions could be summarized as follows: the working masses of the state should be educated by practical, manual training means towards the end of returning more productive laborers to the state. Under the board’s leadership, the college seemed poised to embrace this narrow-gauge vision of mass higher education of a lower grade.

The Morrill Act called for the education of the industrial classes, and to Phinehas Barnes, this was a reference to working people historically barred due to lack of means. He concluded tuition was not the barrier, but subsistence during the college years. The Maine State College must address this problem, he argued, by not only offering free tuition but by providing paid...

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199 Smith, *The First Hundred Years*, p. 7.
200 Barnes settled on the label “Industrial College,” but was hesitant to use the term college. David Smith argues that Barnes believed the designation of “college” would make land-grant schools emulate traditional colleges, and he desired institutions that served a broader clientele with direct vocational outcomes. See Ibid.
201 The articles Phinehas T. Barnes wrote to the Maine Farmer were reprinted in Maine Board of Agriculture. *The Eleventh Annual Report of the Secretary of the Maine Board of Agriculture, 1866*. (Augusta, ME: Stevens & Seward, Printers for the State, 1866), 199-235.
202 Earle Ross describes the two major land-grant visions as “broad-gauge” and “narrow-gauge” in *Democracy’s College*, 88-89. He states, “the national school of science” model was not premised on “training working farmers and mechanics” but for “educating leaders in the sciences.” Those that supported this view supported a “broad gauge” view of land-grant education. In contrast, those that held a “practical training” or “manual training” view of the land-grant colleges wanted to “reduce higher education to its lowest terms and give it the widest extension.” Ross refers to this as the “narrow gauge” view of land-grant education. Other historians of land-grant colleges (especially Gelber, 2010) use the broad/narrow dichotomy as an organizing heuristic in their analysis. Since I believe these labels tend to obscure the complexity of ideas inherent in each camp, I have used them sparingly.
labor. This labor scheme could also serve an educational purpose, as students could actively implement lessons learned in the classroom. Barnes posited that “the mind is best developed, best disciplined and best refined, where there is . . . an equal exercise of the physical powers.”

This “bodily vigor,” according to Barnes, should be gained through laboring in one’s future calling not through the trappings of college “boat clubs” or “ball teams.” He concluded with a warning, Maine would be wise not to mimic the design of the scientific schools of Yale or Harvard; these colleges were simply expanding the sphere of “educated professions” to include engineers, chemists, geologists, and managers of labor. Barnes believed that the Maine State College could fulfill this role, but there were too few positions of this type in the economy and college graduates would soon “glut the market.” Instead, the Maine State College needed to focus on the 50,000 working young people in the state who would profit from scientific and vocational study, who upon graduation could become the most educated, cultured, and productive mechanics, farmers, and skilled workers anywhere.

Phinehas Barnes was offered the presidency and the opportunity to implement his utilitarian vision, but he turned it down. It was a fateful decision that would move Maine away from an industrial education model and towards an emulation of the “National Schools of Science.” Merritt C. Fernald was hired as the first faculty member, and he would become acting president in 1869. Following graduation from Bowdoin College in 1857, Fernald taught in village schools and spent winters in the laboratories of Harvard University’s Lawrence School of

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204 Ibid., p. 229.
205 Cited in Smith, The First Hundred Years, p. 7.
207 Ibid., p. 214.
208 Ibid.
210 Ibid., 10-11.
Science. He was the assistant to Harvard chemist Josiah P. Cooke, author of *The New Chemistry*, and in 1864, he managed his mentor’s laboratory. Fernald retained deep ties with Harvard’s Scientific School. He returned to Cambridge during winter breaks for instruction in the chemistry laboratory and Harvard College Observatory.\(^{211}\) His legacy would be bringing the scientific spirit to Orono, making the laboratory and the college farm sites of experimentation instead of manual training. He was assisted in this effort by farm superintendent Samuel Johnson (Not the Samuel Johnson from Yale), a respected agricultural scientist, practicing farmer, and member of the state agricultural society.\(^{212}\) These two men would constitute the entirety of the faculty when students arrived in 1868.

On September 17, 1868, Maine’s land-grant college was ready to examine its first applicants. Students arrived from across Maine to be tested in Arithmetic, Geography, English, Grammar, History of the United States, and Algebra as far as Quadratic equations.\(^{213}\) An applicant would have needed some preparation in a high school or academy, or several years in a strong district school to have achieved these competencies.\(^{214}\) The quality of the applicants can be deduced by the fact that only four out of twenty-one students passed and were accepted (the class of four would grow to six by the end of the first year).\(^ {215}\) One accepted student, Benjamin Gould, disclosed years later that his common school education had left him ill-prepared for the stiffness of the examination and he was quite surprised at the positive outcome. He stated, “I was admitted . . . for no reason that I know except that the Institution, in order to function, had to

\(^{211}\) For Fernald’s personal biography and academic background see photographed document “Merritt Caldwell Fernald from *History of Penobscot County, 1882*. University of Maine, ORO Special Collections, Box 50, Folder 45.

\(^{212}\) Smith, *The First Century*, 10.

\(^{213}\) *Catalogue of the Officers and Students . . . 1868*, 3.


have pupils . . .” During the first year, these six students enrolled in foundational courses in mathematics, geography, English, and physics, followed by a second year of intensive chemistry study, trigonometry, botany, elements of agriculture, and modern languages. No ancient languages were offered nor required. Under the watchful eye of Samuel Johnson, the students cultivated a profitable farm, which from sale of goods delivered wages to student laborers. The farm was also a site of experimentation, as Professor Fernald would take his chemistry and agricultural chemistry students to the fields to conduct experiments. By 1871, the faculty had expanded to include professors of engineering, natural history, and modern languages. Rev. Charles F. Allen was named president and professor of English literature, allowing Fernald to return to his true passions as professor of chemistry and mathematics. The students could now choose to pursue courses in the Department of Mathematics and Physics, Civil Engineering, Chemistry and Modern Languages, Natural History, or study agriculture and science electives towards a Bachelor of Science degree. Over the first two decades the college had 450 graduates: 175 students graduated with degrees in Civil Engineering, 103 in Mechanical Engineering, 75 with the Bachelor of Science and Literature degree, 57 with Bachelor of Chemistry, and 40 with degrees in Agriculture.

The students that applied to Maine’s state college, passed the examination, and persisted to graduation tended to come from wealthy, agricultural backgrounds (See Figure 3.1, 3.2).

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217 Annual Reports of the Trustees, Farm Superintendent and Treasurer of the Maine State College of Agriculture and Mechanics Arts, 1872. (Augusta, ME: Sprague & Son, Printer to the State, 1872).
218 Smith, The First Century, 11.
219 Ibid., 13.
220 Annual Reports of the Trustees . . . 1872, 8-12.
221 Smith, The First Century, 33.
222 The Maine State College social origin data discussed in this section was developed by cross referencing graduates with federal census data from 1860 and 1870. The complete listing of graduates can be found in
The largest proportion, 43 percent, had fathers employed in some agricultural pursuit, followed by 16 percent from the learned professions, and 14 percent from homes of sole-proprietor merchants or businessmen (See Figure 3.1). Only six percent of students had families with total wealth (real estate + personal assets) below the state mean of $1333.00. In fact, the mean wealth of the first four graduating classes was nine times the state mean at $10,402 (See Figure 3.2). While a few students came from humbler roots as sons of poor farmers and skilled artisans, most students heralded from the middle or upper strata of the income distribution. Tuition was free for Maine residents, but as one student’s expense book shows, annual expenses could reach three hundred and fifty dollars for books, laboratory expenses, room and board, and supplies. Even if a prospective, low-income applicant had the means or opportunity to prepare for the admission exam, subsistence costs could deter attendance. When compared to the average 1870 national salary of a factory worker at $400, a farm laborer at $200, or skilled machinist at $700, it is fair to conclude that children of humbler circumstances would struggle finding $350 to pay ancillary expenses.

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Table 3.1

Maine State College Classes of 1872-1875: Social Origins and Career Trajectory

<table>
<thead>
<tr>
<th>Occupational Sectors</th>
<th>Social Origin</th>
<th>Social Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage</td>
</tr>
<tr>
<td>Professional (Lawyer, Clergy, Medicine, Teaching, Public Official, and Writer/Editor)</td>
<td>6</td>
<td>16%</td>
</tr>
<tr>
<td>Agriculture (Farmer, Farm Manager, Gardener, Horticulturist, Stock Breeder)</td>
<td>16</td>
<td>43%</td>
</tr>
<tr>
<td>Skilled Labor (Self-Employed - Carpenter, Blacksmith, Furnace Repair, etc.)</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Specialist, Technical Worker (Skilled Employment in Industry or Govt. Service: Engineering, Railroad Conductor, Telegraph Relayman, Draughtsman, Draftsman, etc.)</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Business Clerical/Retail (Clerk, salesmen, telegraph operator, etc.)</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Business Managerial (Employed by firm in business operations - management, finance, etc.)</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Business Owner (Merchant, Contractor, Store Owner, Large Firm Proprietor)</td>
<td>5</td>
<td>14%</td>
</tr>
<tr>
<td>Propertyless Laborer</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Unknown</td>
<td>4</td>
<td>11%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>37</td>
<td>37</td>
</tr>
</tbody>
</table>

SOURCES: The Maine State College social origin data was created by cross referencing graduates with federal census data from 1860 and 1870. The complete listing of graduates can be found in Catalogue of the Officers and Students of the State College of Agriculture and Mechanic Arts. Orono, Maine, 1885-6. (Augusta, ME: Sprague & Son, Printer to the State, 1886). Parents’ occupation was recovered in the census taken immediately prior to the students first year. The website ancestry.com was used to retrieve federal census folios.

Table 3.2

Distribution of Maine State College Graduates (1872-75) by Parent’s Real Estate and Personal Property

<table>
<thead>
<tr>
<th>Economic Level</th>
<th>Total</th>
<th>Percentage</th>
<th>Level Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I x &gt; $50,000 [Execs, Owners of Large Firms and Farms]</td>
<td>1</td>
<td>3%</td>
<td>$137,000</td>
</tr>
<tr>
<td>II $5000 to $50,000 [Professions (Lawyers and Doctors), Owners of Firms and Large Farms, &amp; Business Managers]</td>
<td>9</td>
<td>27%</td>
<td>$15,188</td>
</tr>
<tr>
<td>III $2500 to $5000 [Mid-Level Professions (Lawyers, Doctors, Teachers, Clergy, Professors), Small Business Owners, &amp; Successful farmers]</td>
<td>10</td>
<td>30%</td>
<td>$3,400</td>
</tr>
<tr>
<td>IV $1000 to $2500 [lower paid professions (teachers, clergy, artists), high skilled craftsman, medium size farmers]</td>
<td>11</td>
<td>33%</td>
<td>$1,950</td>
</tr>
<tr>
<td>V $500 to $1000 [less prosperous skilled workers, small farmers]</td>
<td>2</td>
<td>6%</td>
<td>$600</td>
</tr>
<tr>
<td>VI $0 to $500 [laborers and propertyless farmers]</td>
<td>0</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL Maine State College Graduates 1872-1875</td>
<td>33</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>College and State Population Estimates of Wealth</th>
<th>Real Estate + Personal Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>1878 Maine State College Class Mean</td>
<td>$10,400</td>
</tr>
<tr>
<td>1878 Maine State College Class Median</td>
<td>$2,350</td>
</tr>
<tr>
<td>1870 Maine State Mean</td>
<td>$1,333</td>
</tr>
<tr>
<td>1870 Orono, Maine, Penobscot County Mean</td>
<td>$1,116</td>
</tr>
</tbody>
</table>

States, June 1, 1870, vol. 3 (Ninth Census). (Washington: Government Printing Office, 1872). The estimates of the means of state and county wealth were calculated as follows: total wealth estimates in the census divided by the number of males over 21 years of age in the state and county. The Maine State College social origin data was created by cross referencing graduates with federal census data from 1860 and 1870. The complete listing of graduates can be found in Catalogue of the Officers and Students of the State College of Agriculture and Mechanic Arts, Orono, Maine, 1885-6. (Augusta, ME: Sprague & Son, Printer to the State, 1886). Parents’ real estate and personal property wealth were recovered in the census taken immediately prior to the students first year at Maine. The website ancestry.com was used to retrieve federal census folios.

While forty-three percent of the students came from agricultural backgrounds, only three students from the first five classes (8 percent) pursued this vocation (See Figure 3.1). These three men did not return home and till the soil, however. George Weston (Class of 1872) became a manager of a large, corporate farm, John Gurney (1874) was florist and ran his own gardening business, and Wesley Webb (1875) became a horticulturalist and farm journal editor.\textsuperscript{225} The typical student received a Civil Engineering or Bachelor of Science degree and matriculated into professional lives as civil or mechanical engineers (nearly 30 percent of all career paths).\textsuperscript{226} This trajectory was followed by students regardless of class background. For example, William A. Allen (1874) was the son of a minister turned chief engineer and master mechanic for a railroad company, Solomon W. Bates, child of a single mother and boarding house manager, became a civil engineer, and Fred W. Holt was raised on a modest farm and emerged as a successful engineer in New Brunswick, Canada.\textsuperscript{227} The wealthiest students had merchant or business owner/manager fathers. Edwin J. Haskell, the richest in the sample ($137,000), was the son of a silk manufacturer who returned home to the family business.\textsuperscript{228} The progeny of other successful businessman, William H. Gerrish (son of a bank president) and Charles F. Colesworthy (son of a book seller) founded their own proprietorships of a grocery and feed store respectively.\textsuperscript{229} There were remarkable stories of social mobility: George H. Hamlin was the son of a carpenter (wealth

\begin{flushright}
\textsuperscript{226} Ibid.
\textsuperscript{227} Ibid.
\textsuperscript{228} Ibid.
\textsuperscript{229} Ibid.
\end{flushright}
of $400) who became a professor at the college, and Wilbur A. Bumps, the destitute son of a farmer and deceased veteran became a wealthy physician.\textsuperscript{230}

The Maine State College Catalogue of 1868 states, “the prominence given to the Natural Sciences, and the practical element associated with nearly all departments of study, cannot fail to render the course especially valuable.”\textsuperscript{231} The amount of coursework in chemistry, engineering, agriculture, and other sciences, as well as the absence of Latin, made the Maine State College of Agriculture and Mechanical Arts different from its literary rivals at Bowdoin or Waterville.\textsuperscript{232}

Student workbooks disclose that instructors diligently connected theory with practical application. For example, one chemistry notebook shows chemical equations and models followed by examples of pasteurization and milk testing.\textsuperscript{233} The students were aware of their trailblazing role in the “new type of education,” which in the words of one Whitman Jordan (class of 1875), “was not much approved by the public or in educational circles.”\textsuperscript{234} When Charles Colesworthy (Class of 1875) and Edmund Abbot (Class of 1876) gave their graduation theses in successive years, the former chose an address on science and the latter on mobility. Colesworthy’s speech was a celebration of the life and contributions of Swiss scientist Louis Agassiz and the promise of scientific discoveries to the advancement of American industry.\textsuperscript{235} In the Abbot thesis, “East or West,” the author contends that with a college degree in hand, the

\textsuperscript{230} Ibid.
\textsuperscript{231} Catalogue of the Officers . . . 1868, p. 6.
\textsuperscript{233} See the chemistry notebook (1874) of Edmund Abbott. University of Maine Archives, The Edmund Abbott Papers, 1872-1877.
\textsuperscript{235} Charles Colesworthy, “Agassiz,” Class Graduation Thesis, 1875. University of Maine Archives. Charles Colesworthy Collection. Colesworthy would apply science to industry throughout his career, first in operating a feed company and then a construction company.
young men must simply choose their career and location, and lay the foundation of a new America. To the students who attended, the Maine State College was a place of scientific study, and to those of modest backgrounds, it provided social mobility into the scientific and technical fields of a new middle class.

By 1875, the leaders of the state agricultural board were left to conclude that the college was not the proper place to produce practical farmers. The narrow-gauge vision of uplifting the Maine farmers through direct collegiate education had little support, overshadowed by a commitment to train “those who can successfully stand interpreters between pure science and useful labor.” In this, the college was quite successful; it had an experimental farm for original research, a science-based curriculum of a high intellectual grade, elevated admission standards, and a host of graduates working as agricultural professors, researchers, and state and federal bureaucrats. And contrary to Phinehas T. Barnes egalitarian vision of masses developing into improved mechanics, farmers, and skilled workers, the Maine College of Agriculture and Mechanical Arts followed the blueprint of the “National Schools of Science.” The college’s modal products were professional scientists, engineers, and technical specialists taking leading roles in agriculture or industrial organizations.

238 Edmund Abbott’s chemistry notebook provides insights into the high intellectual level of the work. It includes complex organic chemistry equations and models alongside their application to milk production. In 1874 the curriculum and admissions standards were enhanced by faculty demands to “bring up the standard,” and allow students the “opportunity to get some general culture.” Maine State College Faculty Minutes, March 3, 10, 1873. University of Maine Archives.
239 Catalogue of the Maine State College, 1885-1886, 34-43.
240 Ibid., 34-43.
The land-grant model emerging in Maine was different from its New England neighbors of Rhode Island and Vermont. In 1863, rural senators in Rhode Island criticized Brown University’s bid to become a land-grant college. They argued Brown’s classical curriculum would not meet the vocational needs of the industrial and agricultural classes.\textsuperscript{241} The senators acquiesced to the plan after an agreement to set aside a number of annual tuition scholarships for students “of the class of persons who otherwise would not have the means of providing themselves with like benefits” to be selected by a Board of Commissioners.\textsuperscript{242} While this deal made Brown the state’s land-grant recipient in 1865, the selection of student scholars was embroiled in partisan politics. As of 1870, no scholarships were disseminated. Rhode Island’s land scrip sold for 42 cents an acre and brought the diminutive annual income of $3000. Much of this return was restricted to the stalled student scholarships, leaving few funds to be invested in new programs.\textsuperscript{243}

In 1867, Ezekiel Robinson became president of Brown and began a good faith effort to restructure curricular offerings to meet the college’s Morrill Act obligations.\textsuperscript{244} After the failure of the Wayland experiment, the trustees were hesitant to change the curricula, but Robinson convinced them that federal compliance required reform. The president appointed Dr. Charles Parsons lecturer of anatomy and physiology within a new academic division, the agricultural and scientific department.\textsuperscript{245} The new department would offer “scientific and practical instruction extending through a period of three years,” and would consist of coursework in “chemistry, physiology, geometry, and algebra . . . analytical chemistry . . . and either chemistry in its

\textsuperscript{243} Bronson, \textit{History of Brown University}, 332.
\textsuperscript{244} Eschenbacher, \textit{The University of Rhode Island}, 7-8.
\textsuperscript{245} Bronson, \textit{History of Brown University}, 369-70.
application to agriculture and the mechanical arts or engineering.” It was also announced that there was to be a special agricultural course of an “intensely practical character” regarding chemistry applications, fertilizers, crop production, etc. for “those who [had] only a brief period to spend in study, before entering upon the work of the farm.” Graduates of the entire course would receive a Bachelor of Philosophy degree, a throwback to the old Wayland reforms. Non-graduates would receive diplomas denoting courses taken and competencies gained. Prospective students to the program would have to pass a less rigorous examination in “arithmetic, algebra, English grammar, and modern geography,” and not the classical requirements of Latin and Greek. A discussion commenced on the feasibility of securing an experimental farm, but the political commitment to student scholarships and Brown’s depressed treasury precluded the possibility of such a purchase.

Senator Nathan Peckham told agricultural society supporters that President Robinson’s reforms did not amount to a proper agricultural education. He feared that if scholarships were ever disseminated, students would be forced to apply them “to a mere classical education.” In 1870, a legislative committee investigating the college proposed a possible solution: allow Brown to use $5,000 of the land-grant funds to purchase an experimental farm and supplement the land-grant funds with a $10,000 state appropriation to provide “such building and apparatus as may be necessary.” But while individual legislators complained about Brown’s failed compliance, a majority caucus could never be formed to expend tax dollars on higher

246 Cited from Brown University catalogue in Eschenbacher, The University of Rhode Island, 8.
The proposal for a $10,000 appropriation disintegrated. President Robinson had seemed willing to develop an agricultural and mechanical arts program in 1872, but by 1875, the grand schemes of the agricultural and scientific department were reduced to a single course – agriculture.\(^{251}\) That same year the description of the agricultural curriculum and program had dwindled to only the following few lines:

> The instruction in Agriculture will embrace Zoology and Comparative Anatomy, illustrated by specimens from the Museum of Natural History, with field excursions for practical instruction in obtaining and preserving specimens, and in Taxidermy.\(^{252}\)

If the state was not willing to supplement the federal funds, Brown saw neither the student demand nor political incentive to spend its own resources on a major curricular overhaul. The college did broaden their program in Civil Engineering to three years, expanded its chemistry offerings, and enhanced the entrance requirements and academic rigor of the Bachelor of Philosophy degree.\(^{253}\) However, the Ph. B. program now consisted of the literary course with science electives, and bypassed the more costly additions of agricultural science and an experimental farm proposed in 1867.\(^{254}\) The college found it exceedingly difficult to create any semblance of an agricultural program without the farm. For example, a catalogue from this time explained that students would gain practical experience in agriculture by witnessing the “description of various agricultural implements.”\(^{255}\) In 1875, the student scholarships were finally released for distribution, but due to political patronage calculations, half went to the

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\(^{250}\) Eschenbacher, *The University of Rhode Island*, 9.

\(^{251}\) *A Catalogue of the Officers and Students of Brown University, 1875-76* (Providence, RI: J. A. and R. A. Reid, 1875)

\(^{252}\) Ibid., p. 41.


\(^{255}\) Ibid.
wealthiest part of the state – the city of Providence - not for the “underrepresented classes” identified in 1865.256

In Vermont, the agricultural societies had missed their opportunity to form an independent agricultural college in 1863, unable to raise $100,000 required by the legislature.257 This led the University of Vermont to inherit the state’s land-grant college largely by default. Under the leadership of President Matthew Buckham, the university boldly asserted that “the term ‘agricultural colleges,’ as applied to the national institutions [land-grant colleges], is unofficial and misleading . . . and agriculture was only one of many subjects grouped under a convenient designation.”258 Instead, Buckham declared defiantly, it was only the responsibility of the university to instruct students in the “branches of learning related to agriculture.”259 Experimental farms were unnecessary and wasteful, the administration argued, for a faculty member could simply explain experiments to farmers which they could conduct themselves. He added, “The results would be more trustworthy because of the variety of soil, location, and climate” throughout Vermont.260 James Angell, Buckham’s predecessor, had a broad, “National School of Science” conception of the Morrill Act, hiring chemistry professor Peter Collier and natural history professor George Perkins.261 It was his intention to pursue a professorship of agricultural chemistry to spearhead agricultural research and education at the university, but the

256 Eschenbacher, The University of Rhode Island, 13.
258 Biennial report of the trustees of the University of Vermont and State Agricultural College for 1873-74, p. 9. University of Vermont Special Collections. Open Stacks.
259 Ibid., pp. 9-10.
260 Ibid., p. 11.
plan was stillborn when Angell accepted the presidency of the University of Michigan. Buckham would not create the position of professor of agriculture until 1886. He was apparently confident that Professor Collier’s chemistry courses, Professor Perkins’ courses in botany and zoology, and offerings in anatomy and physiology in the medical school made the university compliant with the land-grant act.

The absence of an agricultural professor and a department (not formed until 1888) made scientific courses the elective appendages to the classical core, not part of a cohesive scientific program. By 1874, sixty-one of the undergraduates were in the classical course, six in the chemistry course, and none in agriculture. As a Greek Scholar, President Buckham had a great affinity for the classical course and wanted to provide an A.B. degree of superb quality that would lure Vermonters away from Harvard, Yale, and most importantly Middlebury. He reported favorable progress in 1873 stating, “We think that our standard of classical attainment will compare favorably with that of any American college . . . and is being steadily raised year by year as fast as we can secure improvement in the style of preparation.” Buckham defended high academic admissions standards for all students, especially in maintaining Latin and Greek requirements. He concluded,

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264 Ibid.
266 See the discussion of “Vermont Students in Other Colleges” in Biennial report of the trustees of the University of Vermont and State Agricultural College for 1873-74, 4-5. University of Vermont Special Collections. Open Stacks. For the historical context of the state rivalry between UVM and Middlebury see P. Jeffrey Potash, “Years of Trial: Religion, Money, War, Fire, and the Competition with Middlebury,” in The University of Vermont: The First Two Hundred Years, ed. Robert V. Daniels (Burlington, VT: University of Vermont, 1991), 34-47.
267 Biennial report of the trustees . . . 1873-74, pp. 7-8.
Those looking forward to farming as a pursuit could not do better than to combine the practical experience they get at home with the scientific knowledge [in chemistry, zoology, botany, and mathematics] that they get at the college.\textsuperscript{268}

Ancient language requirements, high tuition, no model farm, and no agricultural program were not the ingredients to attract either aspiring farmers or agricultural scientists. The president concluded that if the state wanted the University of Vermont to do more, then they would have to pay for it. He declared that agricultural societies and legislators had numerous education ideas, “but [had] not helped by one acre or one cent.”\textsuperscript{269} The situation was a bit different in engineering education with the hiring of Volney Giles Babour as professor of civil engineering. The new engineering program included study in chemistry, modern languages, physics, mathematics, surveying, mechanical drawing, geology, metallurgy, and applied mechanics.\textsuperscript{270} In 1874, eleven students were enrolled in the engineering program, and after only three years of operation, it had graduated “fifteen young men, most of whom [occupied] important positions on various railroads or in connection with other public works.”\textsuperscript{271}

Matthew Buckham’s close friend Justin Morrill agreed with his contention that land-grant colleges were not to have a narrow, vocational purpose.\textsuperscript{272} Buckham, however, was not a scientist like Evan Pugh nor was the college supported by an agricultural society base lobbying for a scientific agenda. Buckham viewed the University of Vermont’s land-grant options as either (a) appending some basic sciences to the classical curriculum as part of a liberal education, or (b) providing manual farm training. As a classical scholar he embraced the former and openly criticized the latter, and thought little of pursuing the third alternative inherent within the

\textsuperscript{268} Ibid.
\textsuperscript{269} Ibid.
\textsuperscript{270} For the engineering course of study see Catalogue of the University of Vermont and State Agricultural College, 1873-1874, University of Vermont Special Collections. Open Stacks.
\textsuperscript{271} Biennial report of the trustees. . . 1873-74, p. 13.
\textsuperscript{272} See for example Justin Morrill to Matthew Buckham, October 7, 1873. University of Vermont Special Collections. Matthew Buckham Papers.
“National Schools of Science” model: maintaining high intellectual standards, creating spaces for scientific research and discovery, producing scientists who could translate new discoveries into practice, and creating leaders of modern industrial enterprise. Besides its foray into engineering education, the University of Vermont remained conservative in its traditional orientation towards the classical curriculum, the learned professions, and to literary and cultural education. A reality that was quite apparent when the president lectured audiences on the need and utility of ancient languages in speeches like “The Less Obvious Benefits of a Liberal Education” and “Dead Languages Forsooth!”273 In the history of land-grant colleges in the Northeastern United States, Matthew Buckham plays the part of Noah Porter. He holds strong to the view that the college course was “to give power to acquire and to think, rather than to impart special knowledge or special discipline.”274 There were perhaps no stranger bedfellows than a land-grant college and an antiquarian.

Much clearer land-grant visions, based largely on the “National School of Science” model, were provided in New Hampshire, Pennsylvania, Massachusetts, and Connecticut. The influence of former German university students Evan Pugh, John A. Porter, Ezekiel Dimond, and William Clark promoted European-styled scientific education at their respective land-grant colleges. As previously stated, Pugh and Porter established a scientific basis for the Pennsylvania Agricultural College and the Sheffield Scientific School on the eve of the passage of the land-grant act. And Dimond and Clark had a similar influence on the New Hampshire Agricultural and Mechanical College and the Massachusetts Agricultural College. Dimond was appointed as the New Hampshire College’s first faculty member in 1868. He quickly established a makeshift

273 Matthew Buckham, Dead Languages Forsooth! (Burlington, VT: Free Press, 1908); Matthew Buckham, “Some of the less obvious benefits of a liberal education.” This is a handwritten speech delivered at an unknown time and place but is available in the University of Vermont Special Collections. Mathew Buckham Papers.
274 Noah Porter quote is reprinted in Vesey, The Emergence of the American University, p. 23-4.
chemistry laboratory which he filled with apparatus and specimens that he brought from Europe and loaned the institution his own private funds to secure an experimental farm.\textsuperscript{275} Committed to the academic standards he developed at Göttingen, he denounced using land-grant funds for manual training instead of science. Dimond noted that institutions of that stripe would dwindle into . . . apprentice-shops where boys would be blindly taught the manual arts of agriculture and manufacture, as monkeys are taught to perform antics in order to procure copper for their masters.\textsuperscript{276}

He wished to recreate an American school of science in New Hampshire, but it remained a parochial affair in its early years. However with the much-needed assistance of two $10,000 state grants and a private bequest of $25,000 in 1870, the college was able to construct a chemical laboratory, classrooms, and a natural history museum. This was followed by a donation to compensate President Dimond for his farm purchase, and a third state appropriation to build a dining hall and dormitory building to fit 135 students.\textsuperscript{277}

A year before Evan Pugh and Samuel Johnson left for graduate study in Germany, William Clark was returning to Massachusetts with his Ph.D. in chemistry from Göttingen. Clark had graduated from Amherst College in 1848, where he partook in a rich scientific culture at the hands of Silliman protégés President Edward Hitchcock and Professor Charles U. Shephard. He returned from abroad thoroughly trained in agricultural science and was named a member of both the Massachusetts and New Hampshire Agriculture Boards. The Massachusetts Agricultural College already had two presidents before the first classes arrived, and when the second leader stepped down in 1866, William Clark was the unanimous choice.\textsuperscript{278} Soon after, faculty members

\textsuperscript{275} Babcock, \textit{History of the University of New Hampshire}, 15-6.
\textsuperscript{276} Quote reprinted in ibid, p. 20.
\textsuperscript{277} Ibid., 15-46.
\textsuperscript{278} The educational background of President Clark is available in Cary, \textit{The University of Massachusetts}, 35-6.
were hired to join Clark. The first was Levi Stockbridge, a practicing Amherst farmer, who was secured as farm superintendent. He was charged with supplementing scientific study with practical farm instruction during students’ weekly hours of required farm work. Clark and Stockbridge were joined by two other Amherst professors, Henry Goodell for modern languages and E.S. Snell in mathematics, and a professor of veterinary science was added the following year. The implementation of a rapid building program, the cost of running the experimental farm, and the expense of a comprehensive academic regime, left the college with regular budget deficits, even after the state legislature appropriated over $140,000 in the first few years to supplement the land-grant funds.

Notwithstanding the financial challenges, thirty-four young men arrived at the Massachusetts Agricultural College and presented for admission on October 1, 1867. In the next few days, late arrivals would swell the number to fifty-six. The students were given a three hour examination in English grammar, geography, mathematics, and algebra to quadratic equations. President Clark reviewed the results and announced that all of the students had been accepted although some with conditions. The college was already running a $10,000 debt and the president was eager to enroll a large class of tuition paying students. Unlike at Maine where free tuition prevailed, the annual fee in Massachusetts would reach $75.00. Historian Harold Cary states that a series of editorials and advertisements had suggested that the Massachusetts Agricultural College was “designed primarily for those who could not afford to attend the private colleges.” He argues that this marketing campaign brought a “heterogeneous group, some

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279 Ibid., 36-7.
280 Ibid., 53-69.
281 Ibid.
dressed in faded, home-made clothes and some in broad cloth and in fine linens . . . and three-fourths [with] some experience on a farm. “282

The picture Cary presents of the first class of the Massachusetts Agricultural College is awash in the imagery of Earle Ross’ Democracy’s College. It depicts students of little means gaining college access at the hands of a benevolent president and mixing with more affluent peers from urban locales. 283 A closer look at the census data for the class, however, suggests a more complex picture. It is true that most of the entering students heralded mainly from a farming background at 54 percent, joined by 9 percent with skilled laborer father, and only one student coming from the traditional origination of the professional class (Figure 3.3).

Table 3.3

<table>
<thead>
<tr>
<th>Occupational Sectors</th>
<th>Social Origin: ALL ENTERING STUDENTS</th>
<th>Social Destination: GRADUATES ONLY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage</td>
</tr>
<tr>
<td>Professional (Lawyer, Clergy, Medicine, Teaching, Public Official, and Writer/Editor)</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Agriculture (Farmer, Farm Manager, Gardner, Horticulturalist, Stock Breeder)</td>
<td>31</td>
<td>54%</td>
</tr>
<tr>
<td>Skilled Labor (Self-Employed - Carpenter, Blacksmith, Furnace Repair, etc.)</td>
<td>5</td>
<td>9%</td>
</tr>
<tr>
<td>Specialist, Technical Worker (Skilled Employment in Industry or Govt. Service: Engineering, Railroad Conductor, Telegraph Relayman, Draughtsman, Draftsman, etc.)</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Business Clerical/Retail (Clerk, salesman, telegraph operator, etc.)</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Business Managerial (Employed by firm in business operations - management, finance, etc.)</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Business Owner (Merchant, Contractor, Store Owner, Large Firm Proprietor)</td>
<td>6</td>
<td>11%</td>
</tr>
<tr>
<td>Propertyless Laborer</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Deceased</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Unknown</td>
<td>11</td>
<td>19%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>57</td>
<td>100%</td>
</tr>
</tbody>
</table>

SOURCES: The Massachusetts Agricultural College social origin data was created by cross referencing graduates with federal census data from 1860 and 1870. The complete listing of the first graduates and non-graduates can be found in Cary, The University of Massachusetts, 212. Parents’ occupation was recovered in the census taken immediately prior to the students first year. The website ancestry.com was used to retrieve federal census folios. The students’ career path was retrieved from The

282 A description of the first class is given by Harold Cary in his chapter “The Pioneer Class.” Quotes in Cary, The University of Massachusetts, p. 38.

283 See Ibid.
However, an analysis of wealth estimates illustrates that most of the students were children of wealthy farmers (See Figure 3.4). The class’ average wealth was $10,150, which was nearly double the average wealth estimate for the state. This is not surprising since the yearly cost of attendance at the Massachusetts Agricultural College was quite steep: $75.00 tuition, $30.00 room, $50.00 board, and between $250 and $350 in annual expenses for books, lights, laboratory fees, and supplies.²⁸⁴

Table 3.4

<table>
<thead>
<tr>
<th>Economic Level</th>
<th>Total</th>
<th>Percentage</th>
<th>Level Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I x &gt; $50,000 [Execs, Owners of Large Firms and Farms]</td>
<td>1</td>
<td>2%</td>
<td>$19,000</td>
</tr>
<tr>
<td>II $5000 to $50,000 [Professions (Lawyers and Doctors), Owners of Farms and Large Farms, &amp; Business Managers]</td>
<td>21</td>
<td>50%</td>
<td>$12,009</td>
</tr>
<tr>
<td>III $2500 to $5000 [Mid-Level Professions (Lawyers, Doctors, Teachers, Clergy, Professors), Small Business Owners, &amp; Successful farmers]</td>
<td>9</td>
<td>21%</td>
<td>$4,055</td>
</tr>
<tr>
<td>IV $1000 to $2500 [lower paid professions (teachers, clergy, artists), high skilled craftman, medium size farmers]</td>
<td>8</td>
<td>19%</td>
<td>$2,159</td>
</tr>
<tr>
<td>V $250 to $1000 [less prosperous skilled workers, small farmers]</td>
<td>1</td>
<td>2%</td>
<td>$1,000</td>
</tr>
<tr>
<td>VI $0 to $250 [laborers and propertyless farmers]</td>
<td>2</td>
<td>5%</td>
<td>$175</td>
</tr>
<tr>
<td>TOTAL Massachusetts Agricultural College Entering Class 1867</td>
<td>42</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

1867 Entering Class Mean $10,150
1867 Entering Class Median $5,355
1870 Massachusetts State Mean $5,355
1870 Amherst, Hampshire County Mean $2,233

SOURCES: Francis A. Walker, The Statistics of the Population of the United States, June 1, 1870, vol. 1 (Ninth Census). (Washington: Government Printing Office, 1872), 23; Francis A. Walker, The Statistics of the Wealth and Industry of the United States, June 1, 1870, vol. 3 (Ninth Census). (Washington: Government Printing Office, 1872). The estimates of the means of state and county wealth were calculated as follows: total wealth estimates in the census divided by the number of males over 21 years of age in the state and county. The Massachusetts Agricultural College social origin data was created by cross referencing original attendees of the first class with federal census data from 1860 and 1870. Parents’ real estate and personal property wealth were recovered in the census taken immediately prior to the students first year at Massachusetts Agricultural College. The website ancestry.com was used to retrieve federal census folios.

This annual cost would have been prohibitive for students at the bottom of the economic distribution, since student labor was an unpaid educational requirement (the students could get

wages for overtime, but with six hours of weekly required labor per student it is unlikely that
much paid work was needed on campus). Enough students were late or defaulting on their
payments that in the following year’s advertisements, the president warned, “tuition and room
rent must be paid in advance at the beginning of each term and bills for board, fuel and washing
at the end of each term.” The college would maintain above average levels of student
retention, as 56 students in 1867 dropped to 28 by graduation. But while departure was the
result of several factors (including academic and discipline dismissals), the fact that average
wealth estimate of the students that persisted was twice that of those that left suggests a financial
cause as well. Class enrollments would remain around 20 throughout the first decade, until the
implementation of tuition scholarships increased the size four-fold.

The post-graduation trajectories of the Massachusetts Agricultural College students are
similar to the pattern in Maine (See Figure 3.3). Over 50 percent of the first class of students was
of agricultural origins, yet only 4 of 28 graduates pursued careers in farming. And although only
one student had a professional father, 23 percent would achieve social mobility into the
professional classes as lawyers, professors, and doctors. Some of the most successful early
graduates included sons of both wealthy and middle strata farmers who used their scientific
education in chemistry, mechanics, and physics to pursue plentiful and lucrative opportunities in
American industry. Lewis A. Nichols, son of a middle-income farmer ($2500 wealth estimate),

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285 W.S. Clark, “Massachusetts Agricultural College.” Massachusetts Ploughman and New England Journal of
Agriculture (August 8, 1868): 27, 44, p. 3.
286 See The Catalog of Graduates and Former Students of the Massachusetts Agricultural College.
287 The average wealth of graduates and non-graduates was tabulated by comparing graduates and non-graduates
with federal census data from 1860 and 1870. The complete listing of the first graduates and non-graduates can be
ascertained by cross referencing the list of attendees in Cary, The University of Massachusetts, 212 with the
graduates in The Catalog of Graduates and Former Students of the Massachusetts Agricultural College.
288 The Catalog of Graduates and Former Students of the Massachusetts Agricultural College.
289 The social origin and trajectory data was tabulated by cross referencing graduate data from The Catalog of
Graduates and Former Students of the Massachusetts Agricultural College with federal census folios available on
graduated from the agricultural college in 1871 and was hired by the Central Massachusetts Railway Company. The railroad officials soon appointed Nichols to supervise the construction of a twenty-five mile track. It was during this time that he developed a prototype of steel tape to replace the chain material that was often used in civil engineering operations. In the 1890s, he would found and become president of the Chicago Steel Tape Company—a corporation that would persist over seventy years.\textsuperscript{290} William Wheeler, the son of a wealthy farmer ($15,000) also graduated in 1871. After accompanying President Clark to Imperial Japan to create that nation’s first agricultural college and serve as its second president, the young Wheeler returned to Massachusetts and to American industry. He founded the Wheeler Reflector Company to manufacture a commercial lighting system for cities which would replace Boston’s gas lamps. His company would also be a leading supplier of railcar and engine lighting for several decades.\textsuperscript{291}

Contrary to the speculation of newspaper columnists, the agricultural college did not produce many practicing farmers during its first decade.\textsuperscript{292} But in addition to graduating “officers of industry” like Nichols and Wheeler, the Massachusetts Agricultural College also produced leaders of agricultural education and science. President Clark’s chemistry courses and the research on the farm and in the laboratory inspired several students to follow in his footsteps. Some notable examples include John Washburn, the first college president of the Rhode Island Agricultural College, Charles Flagg the president of the board of trustees of the Rhode Island

\textsuperscript{290} The biographical information on Nichols is available in Thomas B. Poole, \textit{Manufacturing and Wholesale Industries of Chicago}. (Chicago, Il: Thomas O. Poole Company, 1916), 287-8. His social origin data was retrieved from federal census folios available on www.ancestory.com.

\textsuperscript{291} The biographical information on Nichols is available at the University of Massachusetts Special Collection and University Archives. The information is the biographical sketch accompanying the William Wheeler Paper, 1900-1910. His social origin data was retrieved from federal census folios available on www.ancestory.com.

\textsuperscript{292} \textit{New England Farmer} and \textit{Massachusetts Ploughman} editorials make regular reference to the scientific, practicing farmers coming out of the college.
Agricultural College, William Brooks, director the Massachusetts Agricultural Experiment Station, and Horace Stockbridge the first president of North Dakota Agricultural College. The college would also graduate Herbert Myrick, writer, agricultural journal editor, and leading instigator for land-grant college reform. It would be Myrick’s experience at the Massachusetts Agricultural College that would convince him that independent land-grant colleges were needed throughout New England, and he would make The New England Farmer the mouthpiece of that movement.

The institution that would give the fullest expression to higher education for science, industry, and national progress was Cornell University. The rise of Cornell University also added a new dimension to the public debate over the purpose of land-grant colleges: the promotion of social mobility. While Justin Morrill and Daniel Coit Gilman tended to characterize the land-grant colleges in macroeconomic terms – highlighting the promise of industrial advance and increased labor productivity – Ezra Cornell focused on individual opportunity within the new economy. The subject for improvement for Morrill and Gilman was the nation-state and industry, for Cornell, it was the student. As a businessman in a science and technology field (telegraph), Cornell was aware of the burgeoning opportunities available to those who could understand and wield the power of scientific knowledge. Further, his meteoric rise from humble origins instilled the belief that social mobility was not only possible with hard work but would define the age. As he wrote to his nephew in 1855, “I hope that if you decide to go to school that you will make up your mind to spend your time profitably, remember knowledge is power.”

To Cornell, the economic rewards of employment in the careers of the new economy were not

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293 The Catalog of Graduates and Former Students of the Massachusetts Agricultural College.
294 Ezra Cornell to Franklin Cornell. Cornell University Library, The Division of Rare and Manuscripts Collections. Ezra Cornell Papers, Box 16, No. 13.
reserved for a privileged aristocracy, but for any individual willing to work for their personal growth and advantage.\textsuperscript{295} His higher education philanthropy was premised on giving any student willing to work - no matter their means, background or gender - the opportunity to pursue useful training. Cornell wrote to his granddaughter,

I hope you and your brothers and your cousins and a great many more children will go to [Cornell University] when they get large enough and will learn a great many things that will be useful to them and make them wise and good women and men.

Cornell’s letters reveal a personal connection with the early land-grant students that was absent in much of the broader public discourse, and show his commitment to provide the next generation with the educational means to find personal and professional success.

In August of 1866, the demise of the People’s College as New York’s land-grant institution was assured, and Ezra Cornell wrote to his wife Mary that he felt “for the first time that the destiny of the Cornell University was fixed, and that its ultimate endowment would be ample for the vast field of labor it embraces . . .”\textsuperscript{296} Similarly to Justin Morrill, Francis Wayland, and Daniel Coit Gilman, the founder saw in Cornell University the potential for the development of the economy and the nation. Cornell states, “. . . [The university] will become a power in the land which will control and mold the future of this great state, and carry it onward and upward in its industrial development . . .”\textsuperscript{297} Whereas Gilman’s “National Schools of Science” model called the production of technical specialists and managers not workers,\textsuperscript{298} Cornell wanted useful

\textsuperscript{296} August 4, 1866, Ezra Cornell to Mary Ann Cornell. Cornell University Library, The Division of Rare and Manuscripts Collections. Ezra Cornell Papers, Box 28, No. 6.
\textsuperscript{297} Ibid.
\textsuperscript{298} See Geiger, “The Rise and Fall of Useful Knowledge,” 160-162.
education diffused across the labor spectrum. The mechanic should become a skilled mechanic, the farmer a scientific farmer, and the clerk a businessman. Since Cornell was not the beneficiary of university study, he did not reserve a special place for the high intellectual study of the basic sciences and theoretical knowledge. If a trade, vocation, specialty, etc. could be infused with scientific principles and practiced on campus, then to Cornell, interested students should be able to prepare to those ends at his university.

Ezra Cornell imagined that his university would be accessible to the poorest student of the industrial and agricultural classes and offer useful study that could fuel individual ambition and mobility. Prior to the opening of the university he declared in the New York Tribune, “I will assure the boys that if they will perform a quarter as much labor as I did at their ages . . . they will find no difficulty paying their expenses at Ithaca.” After the piece went to press, President Andrew Dickson White’s office was inundated with letters from parents and children inquiring if the university could advance them beyond their modest or meager station. One young clerk from Westchester, New York wrote, “[I want] to rise above the clerk’s desk, and am willing to work for my education . . . if I can earn enough to pay expenses while studying.” In another letter, a father asks if there would be a place at Cornell for his son: “I am informed that your institution gives the opportunity to become educated to young men who have only their hands . . . my son has learned the trade of cabinet maker . . please advise.” Some of these students presented for admission in the first years unprepared academically and lacking financial resources. Ezra Cornell would take a special interest in them. When one struggled at the university due to

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301 Letter from Westchester, New York to Andrew Dickson White, August 17, 1868. Andrew Dickson White Papers. Division of Rare and Manuscript Collections, Cornell University. Box 8 mss.
302 Rev. H. Redfold (?) to Andrew Dickson White, Andrew Dickson White Papers. Division of Rare and Manuscript Collections, Cornell University. Box 8 mss.
insufficient preparation, Cornell would personally intervene and insist to the administration and faculty that the young men be retained.\textsuperscript{303} Cornell wanted to supply ample employment opportunities on campus that could pay reasonable wages to needy students. He saw himself in the children of farmers and workers, and wanted his university to provide them an opportunity – like he had - to climb the social and economic latter.\textsuperscript{304}

The intricacies of a proper scientific curriculum were of a small concern to Ezra Cornell and he worried little about maintaining high admission standards. He held a practical view of science and viewed it as a means to an end. This perspective put him at odds with President Andrew Dickson White, who wanted to make Cornell a first-class university of a high intellectual order.\textsuperscript{305} White’s vision required stiff admission standards, literary and scientific studies not vocational training, and more time spent on academic study and less on labor.\textsuperscript{306} In 1868, the future of the university required a workable resolution of these diametric positions. What brought the issue to the fore was Ezra Cornell’s interpretation of “mechanical arts” education and his intention to build chair and shoe factories on campus. It was his contention that labor in the factory would sharpen the technical competencies of aspiring mechanics, while deferring the cost of university attendance.\textsuperscript{307} White told Cornell that the factories could not be “combined with an educational institution without ruining both . . .”\textsuperscript{308} The purpose of the land-grant act was not to provide “practical training” for laborers, White argued, but to offer a liberal and scientific education that would

\textsuperscript{303} Bishop, \textit{A History of Cornell}, 121-127.
\textsuperscript{304} Ibid., 80; 121-127.
\textsuperscript{305} Bishop, \textit{A History of Cornell}, 40-42.
\textsuperscript{306} At a basic level, White supported a “broad gauge” view and Cornell a “narrow gauge.”
\textsuperscript{308} Ibid., p. 371.
White writes in his autobiography that Cornell’s factory idea was “a danger which demanded delicate handling,” and “a scheme [that] contravened the Act of Congress.” White contends that after a spirited debate, Cornell “yielded to [his] view . . . as much as it must have cost him to give up what had become a darling project . . .”

Ezra Cornell’s capitulation on his factory plan, removed the last vestiges of a “manual training ideology” from the university. Historian Morris Bishop argues that Ezra Cornell regarded mechanical arts as the “apotheosis of manual training,” but Andrew Dickson White conceptualized mechanical arts as an intellectual enterprise. Students worked in the “mechanical laboratory” not a “workshop,” they produced mechanical and scientific models not shoes, and student labor was reformulated to “have a decidedly educational value.” President White noted that several trustees and Ezra Cornell worried that graduates would “only [be] able to draw figures and pictures . . . [and no little] of practical methods and processes . . .” And thus the university was committed to ensuring that graduates possessed an intellectual and practical connection to their industrial, mechanical, and scientific pursuits. The following comment by White typifies this perspective:

Graduates of the scientific and mechanical departments must have a direct, practical acquaintance with the construction and use of machinery before they [can] become

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309 Andrew Dickson White to Henry Barnard, Dec. 24, 1870. Cornell University Library, Division of Rare and Manuscript Collections, Andrew Dickson White Papers, Box 10.
312 Andrew Dickson White to Henry Barnard, Dec. 24, 1870.
leaders in great mechanical enterprises . . . they must be thoroughly scientific men and practical mechanics.314

To these ends, the university established a temporary wooden laboratory, a machine shop, and purchased a power-lathe. In 1869 under the direction of Professor John Morris, students in the engineering departments began testing classroom knowledge in the “mechanical laboratories,” as well as constructing apparatus and mechanical models.315 These efforts caught the attention of university trustee and Ezra Cornell’s telegraph associate Hiram Sibley, who asked to inspect the fledgling projects in the mechanical arts. The following year, Sibley announced his intention to construct a building for the mechanical arts “with lecture-rooms, drafting-rooms., modeling-rooms, foundries, and shops for ironwork [and] woodwork. . . ,” and to furnish the expensive apparatus.316 The Sibley College of the Mechanical Arts became a national leader in mechanical arts, a distinction that was apparent at the Centennial Celebration of 1876. Students exhibited their potential as leaders of mechanical and industrial enterprises, displaying models they designed and constructed, including “a steam-engine, power-lathes, face-plates, and various tools of precision.”317

Ezra Cornell and Andrew Dickson White tempered each other’s visions and produced a unique higher education program. Unencumbered, Cornell’s ideas might have brought a limited trade school to Ithaca, whereas if White had his way, the university may have been purely theoretical and disconnected from practical application in the economy. When high intellectual training and practical application were combined, they found a ready market in the “higher practical vocations” of the new middle class. Cornell University would train the industrial

314 The first part of the quote is from White, The Autobiography, p. 372, the second part is from Andrew Dickson White to Henry Barnard, Dec. 24, 1870.
316 Ibid., p. 373.
317 Ibid.
leaders, the managers, and the technical specialists, who would guide the development of American labor and enterprise. The Cornell graduate would possess the disciplinary knowledge at the foundation of new industrial careers, along with the practical experience demanded by employers. In a lecture before a group of prospective college students, White gave a lecture entitled “How to Choose a College?” that conveyed this mission. He stated,

College graduates are only about one-half of one percent of the population but hold sixty percent of the important and influential positions. This percentage of leading men is undoubtedly to be increased now that there is much more instruction in applied science, and in branches that bear directly, not merely upon what are known as the learned professions, but a multitude of other callings.\footnote{Andrew Dickson White, “How to Choose a College?” Delivered at Youth Convention. Cornell University Library, Division of Rare and Manuscript Collections, Andrew Dickson White Papers, Box 168.}

Students that deigned one of these “influential positions” in the burgeoning economy could now turn to their land-grant college. Children of the farm and the workshop who had gained the necessary preparation could now attend a land-grant college at a reasonable fee with the assistance of paid labor. Unless they aspired to be a minister of a professional, the progeny of the industrial and agricultural classes may have previously scoffed at the fixed curriculum and cultural refinement of the literary or denominational colleges. But here was a new type of higher education that held the promise of the economic and cultural rewards of social mobility.

After Ezra Cornell’s death in 1874, the poorest students with less academic preparation lost the protection of the founder. The admissions standards were elevated during the first decade, and by 1878, only two members of the graduating class were prepared in a district school.\footnote{Statistics of the Class of 1878 – Cornell University. Cornell University Library, Division of Rare and Manuscript Collections. Cornell University Commencement Programs and Class Printed Materials, 1869-1998, 37-8-346. Additional information on graduates is available in the class register in Waterman Thomas Hewett, \textit{Cornell University: A History, Vol. 4.} (New York, NY: The University Publishing Society, 1905), 63-611.} The remainder had attended high schools or private academies and heralded from ten
different states and three countries. As Figure 3.5 illustrates, smaller proportion of Cornell graduates came from agricultural backgrounds (31 percent) compared to their land-grant neighbors in Maine and Massachusetts. Twenty-three percent of graduates were progeny of business owners or merchants, 21 percent were from the professional classes, and 10 percent were children of skilled laborers.

Table 3.5

<table>
<thead>
<tr>
<th>Occupational Sectors</th>
<th>Social Origin</th>
<th>Social Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional (Lawyer, Clergy, Medicine, Teaching, Public Official, and Writer/Editor)</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Agriculture (Farmer, Farm Manager, Gardener, Horticulturalist, Stock Breeder)</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>Skilled Labor (Self-Employed - Carpenter, Blacksmith, Furnace Repair, etc.)</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Specialist, Technical Worker (Skilled Employment in Industry or Govt. Service: Engineering, Railroad Conductor, Telegraph Relayman, Draughtsman, Draftsman, etc.)</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Business Clerical/Retail (Clerk, salesman, telegraph operator, etc.)</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Business Managerial (Employed by firm in business operations - management, finance, etc.)</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Business Owner (Merchant, Contractor, Store Owner, Large Firm Proprietor)</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Propertyless Laborer</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Unknown</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>61</td>
<td>61</td>
</tr>
</tbody>
</table>

SOURCES: Cornell University student social origin data was created by cross referencing 1878 graduates found in Statistics of the Class of 1878 – Cornell University. Cornell University Library, Division of Rare and Manuscript Collections. Cornell University Commencement Programs and Class Printed Materials, 1869-1998, 37-8-346 with federal census data from 1870. Social destination data gathered from the class register reprinted in Waterman Thomas Hewett, Cornell University: A History, Vol. 4. (New York, NY: The university Publishing Society, 1905), 63-611. In cases where the register did not list vocation, federal census folios from 1880, 1900, and 1910 were consulted for occupations. The website ancestry.com was used to retrieve federal census folios.

The Cornell University graduates came from substantially more wealth than peers at the other land-grant colleges (See Figure 3.6). The average wealth of the class of 1878 was $31,000, nearly ten times the state mean of $3,565. The typical student came from a wealthy professional or farming background with average assets and real estate valued at $16,874. What skews the

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320 Ibid.
321 Social origin data was compiled by cross referencing graduates of the class of 1878 in ibid. with 1870 federal census folios. Federal census folios were accessed on www.ancestory.com.
economic picture of the Cornell class is the presence of ultra-wealthy individuals that are not present at Maine or Massachusetts. For example, future Lt. Governor of Kentucky, Samuel Ballard, was the son of a lawyer and real estate mogul with the highest wealth estimate of $325,000. And following him was Ellwood Burdsall. His father’s bolt and screw company became a public company in 1866 and the largest in the country, bringing the family assets over $300,000.322

Table 3.6

<table>
<thead>
<tr>
<th>Economic Level</th>
<th>Total</th>
<th>Percentage</th>
<th>Level Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I x &gt; $50,000 [Execs, Owners of Large Firms and Farms]</td>
<td>7</td>
<td>12%</td>
<td>$178,716</td>
</tr>
<tr>
<td>II $5000 to $50,000 [Professions (Lawyers and Doctors), Owners of Firms and Large Farms, &amp; Business Managers]</td>
<td>29</td>
<td>51%</td>
<td>$16,874</td>
</tr>
<tr>
<td>III $2500 to $5000 [Mid-Level Professions (Lawyers, Doctors, Teachers, Clergy, Professors), Small Business Owners, &amp; Successful farmers]</td>
<td>13</td>
<td>23%</td>
<td>$3,783</td>
</tr>
<tr>
<td>IV $1000 to $2500 [lower paid professions (teachers, clergy, artists), high skilled craftsman, medium size farmers]</td>
<td>6</td>
<td>11%</td>
<td>$1,875</td>
</tr>
<tr>
<td>V $250 to $1000 [less prosperous skilled workers, small farmers]</td>
<td>2</td>
<td>4%</td>
<td>$400</td>
</tr>
<tr>
<td>VI $0 to $250 [laborers and propertyless farmers]</td>
<td>0</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL Cornell University Graduating Class of 1878</td>
<td>n= 57</td>
<td>100%</td>
<td>$31,000</td>
</tr>
</tbody>
</table>

Cornell and NY State Population Estimates of Wealth

<table>
<thead>
<tr>
<th>Real Estate + Personal Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>1878 Cornell Class Mean</td>
</tr>
<tr>
<td>1878 Cornell Class Median</td>
</tr>
<tr>
<td>1870 New York State Mean</td>
</tr>
<tr>
<td>1870 Ithaca New York, Tomkins County Mean</td>
</tr>
</tbody>
</table>

SOURCES: Francis A. Walker, The Statistics of the Population of the United States, June 1, 1870, vol. 1 (Ninth Census). (Washington: Government Printing Office, 1872), 23; Francis A. Walker, The Statistics of the Wealth and Industry of the United States, June 1, 1870, vol. 3 (Ninth Census). (Washington: Government Printing Office, 1872). The estimates of the means of state and county wealth were calculated as follows: total wealth estimates in the census divided by the number of males over 21 years of age in the state and county. The Cornell University social origin data was created by cross referencing the 1878 graduates with 1870 federal census folios. The website ancestry.com was used to retrieve federal census folios.

Similar to the pattern across the Northeast, only seven percent of students from farming backgrounds chose to pursue agriculture (See Figure 3.5). Instead, 64 percent entered into the professions or “the higher practical” vocations of the new economy. Numerous examples abound

322 Ibid.
of students from modest backgrounds taking advantage of a Cornell education to find career success and social mobility after graduation. In becoming the state’s land-grant college, Cornell promised to offer full scholarships for each New York county, a gift that enabled poorer students to pursue higher education. One example was James Dyson, the orphaned son of a Mill Worker with $800 of wealth, who labored as a campus carpenter to supplement his scholarship funds. He would become a successful civil engineer and U.S. mine inspector in Colorado. Thomas Merrill came to Cornell from Maine, the son of a merchant and steamship driver with $1700 in wealth. Merrill would become the largest manufacturer of lumber in his home state and buyer of timberlands throughout the West. Edward Green never knew his father and his mother and grandmother ran a boarding house in upstate New York valued at $20,000. After studying architecture at Cornell, he moved to Buffalo and designed over 200 buildings for that city and another 200 from Maine to Indiana. He is still regarded as one on America’s greatest architects. Several graduates found the railroad industry in demand of their skills and talents: Wallace Jay Wilcox (son of a shoemaker) became a master mechanic and engineer, Ben Johnson (son of a brick maker) the superintendent of the Mexican railroad and the chief designer of the Havana railroad, and William Beahan (son of a wealthy farmer) a civil engineer and international railway builder. The graduates also left an important mark on various colleges and universities. Cornelius Thatcher (son of a farmer) became a professor of mathematics in New Jersey, Harvey VanNorman (son of a farmer) a teacher at Mansfield Normal School, Charles Marx (son of German immigrant journalist) professor of civil engineering at Cornell and the University of Wisconsin, and Albert William Smith (son of a furnace repairman), who after working as foreman and supervisor in the Syracuse area engine industry, became the first mechanical engineering professor at Stanford University.\footnote{Social destination data gathered from the class register reprinted in Waterman Thomas Hewett, \textit{Cornell}}
The presence of several female undergraduates made Cornell University looks quite different from the other Northeastern land-grant colleges. In 1867, Ezra Cornell wrote the following to his granddaughter Eunice Cornell:

I want to have girls educated in the University as well as boys, so that they may have the same opportunity to become wise and useful to society that the boys have. I want you to keep this letter until you grow up to be a woman and want to go to a good school where you can have a good opertunity [sic] to learn, so you can show it to the President and Faculty of the University to let them know that it is the wish of your Grand Pa, that girls as well as boys should be educated at the Cornell University.  

There were six young women of wealthy backgrounds who graduated in Cornell’s class of 1878: Bessie Bell Dewitt (daughter of a saloon keeper), Lizzie Jane Giddings (daughter of a lawyer), Margaret Hicks (unknown origin), Lisette Jones (daughter of a businessman), Kit McElbright (daughter of a physician), and Ruth Putnam (the daughter of famous American publisher George Palmer Putnam). After graduation, Giddings, Jones, and McElbright married and chose not to pursue a career outside the home. Dewitt married and became a school teacher at a private academy. Margaret Hicks was the first woman with an architecture publication in America after completing her thesis for her B.S. in 1880, and would have a successful career translating texts from English to German and pursuing feminist causes. And Ruth Putnam published numerous history books, becoming America’s leading historical scholar on the Netherlands. She was made a member of the Dutch Society of Letters of Leyden.

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University: A History, Vol. 4, 63-611. In cases where the register did not list vocation, federal census folios from 1880, 1900, and 1910 were consulted for occupations. The website ancestry.com was used to retrieve federal census folios.

324 February 17, 1867, Ezra Cornell to Eunice Cornell. Ezra Cornell Papers (Digital Archives). Box 29, Folder 3.

325 See the survey of alumnae in Charlotte William Conable, Women at Cornell: The Myth of Equal Education. (Ithaca, NY: Cornell University Press, 1977). Social origin data was created by cross referencing women with 1870 federal census folios. The website ancestry.com was used to retrieve federal census folios. For more information on Ruth Putnam and her family see Ezra Greenspan, George Palmer Putnam: Representative American Publisher. (University Park, PA: The Pennsylvania State University Press, 2000).
The students that attended Cornell University during its first decade became scientific and societal leaders of a rapidly changing country. As was the case at land-grant colleges throughout the region, science became central to a Cornell education, and many of its graduates made scientific application the hallmark of their profitable and fulfilling careers. In 1869, students gathered at an Ithaca inn to toast the end of the first term and to share glad tidings before the Christmas recess. They toasted Ezra Cornell and cursed his detractors as beholden to traditional education and outmoded thinking, and celebrated their role as pioneers of a new education for a modern world. These revelers would become the leaders of America’s industrial advance, its progress, its perfection. And it was with this in mind, that one student raised his glass and recited a poem which could summarize the reform movement at the origin of the land-grant college:

For many years throughout the land
There’s been an urgent, loud demand
By men of science, and by those
Who wish to learn what science shows
For means to spread with light and power
Results of study, with the hour
To keep advanced the people’s mind
And other truths yet to find
Through now, in answer to the call
That comes from earnest men and all
Who seek for science some redress
For her neglect, the greatest stress
Is laid on branches which pertain
To active, useful toil and gain

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326 Burial of Trigonometry At Cornell, Record of this Proceeding, The Class Cupper and Exercises of ’72, (December 21, 1869), p. 15, Retrieved from Cornell University Archives, Cornell University commencement programs and class printed materials, 1869-1998.
The land-grant college in the Northeastern United States originated from a confluence of forces for higher education reform – the advancement of agricultural science, the cultivation and dissemination of American science in the tradition of the European Universities, the improvement of agricultural and industrial industries, and the production of graduates to fill emerging careers in the “higher practical vocations” of engineering, mining, industrial management, architecture, etc. Gentleman from the agricultural society movement, expatriate European scholars, businessmen philanthropists, and statesman had different motivations but all were served by elevating science in American higher education. Ezekiel Holmes and Frederick Watts wanted the growth of agricultural science and the advancement of farming practice, Evan Pugh and John Norton the creation of American Schools of Sciences that supported original research and dissemination, Ezra Cornell and Joseph Sheffield hoped to offer poor youth social mobility into careers in the new economy, and Justin Morrill wanted to protect and develop American industry. Prior to 1873, this coalition dominated the land-grant college movement in the Northeastern United States, resulting in the creation of institutions that largely embraced the broad gauge, “National School of Science” agenda of Daniel Coit Gilman. But in their midst, conflicting perspectives were already appearing. Phinehas T. Barnes offered an alternative, narrow gauge vision, seeking to extend the benefits of the Morrill Act to working masses of his state. However in the 1860s, little political support or pressure was offered from regular farmers and workers to advance such an agenda. This would all change in 1873, when a great recession and the rise of the grange would bring regular farmers into the debate over land-grant colleges, and cause institutional reformations throughout the region.
CHAPTER FOUR

The Land-Grant Reformation in the Northeastern United States, 1873-1894

“A separate and distinct agricultural and mechanical college will be for the highest and best interests of the farming industry of our state . . . increasing the love and desire of our boys and girls for their homes . . . We believe that the mind and the eye should be educated together . . [so] the great mass of boys and girls in Vermont . . . can go out into the world and grasp the practical lessons in the various avocations of life.” – Alpha Messer, Grand Master of the Vermont State Grange\(^1\)

\[\begin{align*}
\text{Co-operation – not strife} \\
\text{Is the divine law of life.} \\
\text{Not to stand alone is vital,} \\
\text{Get together is immortal.} \\
\text{Instead of weakness, separately,} \\
\text{Strength in oneness with Infinity -} \\
\text{For every soul} \\
\text{Is part of the Whole.}
\end{align*}\]

- Herbert Myrick, A Poem to Farmers for Mutual Co-operation\(^2\)

Introduction

Herbert Myrick was born in Arlington, Massachusetts in 1860. He was the fourth of seven children in the household of Dr. Henry L. Myrick, an Episcopal minister and 1852 graduate of Harvard Divinity School.\(^3\) Rev. Myrick moved regularly between parishes, uprooting his family on numerous occasions. Herbert’s childhood was spent in Connecticut, Maine, and Massachusetts, and at the age of sixteen, his family moved west to Colorado and then on to Wyoming.\(^4\) The elder Myrick was never content with pulpit responsibilities, spending considerable time writing (he purchased the \textit{Ft. Collins Standard} in Colorado) and advocating


\(^{4}\) See James Terry White, \textit{The National Cyclopedia of American biography: being the history of the United States as illustrated in the lives of the founders, builders, and defenders of the republic, and of the men and women who are doing the work and moulding the thought of the present time, Volume 25} (New York, NY: J.T. White, 1967).
for pet political projects like prison reform and criminal rehabilitation. In 1877, he was elected to the Wyoming territory’s legislature and two years later became speaker of the house.

Wyoming was not yet a hotbed of populist activity, but Herbert Myrick still had many opportunities to observe his father’s encounters with Cheyenne railroad officials and local ranchers. He got to witness the local Farmers’ Alliance organize for mutual protection against banks and railroads, and by the age of eighteen, Myrick claims he was a “student of mutual cooperation.”

In 1878, the eldest Myrick son, Lockwood, graduated from the Massachusetts Agricultural College. Herbert Myrick followed in his brother’s footsteps and enrolled in 1879. He excelled in his scientific studies, and after graduating in 1882, published books on hops, turkeys, and sugar cultivation. However, Myrick wrote most prolifically on the agricultural industry writ large and the plight of the individual farmer specifically. His experience in Wyoming convinced him that farmers would only be protected from exploitation and degradation if they organized. The year of his graduation, he was in Springfield, Massachusetts organizing that community’s first co-operative bank (a building and loan association). After attending Boston University for some advanced scientific study, Myrick turned to experimenting with the newest cultivation methods on his farm and writing articles for agricultural journals. By 1884, he was devoted completely to the agricultural press, and at only twenty-six years of age, he

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5 Ibid.
8 See “The Author of This Work” biography in Herbert Myrick, Co-Operative Finance.
10 Ibid.
11 See “The Author of This Work” biography in Herbert Myrick, Co-Operative Finance.
12 See White, The National Cyclopedia.
became the editor of the *New England Homestead* and president of the Phelps Publishing company soon after.13

Figure 4.1. Photograph of Herbert Myrick, Editor of the *New England Homestead*

The agricultural societies and gentlemen farmers that had led the efforts between 1840 and 1870 for scientific agriculture, education, and rural reform were waning in influence. A new generation of voices, some first generation land-grant graduates, would emerge as the leading reformers during the 1880s and 1890s. Herbert Myrick was one such individual. He would use his knowledge of agricultural science and farmer cooperation to help direct New England’s new political force – the grange. The grange membership was much broader than the old agricultural societies, cutting across class and gender lines, and dwarfing the size of their more elite predecessors.15 Members of the order included large and small plot farmers that were

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13 Ibid.
interconnected through a network of local and state granges.\textsuperscript{16} The grange hall became a site of mutual support, social activity, and learning.\textsuperscript{17} It was here that farmers debated the state of their vocation and the future of their rural communities. Journal editors like Myrick reported on the activities of local orders, published farmers’ letters on topics of the day, and provided commentary to spur debate on important issues. Grangers were asked, “How shall boys be kept on the farm?” and “What makes for a proper agricultural education?”\textsuperscript{18}

The symbiosis between the grange and the agricultural press would be significant in the movement to reform land-grant education in the Northeastern United States.\textsuperscript{19} The “National School of Science” modeled-institutions as described in chapter three in New York, Maine, and Pennsylvania faced regular granger criticism for failing to produce enough practicing farmers, maintaining lax student labor requirements, exacerbating rural outmigration, and persisting with high admission standards. These institutions would work to accommodate granger concerns; however, bringing grangers onto boards of trustees, hosting grange meetings on campuses, and undertaking a decade of reform to better meet the needs of farmers and rural communities. These colleges all developed sound agricultural departments with model farms, led by competent agricultural professors, and incorporated new outreach programs as well as short summer courses for farmers. Men like Isaac Roberts of Cornell were hired and developed successful relationships with grange leaders, committing agricultural departments to the concept of extension. In contrast, Brown University, Yale’s Sheffield Scientific School, and the University of Vermont faced the

\textsuperscript{17} Nordin, \textit{Rich Harvest: A History of the Grange.}
\textsuperscript{18} Editorials of this stripe appeared regularly in the \textit{Massachusetts Ploughman, The New England Homestead, The New England Farmer,} and the \textit{New York Cultivator.}
\textsuperscript{19} As explained in chapter 2, New Jersey had a politically disinterested grange. Rutgers faced little pressure for reformation during this movement and is an outlier case in the region.
most vehement criticism for their agricultural education shortcomings, including their lack of campus farms, high admission standards, and a dearth of graduates practicing farming. The grange and agricultural press embarked on a two decade campaign of land-grant reformation in Connecticut, Rhode Island, and Vermont. And sitting at the nexus of this regional upheaval was Herbert Myrick. His office at the Phelps Publishing company became a hub of land-grant reform activity, where Myrick would urge cooperation and political action amongst his 50,000 journal subscribers. With his assistance, the grange achieved political victories in creating new land-grant colleges in Connecticut and Rhode Island. And the land-grant status of the University of Vermont would only be saved at the last moment by the intervention of the father of land-grant colleges, Justin Morrill.

This chapter details this land-grant reformation in the Northeastern United States. It is argued that the broad-gauge, “National School of Science” model that was propagated in the first decade of land-grant colleges became odious to farmers for failing to produce practicing farmers, exacerbating rural outmigration, and minimizing practical farm training. The rise of the grange after the depression of 1873 produced a political organization that would challenge the region’s original land-grant model. Granges and farm journals called upon land-grant colleges to directly address the needs of the agricultural class, and to become institutional bulwarks against a national realignment of labor from agricultural to non-agricultural employment. Grangers demanded that land-grant colleges cease expediting mobility from the farm to white-collar jobs and instead improve the profitability and desirability of farm life. This chapter looks at three

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20 The author has uncovered numerous letters between Herbert Myrick and grange leaders regarding land-grant reformation. Including correspondence discussing land-grant reformation strategy between Myrick and key instigators like Vermont Grange Master Alpha Messer, Charles Flagg of Rhode Island, WW Cooke of Vermont, and Hale of Connecticut.
cases of grange-college encounters in Connecticut, Rhode Island, and Vermont that epitomize the land-grant reformation in New England.

**The Road to a Land-Grant College at Storrs, Connecticut**

As stated in chapter three, the dominant land-grant philosophy within agricultural societies was that agricultural education should have a scientific basis and train an elite core of agricultural leaders for careers as professors, bureaucrats, researchers, and farm managers. This coexisted with a minority perspective (represented in the preceding chapter by men like Phinehas T. Barnes of Maine), which proposed that the farming masses could profit from scientific study and land-grant colleges should seek to graduate scientifically-minded, practicing farmers.\(^{21}\) Grange activists would take reform further, roundly criticizing the “book-learning” and theoretical instruction that had come to dominate agricultural higher education.\(^{22}\) Instead, they promoted manual training and accorded a lesser role to scientific education in chemistry, biology, botany, and natural philosophy.\(^{23}\) In 1876, the National Grange created a committee to investigate land-grant colleges to determine “what success they have attained in the prosecution of work proposed to them in the law creating them,” and specifically acquire in the successes in “fitting [students] for the high callings of farmers.”\(^{24}\) However in two New England states - Connecticut and Rhode Island - state granges would not become fully active until the middle of the 1880s. This would leave the first act of reformation – the founding of the Storrs Agricultural School in 1881 - in the hands of agricultural scientists of the minority view who wanted to bring the benefits of science to common farmers.

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22 Gelber, *Academic Populism*, 41-56
The Storrs Agricultural School was founded in 1881 by the Connecticut legislature after accepting a gift of 170 acres of land and $5000 from brothers Augustus and Charles Storrs. The Storrs brothers had an upbringing reminiscent of Ezra Cornell. They were born in 1814 and 1817, respectively, in the silk-making community of Mansfield, Connecticut to Royal Storrs, a local farmer of modest means. The brothers both attended the local district school and Charles Storrs, the younger of the two, tried his hand at teaching after turning eighteen. By the 1840s, they were both working as retail merchants selling Mansfield silk to buyers throughout New England. In 1850, the now wealthy Charles incorporated a manufacturing firm in Brooklyn, which failed during the Panic of 1854. As evidence of his extreme wealth, he assumed the debt and paid all liabilities of $300,000. Charles quickly rebounded that same year when he and Augustus founded a commission company in New York. From humble beginnings on a Connecticut farm, the Storrs brothers had become fashionable upper-class merchants in New York City. After Charles Storrs retired in 1879, he invited his brother to join him in several philanthropic endeavors, most notably his gift to the state for an agricultural school. The complier of Charles Storrs’ posthumous memoirs reveals his subject’s motivation to establish the school:

Having experienced the intellectual privations that are too commonly incident to farm life . . . Charles determined that when he was ready to help his fellow men he would make it his duty to establish an agricultural school for those who should desire and purpose to fit

25 Background information on Royal Storrs was gathered from Federal Census Folios accessed on www.ancestry.com.
27 Ibid.
28 Ibid.
29 This biographical information is available in Laura Carter Holloway, Famous American fortunes, 261-270. Also see Charles Storrs, The Storrs Family. (New York, NY: Printed Privately, 1886), 266-7, and Walter Stemmons, Connecticut Agricultural College – A History. (Storrs, CT: Connecticut Agricultural College, 1931), 24-5.
themselves for agricultural pursuits . . . The school was designed to help worthy lads, not only to be farmers in the best sense of the word . . . but be well-informed men and useful citizens.\textsuperscript{30}

Whether it be from guilt for abandoning the family farm or a genuine desire to provide people of similar circumstances a chance for a better life, the “men on the move” of the nineteenth century – Storrs, Cornell, Sheffield, etc. - proved critical to the establishment of new departures in American higher education predicated on expanding access.

The Board of Trustees held its first meeting on April 22, 1881 and delegated the organization of the institution to the following appointees: Theodore Sedgwick (T.S.) Gold, the founder of the state agricultural society and proprietor of the Cream Hill Farm School, fellow society member and regular agricultural writer J. B. Olcott, and Yale professor Dr. Samuel Johnson. T.S. Gold was born in 1818, the son of Samuel Gold, a physician and gentleman farmer in West Cornwall, Connecticut. T.S. Gold was prepared for college at a local academy and went on to Yale where he graduated in 1838. \textsuperscript{31} Having garnered an early interest in the science of agriculture from his father, it is not surprising that he was drawn to the lectures of Benjamin Silliman. He was so taken with the elder Silliman that he stayed at Yale for a year of graduate work to study natural history.\textsuperscript{32} When his father retired from the practice of medicine, he and T.S. founded the Cream Hill Agricultural School in 1845 on the family farm in West Cornwall. The institution was the ideal type of the agricultural society vision, offering study in the elementary and scientific branches taught in the best academic institutions . . . [including the] scientific and practical instruction in agriculture and horticulture, embracing the most

\textsuperscript{30} Holloway, \textit{Famous American fortunes}, p. 269.
approved methods of tillage, rearing of stock, cultivation of trees . . . chemical analysis of soil, etc.\textsuperscript{33}

To these ends, the Cream Hill students cultivated a garden of 130 square yards and were given manual instruction in general farming practice, soil cultivation, and the rearing of stock.

The school was always intended for pre-college adolescents “to be fitted for college, or any of the useful pursuits of life.”\textsuperscript{34} Over time, however, pupils were only interested in the college preparation component of the curricula and the name was changed to the Cream Hill Academic School.\textsuperscript{35} The school closed in 1869, but T.S. Gold’s influence went far beyond this one venture. He had been one of the founders of the state agricultural society, edited the \textit{New England Homestead} between 1855 and 1861, served as secretary of the State Board of Agriculture, and was a member of the board of control of the Connecticut State Experiment Station in New Haven.\textsuperscript{36} There was no more respected member of the old guard of agricultural educators and reformers than T.S. Gold, and it was no surprise when he and his long-time friend and society collaborator (J.B. Olcott) were tapped to organize the Storrs School.

The establishment of the agricultural school was a combined effort of the old agricultural society gentry and the first generation of land-grant and scientific school graduates. The appointment of Sheffield Scientific School professor Samuel Johnson brought Connecticut’s most respected agricultural scientist into the fold. Johnson and Gold had an amicable relationship from their common efforts with the New Haven experiment station, and sat upon their task with optimism and vigor. The committee quickly considered previous agricultural education plans on

\textsuperscript{33} True, \textit{History of Agricultural Education in the United States}, p. 38.
\textsuperscript{34} Ibid.
\textsuperscript{35} Ibid., 38-9.
\textsuperscript{36} Osborn, \textit{Men of mark in Connecticut}, 373-375.
which to base their scheme for the Storrs School.\textsuperscript{37} It was clear that Storrs was not to be a scientific school, for Yale’s scientific department was well positioned to train scientists and agricultural leaders. Instead, the men shared the Storrs brothers’ commitment to bring scientific and practical education to common farmers. Gold notes several sources of inspiration. First, in 1855, Daniel Coit Gilman had presented a paper to the Connecticut Agricultural Society entitled “Scientific Education, the Want of Connecticut” in which the author called for schools that could bring scientific study to farmers “so farming need no longer be regarded as an empirical profession, dependent for its success on fortunate guesses and traditional experience.”\textsuperscript{38} The second tract of inspiration was Yale Professor John A. Porter’s “A Plan of an Agricultural School,” that explained a course of study where students gained instruction in practical and scientific agriculture “embracing all the sciences upon which the industry depends for its success.”\textsuperscript{39} Thirdly and most prominently, Gold’s now defunct Cream Hill School experiment, with its proposed mixture of scientific courses and practical farm training, served as the most formative example of what the Storrs school could become.

The committee, however, needed something tangible. The Cream Hill School had been defunct for a decade, and its practical education component in agriculture had proved a failure. After reviewing catalogues of various institutions, they concluded that the farm school in Guelph, Ontario was a place “growing farmers [by] combining farm work and farm study.”\textsuperscript{40} The explicit purpose of what was to become the Ontario Agricultural College was the “union of the

\textsuperscript{37} Stemmons, \textit{Connecticut Agricultural College}, 37.
\textsuperscript{39} Ibid., p. 3.
\textsuperscript{40} See “Farm School,” \textit{The Courant}, Unknown date, 1881. Clipping was retrieved in the University of Connecticut Archives. T.S. Gold Collection, Box 6, Folder 90.
scientific and the practical . . . [uniting] the skill of intellect and the skill of the hand.”

The institution was funded by the Canadian government and was predominately in the hands of émigré Scots who had studied the science and practice of agriculture at the University of Edinburg. Stricken by the same ailment that afflicted Cornell University, however, the Guelph school was nearly ruined in 1874 when it made the unfortunate decision to hire Henry McCandless as principal. His disastrous leadership of the agricultural program at Cornell and subsequent forced resignation was a mild affair compared to the drumming he received in Canada. With the same aristocratic pretensions he had exhibited in Ithaca, McCandless mocked the clothing and manners of the country youth as “unbefitting the respectable attire of the proper British gentleman farmer . . .” His arrogance and treatment of students as servants brought revolt, as did rumors of drunkenness, sex, and voyeurism. The entire class penned a letter to the provincial leadership demanding his removal, prompting an emissary to visit Ithaca for more information on McCandless. Assured of what the investigation would bring, McCandless resigned for the second time in six years. He left Guelph, more defiant than embarrassed, unable to find a market for his vision of aristocratic agriculture.

The Guelph school had made a strong recovery by the time the Storrs committee made its visit in 1881. The principalship had fallen to former University of Edinburg student and University of Toronto graduate Willliam Johnston. An excellent organizer, Johnston reworked the academic program towards what he called “the golden mean” between literary studies and

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42 See “Farm School,” *The Courant.*
45 Letter is reprinted in Ibid., p. 24-5.
apprenticeship.\textsuperscript{46} He viewed farming as a “business, science, and trade,” and proposed a three-tier program for the students. There was to be a three-year course in which students would gain a “thorough knowledge of scientific agriculture,” a two-year course that taught the practical business of farming and its underlying scientific principles, and a one-year course where students “would assist on the Model Farm, and attend first year lectures on practical agriculture.”\textsuperscript{47} The degree-seeking three year students would be ready to enter careers in academia, government, or experiment stations, the two-year students to run profitable, scientific farms, and the one-year students would become more productive on their own farms or while tilling others. The school was to be open to students who had completed elementary school (the equivalent to the U.S. common schools).

The visitors were duly impressed by their time at Guelph. They met with professors of chemistry, botany, and breeding, and toured the model farm, the chemistry laboratory, library, and the stables. A commentator for the \textit{Connecticut Courant}, who was along on the trip, was taken with the large number of boys who attended the school “mixing farm work and farm study as though they enjoyed it.”\textsuperscript{48} Gold returned with a confidence that had been shaken after the Cream Hill School’s failure, and a belief that scientific agriculture could be taught to young boys and produce practicing farmers.\textsuperscript{49}

\textit{A Prospectus for the Storrs Agricultural School} was finalized in July 1881 that revealed a plan reminiscent of the two-year program in Guelph. The document states the school was

\textsuperscript{46} Ibid., p. 28.
\textsuperscript{47} Ibid.
\textsuperscript{48} “Farm School,” \textit{The Courant}.
\textsuperscript{49} Gold, “A History of the Connecticut Agricultural College.”
established for the education of boys whose parents are citizens of this State, in such branches of Scientific Knowledge as shall tend to increase their proficiency in the business of agriculture.  

The two year classroom component required courses in general and agricultural chemistry, natural philosophy, farm mechanics, geometry, surveying, botany, geology, stock breeding, zoology, farm accounts, and English. On the farm, the students were to be taught “practical applications of the principles learned in the classroom . . . [so] that each boy [could] become skillful in the management of a farm.” To carry out this plan, the board of trustees hired two men to pursue the “golden mean” between the scientific and the practical. “Practical farmer and gardener” Samuel Mead was hired as principal and professor of practical agriculture and Henry Armsby was secured to teach “agricultural chemistry and other sciences.”

Professor and Vice-Principal Henry Armsby brought excellent credentials and a strong record of scholarship. His appointment signaled that the Storrs school trustees were serious about offering students a thorough scientific education. In 1871, Armsby was a member of the first graduating class of the Worcester County Free Institute of Industrial Science (later called Worcester Polytechnic College), one of the nation’s original polytechnic colleges. With his Bachelor of Science degree in hand, he studied with Samuel Johnson and received his Bachelor of Philosophy degree at the Sheffield Scientific School in 1874. Armsby followed in the footsteps of the previous generation of expatriate scholars, when he went to Möckern, Germany to conduct research at that nation’s leading agricultural experiment station. He published a scholarly paper on fertilizers and soil under the mentorship of Gustav Kahn entitled “Ueber die

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51 Ibid.
52 Stemmons, Connecticut Agricultural College, 39.
54 Ibid.
Einwirkung der Schwefelsaure auf Phosphorsauren Kalk” (The Influence of Sulfuric Acid upon Calcium Phosphate). While at Möckern, Armsby observed Kahn’s path-breaking research on animal digestion and metabolism, an experience that would influence his decision to pursue this line of research in future years. He returned to the United States in 1876 to accept an appointment to teach chemistry at Rutgers College, but his focus remained on his research, and he published a second paper during this time entitled “Ueber das Absorptionsvermogen des Bodens fur Bases” (The Power of the Soil to Absorb Bases). After only a year in New Brunswick, Armsby was recruited by Samuel Johnson to become the state chemist for the Connecticut State Agricultural Experiment Station. He served in this role for four years, during which time he pursue advanced study at Yale and received his Ph.D. in 1879. Samuel Johnson and T.S. Gold worked closely with Armsby at the experiment station and were well aware of his abilities and tireless energy. He was no doubt the organizing committee’s obvious choice for professor of agriculture and Vice-Principal.

After less than a year, Principal Samuel Mead retired from his post, and Henry Armsby became acting principal for the 1882-1883 academic year. At the start of that semester, Armsby appeared before the state agricultural board to give “a plain, unvarnished account of what the Storrs Agricultural School has done, is doing, and aims to do . . .” He began by differentiating the Storrs Schools from other institutions: “it is not a scientific school in the common acceptation of the term. Its pupils study science, not for its own sake, but for the uses they can make of it in

55 Jöns August Fries, Henry Prentis Armsby. (State College, PA, 1923).
56 Ibid.
one occupation.” 60 This did not mean that the scientific study would be of a low grade however, for Armsby declared “any school for farmers’ boys . . . which ignores the natural sciences is fatally defective.” 61 Therefore, the student would take chemistry and become acquainted with the “composition of soil, air, plant, animal, and fertilizer” in the chemical laboratory. 62 The study of physics would be of equal importance, as the student would learn “the general laws governing the construction and use of simple machines, the laws of pressure and flow of water, of atmospheric pressure and its application, and of light, sound, and electricity.” 63 Students would also study living organisms in biology, botany, and zoology, and the “scientific side” of cattle feeding and breeding. While Armsby contended the Storrs School was not a college or scientific school, it was also not intended to teach the branches of the common school for those “not smart enough to go to a college or scientific school.” He exclaimed, “While it does not reject any faithful student of average capacity, it is not, and will not be made, an asylum for incapables.” 64

One biographer argues that Armsby viewed his years (1881-1883) at the Storrs Agricultural School as nothing more than “marking time.” 65 In fact, historians have largely ignored his brief tenure in Storrs as insignificant transition in his career. 66 Yet Armsby had no reason to leave his post at the Connecticut Experiment Station, and if he was looking for a change, a man of his credentials would have been welcome as a professor or researcher at numerous institutions. His speech before the agricultural board in 1882 suggests that he was invested in creating something new in higher education. Armsby’s address reveals a belief that

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60 Armsby, “The Storrs Agricultural School,” p. 3.
61 Ibid., p. 3.
62 Ibid., p. 4.
63 Ibid., p. 5.
64 Ibid., p. 4.
66 See Fries, Henry Prentis Armsby and Cowan, “Henry Prentiss Armsby.”
larger numbers of young men could both comprehend and profit from advanced scientific study. The graduates of Storrs (and similar institutions) would then be ready consumers for the research emerging from state experiment stations. He envisioned agricultural education in Connecticut as a three-legged stool: the Sheffield Scientific School would produce the leading agricultural scientists, researchers, and bureaucrats, the Experiment Station would employ these scientific leaders to create and disseminate new knowledge in agricultural science, and the educated farmers from Storrs would be able to understand and efficiently implement these new ideas.67

Henry Armsby and freshly appointed Sheffield School Ph.D. and Biology and Botany Professor Benjamin Franklin Koons may have wanted to offer a strong dose of scientific study, but it soon became clear that the fourteen and fifteen year old students were far from prepared. Over one-fourth of the 42 young men entering during those first three years had to begin in the preparatory class (only one out of eleven of this group persisted to graduation), and 42 percent of the first three entering classes remained to graduate.68 Ninety percent of the students heralded from Connecticut and most of these students were from the two counties closest to Storrs.69 With its modest entrance requirements, the Storrs school was attracting a local student body of limited academic preparation that required substantial remediation. Having realized he had inherited the leadership of an institution more akin to a weak high school than a new departure in scientific agriculture, Armsby jumped at an offer to head the agricultural experiment station at the

67 See Armsby, “The Storrs Agricultural School.”
68 See University of Connecticut, Registrar's Office Records. University of Connecticut Archives, Christopher Dodd Research Center, Series IV.
69 Ibid.
University of Wisconsin in 1883.\textsuperscript{70} Professor B. F. Koons was named principal, and there he would remain for the next fifteen years.\textsuperscript{71}

There was more economic diversity amongst the student body at the Storrs Agricultural School compared to the land-grant colleges in the Northeastern United States (See Figure 4.1). While the largest proportion of students (39 percent) came from the second-highest income classification (mean of $18,709), the Storrs school was distinct in that that 25 percent of students came from the fourth economic level (mean of $1,710) and eighteen percent from the lowest economic category of propertyless laborers and farmers (See Figure 4.1).\textsuperscript{72} Several factors led to the high numbers of students from the lower strata of the income distribution. First, the expenses at Storrs were more modest than at agricultural or land-grant colleges: tuition was $25.00 per year and board was $3.59 per week.\textsuperscript{73} Second, for those students with the least means, the school catalogue notes that “arrangements are made for remitting this charge in worthy cases, making tuition free.”\textsuperscript{74} Thirdly, the act of incorporation set a low bar for admission: students had only needed to be fifteen years of age, have good moral character, read and write English, have a familiarity with simple arithmetic, and a basic knowledge of American geography.\textsuperscript{75} With such a basic examination, the student did not need to expend resources to prepare in an academy, but simply rely on the free common education they received at the local district school. And if the examination still proved too daunting, they could enroll in the preparatory class. When this is

\textsuperscript{70} Fries, Henry Prentiss Armsby, 5.
\textsuperscript{71} Stave, Red Brick in the Land of Steady Habits, 4-5.
\textsuperscript{72} The Storrs School social origin data was created by cross referencing the students entering the school between 1882 and 1884 as identified in the University of Connecticut, Registrar's Office Records. The website ancestry.com was used to retrieve federal census folios.
\textsuperscript{74} Ibid., p. 9.
\textsuperscript{75} Ibid., 7-8.
combined with the paid labor opportunities to defer board and ancillary expenses, Storrs Agricultural School offered an attractive option for working class youth.

Table 4.1

<table>
<thead>
<tr>
<th>Economic Level</th>
<th>Total</th>
<th>Percentage</th>
<th>Level Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td>4%</td>
<td>$50,000</td>
</tr>
<tr>
<td>II</td>
<td>11</td>
<td>39%</td>
<td>$18,709</td>
</tr>
<tr>
<td>III</td>
<td>3</td>
<td>11%</td>
<td>$2,800</td>
</tr>
<tr>
<td>IV</td>
<td>7</td>
<td>25%</td>
<td>$1,710</td>
</tr>
<tr>
<td>V</td>
<td>1</td>
<td>4%</td>
<td>$600</td>
</tr>
<tr>
<td>VI</td>
<td>5</td>
<td>18%</td>
<td>$45</td>
</tr>
<tr>
<td>TOTAL</td>
<td>28</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

SOURCES: The Storrs School social origin data was created by cross referencing the students entering the school between 1882 and 1884 as identified in the University of Connecticut, Registrar’s Office Records. University of Connecticut Archives, Christopher Dodd Research Center, Series IV with federal census folios. The website ancestry.com was used to retrieve federal census folios.

The lax preparation of enrolled students that came with low admissions standards resulted in a much more basic curriculum than Henry Armsby had envisioned in 1882. Graduates discovered that the intermediary nature of the school’s academic program instilled little value in their “diploma of graduation.” For those uninterested in farming, Storrs graduates had to enter the workforce with at best an academy-level education. They would have to pursue further study to be viable candidates for the scientific, technical, and engineering careers that were the path of many land-grant college graduates. After his first graduation ceremony in 1884, Principal Koons wrote T.S. Gold that “several of the graduates and some of their parents ask that we establish a

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76 The Storrs Annual Report to the Trustees states, “Students who have completed the full two-year course of study, and have maintained a fair standing in deportment, study, and work, will receive a diploma of graduation.”
post graduate course . . . and perhaps one half of them will return for a third year.” In the same letter, Koons sketched out a plan of advanced study with courses in advanced chemistry, agriculture, history, political economy, and elective courses in surveying, biology, entomology, and rhetoric. The principal suggested that “farm work be optional as to give them the largest possible liberty in their chosen department . . . [as they make] a specialty of some leading branch.” The trustees hired John Washburn, graduate of Massachusetts Agricultural College, as professor of chemistry and mathematics, and it was foreseeable that he and Koons could implement such a new departure.

The trustees placed Koons’ proposal under consideration, but by the start of the 1884-1885 school year, no advanced study program had been approved. Having no option for a third year of study, graduates entered the workforce. Due to the intermediary nature of the Storrs School curriculum, the career trajectory pattern of graduates is quite different from land-grant colleges (See Figure 4.2). Unlike previous examples, only one student from the first three graduating class would become a specialist or technical worker as a civil engineer and only three students would pursue collegiate study elsewhere and become physicians or lawyers. Also dissimilar is that the largest proportion (33 percent) of graduates became practicing farmers. When graduates and non-graduates are taken together, the modal destination is a career in the less-education dependent, middle class clerical and retail jobs. These are vocations like

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77 President Koons to T.S. Gold, June 25, 1884. T.S. Gold Papers. University of Connecticut Archives, Christopher Dodd Research Center, Box 2, Folder 2.
78 Ibid.
79 Ibid.
80 The Storrs School social origin and career trajectory data were created by cross referencing the students entering the school between 1882 and 1884 as identified in the University of Connecticut, Registrar's Office Records. University of Connecticut Archives, Christopher Dodd Research Center, Series IV with federal census folios. The website ancestry.com was used to retrieve federal census folios.
81 Ibid.
salespeople, undertakers, store clerks, peddlers, stock or mortgage buyers, etc. Twenty-six percent of enrolled students chose to pursue these middle class careers, since they did not possess the specialist knowledge that could bring stable engineering or management work from a railroad or manufacturing company. Instead, these young men with intermediate education were truly the “men on the move” that defined the era’s quest for middle class mobility. Some found considerable success, others financial ruin.

Table 4.2

<table>
<thead>
<tr>
<th>Occupational Sectors</th>
<th>Social Origin</th>
<th>Social Destination</th>
<th>Social Destination - Grads</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage</td>
<td>Total</td>
</tr>
<tr>
<td>Professional (Lawyer, Clergy, Medicine, Teaching, Public Official, and Writer/Editor)</td>
<td>3</td>
<td>9%</td>
<td>4</td>
</tr>
<tr>
<td>Agriculture (Farmer, Farm Manager, Gardner, Horticulturalist, Stock Breeder)</td>
<td>14</td>
<td>41%</td>
<td>7</td>
</tr>
<tr>
<td>Skilled Labor (Self-Employed - Carpenter, Blacksmith, Furnace Repair, etc.)</td>
<td>6</td>
<td>12%</td>
<td>1</td>
</tr>
<tr>
<td>Specialist, Technical Worker (Skilled Employment in Industry or Govt. Service: Engineering, Railroad Conductor, Telegraph Relayman, Draughtsman, Draftsman, etc.)</td>
<td>0</td>
<td>0%</td>
<td>1</td>
</tr>
<tr>
<td>Business Clerical/Retail (Clerk, salesmen, telegraph operator, etc.)</td>
<td>2</td>
<td>6%</td>
<td>9</td>
</tr>
<tr>
<td>Business Managerial (Employed by firm in business operations - management, finance, etc.)</td>
<td>0</td>
<td>0%</td>
<td>1</td>
</tr>
<tr>
<td>Business Owner (Merchant, Contractor, Store Owner, Large Firm Proprietor)</td>
<td>2</td>
<td>6%</td>
<td>5</td>
</tr>
<tr>
<td>Propertyless Laborer</td>
<td>4</td>
<td>12%</td>
<td>1</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>3%</td>
<td>0</td>
</tr>
<tr>
<td>Unknown</td>
<td>4</td>
<td>12%</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL: Only includes students available in Register</td>
<td>34</td>
<td>34</td>
<td>18</td>
</tr>
<tr>
<td>*TOTAL: Including 8 unknown non-graduates from class of 1883</td>
<td>42*</td>
<td>42*</td>
<td>18*</td>
</tr>
</tbody>
</table>

SOURCES: The Storrs School social origin and career trajectory data were created by cross referencing the students entering the school between 1882 and 1884 as identified in the University of Connecticut, Registrar's Office Records. University of Connecticut Archives, Christopher Dodd Research Center, Series IV with federal census folios. The website ancestry.com was used to retrieve federal census folios.

For example, half of the class of 1883 would become practicing farmers and the rest would move from job to job in attempt to climb the ladder of social mobility. Andrew Keith Thompson was

82 Ibid.
83 Ibid.
the son of a poor farm laborer, and after graduation he took numerous jobs as a clerk and cashier. Arthur Sherwood Hubbard came from a wealthy farming background but wanted to leave that life, and his career trajectory included stops as a grocer, draughtsman, and a traveling salesman. Fred Birge Brown heralded from a modest farming background and after years of stock and mortgage sales, he became a successful dealer of lumber land.85

Principal Koons letter to T.S. Gold suggested a need to create a two-tier system at the Storrs School in the tradition of the plan of study at Guelph, Ontario. Under such an arrangement, Storrs would maintain the two-year course for aspiring farmers and some advanced degree option for aspiring scientists, technicians, and specialists. However a political movement was afoot that would squash any notion of refashioning the school as anything but a place for training practical farmers. The agricultural community leadership was shifting away from the agricultural scientists towards the newly reformed Connecticut State Grange.

The grange first came to Connecticut in 1875, but due to financial mismanagement and intrastate rivalries, twenty local granges dwindled to two by 1885.86 J. H. Hale of Glastonbury was appointed Worthy Master of a reinvigorated grange in 1886, and succeeded in reforming failing or defunct granges and founding new ones.87 In addition to leading the Connecticut Grange and serving as secretary and education committee chairman at the national level, Hale was known to contemporaries as “The Peach King.” His journey to become a leading fruit

85 Social origin and career trajectory data were created for these three graduates by assessing federal census folios. The website ancestry.com was used to retrieve federal census folios.


87 See history of the Connecticut State Grange on the organization’s website: http://www.ctstategrange.org/csghistory.asp
producer originated from humble beginnings. In 1852, John Howard Hale was born on a two hundred year old farm in Glastonbury, but only two years later, his father died at thirty-three years of age. At a very young age, J. H. Hale and his brother George had to work the farm to support their family. The brothers planted their first strawberries in 1866 with the assistance of a push cart they purchased for one dollar. While they found modest success in selling fruit, the brothers realized that additional capital was needed to expand operations. J.H. took a job milking cows for a neighbor and earned enough extra funds to buy additional strawberry plants and fertilizer.⁸⁸

One day the Hale brothers noticed seven yellow peach trees on the property that regularly bore fruit. This was rarity in New England, for most farmers abandoned peaches due to the frost and insects that regularly claimed the crop. Undeterred, they decided to plant a peach orchard at the location, but it was proving foolhardy when after seven years the trees bore no fruit. At the dawn of the depression of 1873, the Hale’s strawberry crop was decimated by a May freeze and it seemed that the mortgage payment on the farm would not be made. The peach trees had finally matured, and harvest brought $9000, a sum that paid off the farm and expanded their enterprise in Connecticut to over 2000 acres. Soon farms were bought in Georgia, and over 350,000 peach trees were then under cultivation. Peaches were shipped across the nation, and the old farm in Glastonbury became one of the major peach suppliers for New York City by 1880. “The Peach King” had only received a few years education in the local one-room school, and as he liked to tell people, his wealth was earned through ingenuity, practice, and risk-taking.⁸⁹ After Hale became a grange leader, he developed an interest in agricultural education. The fact that he had

⁸⁸ The biographical information on J.H. Hale was provided by the Glastonbury, CT Historical Society on a special webpage dedicated to “the Peach King:” http://www.kommish.net/2009/jun/hale/hal0624.html.
⁸⁹ Ibid.
risen to agricultural prominence without the aid of a scientific education would greatly color his land-grant reform agenda.

On December 7, 1886, J. H. Hale addressed assembled grangers in Hartford, and explained his proposal to transfer a portion of land-grant funds from Yale to the Storrs Agricultural School.\textsuperscript{90} He criticized the admissions standards of the Scientific School, obviously recalling his own experience, when declaring that regular farm boys lacked the time and means to prepare for such an examination. Hale believed the Scientific School offered little value to the agricultural population, since it had produced only seven graduates in agriculture over two decades.\textsuperscript{91} He concluded that Yale should retain only one-third of the federal funds “for the teaching of the mechanical arts” and give the rest to Storrs for “a practical agricultural education.” From this perspective, the Storrs Agricultural School was not one part of a tripartite arrangement with Sheffield and the state experiment station for the creation of knowledge, scientists, and educated farmers. Instead, Hale envisioned a new grange-school partnership, “A . . . practical agricultural education . . . can be accomplished only if the grange will work and act together [with the Storrs School] for the education of our farm boys.”\textsuperscript{92} Hale’s plan was adopted by the state membership, and the Storrs School was aligned with a powerful political force intent on bringing a financial windfall to the campus.\textsuperscript{93} This vote would come to force upon the Storrs School a narrow vision of agricultural education, for the grange had little interest in experiments like Principal Koons’ advanced scientific degree program. Hale and his allies wanted modest admission standards, manual training, and a new generation of practicing farmers.

\textsuperscript{90} Stemmons, \textit{Connecticut Agricultural College}, 64.
\textsuperscript{91} Cited in J. E. Lord, \textit{Yale or Storrs?: The Land-grant Controversy in Connecticut.} (PhD diss., Yale University, 1974).
\textsuperscript{92} Cited in Stemmons, \textit{Connecticut Agricultural College}, p. 65.
\textsuperscript{93} Lord, \textit{Yale or Storrs?}. 

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Less than three months after Hale’s speech, the grange lobbied for a legislative hearing on the legality of stopping land-grant payments to the Sheffield Scientific School. On March 9, 1887, the Connecticut House Judiciary Committee considered the question, and Professors Brush and Johnson testified on behalf of Yale.\(^{94}\) They argued that the Scientific School had followed the provisions of the act by “teaching such branches of learning related to agriculture and the mechanical arts.”\(^{95}\) After Hale reiterated his position, T. S. Gold, a trustee at Sheffield and Storrs, stood to address the committee. A writer for the *New Haven Register* described the mood in the room when Gold took his turn,

... when T.S. Gold, the secretary of the board of agriculture, stood up everybody expected a strong plea for the Storrs School. Mr. Gold is the leader of the farming interest of the state, a sort of pillar of agriculture so when he arose the friends of the Storrs school gathered heart. Then he gave them a surprise.\(^{96}\)

Gold declared that no other institution in the country conformed to the tenets of the Morrill Act more than the Sheffield Scientific School. The support of the Sheffield Scientific School was one of the main “things that helped the Storrs School live.”\(^{97}\) After the hearing, the committee found no legal justification to remove the land-grant funds from Yale. The grange forces had suffered a setback, but soon rallied to contest Yale’s bid to receive the funds from the Hatch Act of 1887. A second agricultural experiment station had been created the previous year at Storrs, and the grange wanted the $15,000 in federal funds invested where they had more control. The legislature attempted to appease both sides, but instead disappointed everyone, by dividing the funds between the two stations.\(^{98}\)

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\(^{95}\) Ibid.  
\(^{96}\) Ibid.  
\(^{97}\) Ibid.  
\(^{98}\) Lord, Yale or Storrs?.  

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The State Agricultural Board remained a bastion for the agricultural society gentry of scientists and ageing gentleman farmers. Yet politically-minded individuals were ascending the ranks of leadership and moving the board closer to the will of the state grange. In 1887, the board used its annual state meeting to host a series of speeches and discussions on the land-grant question entitled *The Storrs School vs. The Sheffield Scientific School* for its increasingly divided membership.\(^9^9\) The first address was given by J. B. Olcott, founding trustee of the Storrs Agricultural School and lifetime agricultural society collaborator of T.S. Gold. Speaking in his official capacity, he asserted his opposition to land-grant reformation unequivocally, “I am one of the trustees of the [Storrs] school, and though it needs money . . . I do not believe in robbing Peter to pay Paul, and don’t wish to get a dime in that way.”\(^1^0^0\) Olcott argued that the Storrs school was not intended to be a college, but a school “down near the ground where [farmers’] sons can get into it, and come out of it with a relish for farming.”\(^1^0^1\) He then issued a prophetic warning to the audience: “Not one in twenty of our common school graduates today, are fit to enter the Storrs School. Make a college of it and our boys couldn’t get into it with a ladder.”\(^1^0^2\)

Next to the podium in defense of the Sheffield Scientific School was Professor William H. Brewer. There was perhaps no other person that had deeper insights into Yale’s land-grant efforts, he had been a student, faculty member, and now chairman of agriculture. Brewer was born on a modest farm in upstate New York to a progressive, scientific farmer. He spent his winter at the local district school and later the Ithaca Academy, with summers helping his father on the family farm. Having cultivated a keen interest in the natural sciences, he received his

\(^9^9\) “The Storrs Schools vs. the Sheffield Scientific School.” From *Report of Secretary of Connecticut Board of Agriculture, 1887*. Copy retrieved from the University of Connecticut Archives, Christopher Dodd Research Center. Legal and Legislative and Legislature Collection. Box. 1, Folder 19.

\(^1^0^0\) Ibid., p. 1.

\(^1^0^1\) Ibid., p. 1.

\(^1^0^2\) Ibid., p. 1.
father’s permission to attend the new School of Applied Chemistry at Yale in 1848. He studied under Benjamin Silliman, Jr. and John Pitkin Norton, and joined Samuel Johnson and George Brush in the first graduating class of the soon-to-be Sheffield Scientific School. Brewer pursued advanced study in chemistry and botany abroad with Professor Robert Bunsen at the University of Heidelberg and then with Justus Von Liebig at the University of Munich. Upon returning from Europe, he taught in academies and agricultural institutes, and accepted an appointment to conduct the geological survey of California. In 1864, Brewer returned to New Haven as professor of botany, researcher of soil chemistry, and chair of agriculture. And with a three decade relationship in toe, Brewer stood before the agricultural establishment to defend the institution at the center of his professional life.

William Brewer began his speech with the regular refrain of the “National School of Science” defenders, “there is considerable misapprehension as to the original [land-grant] bill . . .” It was not for sponsoring agricultural or mechanical colleges, but “to help those colleges . . . teach the sciences that were used in agriculture and mechanical arts . . . better than the old classical colleges had done.” The Sheffield Scientific School had been fulfilling this role for four decades, Brewer contended, at zero cost to the taxpayers of Connecticut. He then addressed the most contentious issue amongst the membership: the social origins and career trajectories of students. Brewer stated that he was aware of over a hundred farmers’ sons that had pursued an education at Sheffield, and many of these students had availed themselves of scholarships and attended without cost. The problem, as Brewer perceived it, was that graduates were disinclined to return to the farm: “We cannot oblige the farmer boys to go back to the farm if they choose

104 “The Storrs Schools vs. the Sheffield Scientific School,” p. 3.
105 Ibid., p. 4.
otherwise after they have been through school.”  

He encouraged those assemblies to celebrate the “good many farmers’ boys . . . a brilliant set of young men” who had found considerable success in manufactures, business, and engineering where they “can make more money than on the farm.”  

Brewer then turned to the Storrs school. The farmers of the state would be disappointed if the Storrs School was made an agricultural college, he argued, stating “there is not a single State that has an agricultural college that has educated in them as many men for the farms as farmers hoped would be the case.”  

The level of college instruction would always educate away from the farm, and the work of instructing future farmers is best left to schools of an intermediate grade. “I believe there is a great place for schools of a grade below colleges – between that of a college and a common school . . . [and the Storrs School] may have a brilliant career in that way.”  

Brewer concluded with the adroit argument that since the Morrill Act was for colleges, the effort to transfer funds from Yale to an intermediate school was both ill-advised and illegal.

Brewer’s speech received a polite applause and then questions came from the floor. John S. Kirkham, agricultural board treasurer and a staunch member of the local and state grange focused on Brewer’s claim that several farmers’ sons had attended Sheffield. Ignoring Brewer’s nuanced distinction between manual agricultural training and the scientific study of agriculture, Kirkham requested the exact number of students that had “received a purely agricultural education as distinguished from a scientific education, so-called.”  

Brewer replied curtly,

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106 Ibid., p. 173 [9].
107 Ibid., p. 173 [9].
108 Ibid., p. 8.
109 Ibid., p. 8.
111 “The Storrs Schools vs. the Sheffield Scientific School,” p. 173 [9].
It is a scientific school. It has to teach science as applicable to agriculture and mechanical arts. We have no farm. We cannot teach the art of agriculture . . . I cannot give the relative numbers who have been in the several sections of the school. I have no wish to conceal anything . . . If I do not give the information, it is because I have not got it.112

The exchange between Brewer and Kirkham is a perfect example of the larger debate that embroiled the agricultural interests. Grangers demanded an education that would return children to the farm, but they needed their proposed institutions to resemble agricultural colleges in order to claim the benefits of the land-grant act. The academics countered that if an institution had manual, vocational curricula of a low grade then it was a not a college, and if the scientific study of agriculture was offered instead, graduates would use that education to pursue more lucrative careers than farming. Here lies the intractable paradox of land-grant reform during this period.

A stalemate on the question persisted for three years until the stakes were raised with the passage of the second Morrill Act of 1890 and the promise of an additional annual grant of $15,000 to grow by $1,000 each year. J.H. Hale made his move for political power in 1893, when he won election to the state legislature, and was named chairman of the Committee on Agriculture.113 The Agricultural Committee hearings now became the grange’s platform for contesting Yale’s land-grant status, sideling the more moderate state agricultural board.114 On March 9, 1893, Congressman Hale championed a bill in committee entitled “Establishing the Storrs Agricultural College and Providing for the Distribution of Money Received from the United States for Educational Purposes.”115 The bill would both elevate the status of the Storrs

112 Ibid., p. 174 [10].
113 The Connecticut State Library Connecticut General Assembly Database shows that Hale only served in the year 1893. It is reasonable to conclude that his decision to stand for election was connected to securing the land-grant for Storrs. Information retrieved at http://www.cslib.org/connga.asp.
115 See ibid; Bill description in Stemmons, Connecticut Agricultural College, p. 69.
School to collegiate status (conceivably making it eligible for the federal funds), and transfer all land-grant funds to the newly formed college.

The bill would not come to the House floor until the end of March, and the remainder of the month was full of heated debate in granges, clubs, and newspapers. On March 13, 1893, Judge Henry C. Robison was the guest speaker at a regular meeting of the exclusive Yale Kent Club. As reported in the *New Haven Register*, Robinson digressed from his prepared remarks to discuss the Yale-Storrs controversy brewing in the legislature. The judge pleased those assembled when he declared, “I am sorry to see some foolish-brained people endeavoring to take away from the Yale Scientific School [and] . . . to carry the same up into Tolland county and to bury it in the stone pile there.”  

He continued to lambast the Storrs coalition and extol the virtuous service that the Scientific School had given to the state’s farmers. On this point Robinson crafted the following defense of Yale’s land-grant status:

[H]ave the requests of farmers . . . been ignored or slighted? On the contrary, special subjects have been investigated for their benefit; gatherings in their interest have been held in New Haven; reports have been rendered which have saved the farming interest hundreds of thousands of dollars. Work of this kind can only be done by experts, and had not the Scientific School concentrated its efforts and placed at this same time a liberal interpretation upon the meaning of the act of congress, no such brilliant record could have been made . . .

Here was an interpretation that harkened to the words of John Porter, Daniel Coit Gilman, or even Justin Morrill himself. The value of land-grant colleges to agriculture need not be measured by the numbers of farmers produced. The Sheffield Scientific School would hold firm to the belief that the creation of “experts” and the production and dissemination of scientific knowledge was an equally viable and appropriate charge.

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117 Ibid.
The day after the judge’s remarks were published, Charles Pierson Auger penned a letter in support of the Storrs coalition. He began by identifying himself “as one of those ‘foolish brained people,’” and claimed that he and his allies were motivated to “obtain only what we believe honestly belongs to us . . .” Auger politely conveyed an appreciation for what Yale had tried to do for the state’s farmers, but added that “her kindness has been mistaken and her efforts misdirected.” The Morrill Act had expressly stated that colleges were to be created for the “agricultural and industrial classes,” and thus Auger contends, “We think we . . . have a right to say where and how that interest shall be spent.” He sounded the regular grange position of why Yale was “mistaken” in its approach:

Of the ‘200 to 300’ farmers’ sons graduated, who received the benefit of the free scholarship, eleven took the agricultural course and it is not known that these 11 are engaged in farming. In fact, these farmers’ sons were not the sons of representative farmers . . . They were the sons of farmers who were financially able to educate them far beyond the limit of education in our public schools. The entrance-examination of the scientific school was so high that only the young men especially prepared could obtain admission . . . excluding the class the fund was designed for.

Here the fundamental class differences over the land-grant’s aims come into full view. On the one hand is upper-middle class gentlemen assembled in New Haven celebrating a liberal interpretation of the Morrill Act that enshrined specialist knowledge and swelled the ranks of educated professionals. Standing in opposition were a coalition of farmers, who in the words of Auger, were “not ignorant . . . well meaning ‘hayseeds,’” but individuals trying to prevent further support for “an education in the scientific school [that] tended to educate . . . sons away from the

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119 Ibid.
120 Ibid.
The farmers of the state grange believed the Storrs School would curb the outmigration and mobility of their children and preserve their status and communities.

March 29, 1893 was an unusual day at the Connecticut capitol. Scores of young women “bright and elegantly attired” had descended upon the general assembly apparently on an educational excursion from Williams Memorial Institute, a women’s secondary school in New London, Connecticut. The visitors swelled the gallery, bringing an air of excitement to the mundane procedure and protocol. A reporter for the Hartford Register concluded that such a large and “handsome” audience could not have been drawn to the city by the Storrs Agricultural Bill alone. But they were there all the same. When the debate on J.H. Hale’s bill to elevate Storrs into a land-grant college came to the floor, representatives exchanged barbs with a heightened bravado under the watchful eye of local farmers and the fashionable females. Opponents dismissed the legislation as a “money grab” by farmers in violation of a sacred contract between the state and Yale. Representative Callahan warned that this vote would initiate a continuous financial burden, “where are we going to stop in these appropriations to the Storrs School.” Mr. Sare of Waterbury countered that many opponents were “sons of Yale” bent on defending their alma mater. Hale, “the great champion of the measure,” arose to fully explain the details of the bill. He noted that the Storrs School would be renamed a college and as such become eligible for the funds from the Morrill Act of 1890. In a direct appeal to his fellow Republicans concerned with an impact on state expenditures, Hale provided an

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121 Ibid.
122 The article states the women came from New London, and Williams Memorial Institute (WMI) was the only women’s educational institution in that town. WMI was founded in 1891. See Paul P. Marthers, "Eighth Sister No More": The Origins & Evolution of Connecticut College. (New York, NY: Peter Lang Publishing, 2011), 11-20.
124 Ibid.
125 Ibid.
126 Ibid.
accounting of Storrs finances, and contended that the federal funds would place the new Storrs Agricultural College on a firm financial foundation, precluding the need for future state appropriations.\textsuperscript{127} The last bit of theatrics was at the hands of House Speaker Judge Wood, a Republican and unwavering friend of the state grange. On this question, however, Wood went his own way. He delivered a “rattling speech” on the sanctity of contracts, and declared that this course of action would assuredly bring “a lawsuit lasting three years.”\textsuperscript{128} Wood finished by stating that “Storrs had been very generously treated” by the legislature and the Sheffield School, and should continue on this present path content that they could “depend on such treatment in the future.”\textsuperscript{129} The Republican leader’s stand was not enough to sway his dominant majority, and the measure passed 133 to 31. Soon after, the Connecticut State Senate endorsed the plan with an even more lopsided result, 22 to 2.

The final hurdle for J.H. Hale was the possibility of the governor’s veto. Supporters and opponents used the press to pressure Governor Morris to support their position. The Yale coalition exclaimed that their generous efforts to nurture the fledgling Storrs School “now returned to plague them.”\textsuperscript{130} They argued that farmers had reacted “shyly” to the establishment of the Storrs School in 1881, and it had been men like Professors Johnson and Brewer who had advocated most strongly for the institution. Johnson and Brewer had understood that the will of the Storrs brothers was for a school of a “lower grade and for younger boys.”\textsuperscript{131} The bill would make Storrs a college, for no other reasons than to secure the land-grant funds, and would “cost several hundred thousand dollars . . . and require greatly increased annual state

\begin{footnotes}
\item \textsuperscript{127} Ibid.
\item \textsuperscript{128} Ibid.
\item \textsuperscript{129} Ibid.
\item \textsuperscript{130} “Returns to Plague Them,” \textit{New Haven Register} (April 3, 1893): L1, 78, p. 1.
\item \textsuperscript{131} Ibid.
\end{footnotes}
appropriations.”¹³² It was “engineered” by the grange, they argued, after the “national grange advocated [in 1887] for the separation of the agricultural colleges from all other institutions.” For they concluded, honest farmers not under the control of outside forces realized that the Storrs School not the Storrs College was most likely to produce farmers.¹³³

With a mix of political calculation and personal reflection, Governor Morris sided with the grange and endorsed the bill on April 21, 1893, creating the Storrs Agricultural College and designating it the recipient of all land-grant funds.¹³⁴ The governor explained that the legislature had given numerous hearings on the bill, and the overwhelming support in both chambers signaled it was the will of the people. Further, he stated that while the Sheffield School had been “able to prepare the education in the line of mechanical arts to good advantage . . . there had been . . . a good deal of complaint on the part of those engaged in agriculture that [Sheffield] has not given the instruction which was called for in the original act.”¹³⁵ Governor Morris concluded that the Sheffield School was not organized to those ends. It had no farm attached for instruction, and thus

> those intended to be educated for the farms . . . do not go back . . . [but] receive an education that leads them into civil engineering and other professions, anything in fact but farming.”¹³⁶

As discussed in chapter two, this would begin a protracted legal battle that would force the legislature to compensate Yale over $150,000. Yet the Connecticut grangers had secured their agricultural college on April 21st, and could now attempt to build an institution to improve the

¹³² Ibid.
¹³³ Ibid.
¹³⁴ “Why he signed the bill?,” New Haven Register (April 21, 1893): L1, 95, p. 1.
¹³⁵ Ibid.
¹³⁶ Ibid.
plight of the state’s farmers. But over the next decade, J.H. Hale and his grange allies would come to understand the daunting challenge of educating students and returning them to the farm.

Rhode Island

Herbert Myrick graduated from the Massachusetts Agricultural College in 1882, the same year that the fortunes of that institution greatly improved. The Massachusetts legislature approved $10,000 annually for scholarships, resulting in a near doubling in the size of the entering class.\textsuperscript{137} The rising tide of the agricultural college at Amherst served as a beacon to those interested in reforming land-grant education in other states. Myrick became editor of the \textit{New England Homestead} in 1885 and devoted regular columns to agricultural education and the state of land-grant colleges.\textsuperscript{138} He celebrated Massachusetts’ accomplishments, noting that the college and experiment station had been a “great benefit to New England agriculture.”\textsuperscript{139} Myrick found little to praise in Rhode Island, and soon turned his attention towards reforming what he saw as a failed educational experiment at Brown University.

If Herbert Myrick was looking to use farmer cooperation to press for reform like had been done when Massachusetts’ grangers agitated for state scholarships; he was mistaken for farmers had little organizational capacity in Rhode Island.\textsuperscript{140} Of all the states in New England, Rhode Island was the least dependent on agriculture, as the economy was largely driven by a manufacturing economy centered in Providence.\textsuperscript{141} For four decades, the Society for the Encouragement of Domestic Industry had been the representative voice for agriculture. It was a

\textsuperscript{137} Harold Whiting Cary, \textit{The University of Massachusetts: A History of one Hundred Years.} (Amherst, MA: University of Massachusetts), 64.
\textsuperscript{138} White, \textit{The National Cyclopedia.}
\textsuperscript{139} Cary, \textit{The University of Massachusetts}, p. 64.
\textsuperscript{141} See R. Douglas Hurt, “Northern Agriculture after the Civil War.” In Lou Ferleger (Ed.) \textit{Agriculture and National Development} (Ames, IA: Iowa State University Press, 1990), 53-74.
modest entity that irregularly promoted scientific farming, held agricultural fairs, and advocated for better rural schools and roads. The society was chiefly responsible for the creation of the state board of agriculture in 1885, which became the main site for discussing agricultural issues. Two of the board’s members were appointed by the government and five were chosen by the county chapters of the Society for the Encouragement of Domestic Industry. Due to oddities in the structure of state government, a political machine - under the control of Republican Party boss General Charles R. Brayton - dominated state politics. Every small town or borough in Rhode Island, no matter its population, elected state senators. Whereas the House was heavily tilted towards populous Providence, Brayton used patronage and pay-offs to control senate seats. He maintained the upper chamber as a bastion of his party’s power. Rhode Island farmers were largely Republican and celebrated Brayton as a staunch ally that protected rural communities. But they also understood that if you needed something done or changed you had to “wheel and deal” with the general. In 1887, however, Brayton’s power was waning. The Republican majority in the Senate dropped to four (the lowest number in two decades), the House was in Democratic hands, and for the first time since the Civil War, the people elected a Democratic Governor. Into this emerging power vacuum entered the grange. Local granges began forming

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143 *Rules and Orders for the use of the General Assembly of the State of Rhode Island, 1886-1887.* (Providence, RI: E. L. Freeman & Sons, 1886), 106.
144 The best assessment of Charles Brayton’s political power is the chapter “The Boss and the College” in *Eschenbacher, The University of Rhode Island*, 96-117.
145 As noted in Donald A. D’Amato, *Warwick: A City at the Crossroads.* (Charleston, SC: Arcadia Publishing, 2001), 85-6, Warwick resident and party boss Charles Brayton remained the Republican Party Boss until 1910 and continued to exert significant influence over state politics. However, the election of a Democratic Governor in 1887 would signal that a credible opposition had emerged. Farmers, when dissatisfied with Republican policies, could form coalitions with urban workers under the Democratic banner.
146 *Providence Journal*, April 7, 1887.
in 1886 and a state fraternal order was established in 1887.\textsuperscript{147} Having sensed that they were losing the protection of the party boss, farmers turned to cooperation.

The nascent grange provided Herbert Myrick with a willing partner for land-grant reform. Wealthy farmer Thomas Hazard became the leader of the fledgling order under the guidance of Charles Flagg, the longtime head of the Society for the Encouragement of Domestic Industry.\textsuperscript{148} The leadership decided that a Farmers’ Field Day should be held to bring together local granges from throughout the state to plan the future of the fraternal organization and discuss agricultural policy.\textsuperscript{149} On March 2, 1887, President Cleveland signed the Hatch Act, which promised $15,000 to the states to establish agricultural experiment stations to be attached to agricultural colleges or departments.\textsuperscript{150} In Rhode Island, the Hatch Act funds would go to Brown. Here was an issue Myrick could use to advance his educational reform! Soon a plan was hatched by the grange leadership to lobby for a new state agricultural school and experiment station, which could receive the Hatch funds in lieu of Brown. It was decided that discussion of this plan would be the central item of business at the Farmers’ Field Day.\textsuperscript{151} Myrick used the \textit{New England Homestead} to publicize the event, and offered Hazard his subscription lists for the distribution of personal invitations.\textsuperscript{152} The event would be held on August 20, 1887 at the new vacation resort of Oakland Beech, Rhode Island.\textsuperscript{153}

\textsuperscript{147} Bicknell, \textit{The history of the state of Rhode Island}, 1195-1197.
\textsuperscript{148} For evidence of the close relationship between the Rhode Island Grange and Herbert Myrick see letters between Herbert Myrick and Charles Flagg, University of Rhode Island Archives, Records of the State experiment Station, Charles Flagg Letters.
\textsuperscript{149} Eschenbacher, \textit{The University of Rhode Island}, 17-18.
\textsuperscript{150} For the best treatment of the political history of the Hatch Act see Alan Marcus, \textit{Agricultural Science and the Quest for Legitimacy}. (Ames, IA: Iowa State University Press, 1985), 188-216.
\textsuperscript{151} Eschenbacher, \textit{The University of Rhode Island}, 17-18.
\textsuperscript{152} Myrick’s mailing lists from the Phelps Publishing Company (including subscribers of \textit{Farm and Home}, the \textit{New England Homestead}, and Springfield Homestead) were a critical component of the campaign for land-grant reformation in Rhode Island, Vermont, Connecticut, and New Hampshire. For the most detailed insights into this
Some of the wealthiest of the 1200 farmers that arrived in Oakland Beach for the Farmers’ Field Day would be staying at the posh, three-story hotel overlooking the artificial pond, rustic bridges, and wooden boardwalk meandering into the sea to greet passing vessels. Others enjoyed their vacation from the hot summer tilling by enjoying the boardwalk’s new-fangled amusements like the “flying horses . . . shooting galleries, and the dizzy swings, etc . . .” After likely dining on the areas major attraction – clams roasted on hot stones – farmers returned to the main amphitheatre where the field day was called to order. Most were aware that a few months earlier, a legislative committee had been created to consider the possibility of chartering a new agricultural school in Rhode Island. The assembled grangers were treated to a barrage of fiery rhetoric as speakers worked to sell them on the leadership’s scheme. First, Myrick informed the audience that Brown was poised to inherit a second sum of monies (the Hatch Act funds), even after the college had failed to return any “practical benefit” to the farmer.

relationship in Rhode Island, see January 26, 1891, Herbert Myrick to Charles Flagg, University of Rhode Island Archives, State Experiment Station Collection, Charles Flagg Papers.

Bicknell, The history of the state of Rhode Island, 1195-1197


Oliver Payson Fuller, The history of Warwick, Rhode Island, from its settlement in 1642 to the present time (Providence, RI: Angell, Burlingame & Co, 1875), p. 146-7.

Ibid., p. 147.
He was followed by Henry Alvord, Professor of Agricultural at the Massachusetts Agricultural College, who had spent much of the previous year in Washington working for the Hatch Act’s passage. Alvord revealed the extent of their plan. He stated, farmers must “organize . . . to bring pressure to bear upon the legislature and its committee and to let them know they are being watched to see that they represent their interests faithfully.” Forget about “reforming the educational placebo at Brown,” he argued, and instead “proceed at once to the establishment of an independent institution.” The farmers had to only observe the large assembly to imagine the political potential of their new organization, and with an exuberant confidence, the farmers passed a resolution for a new agricultural school.157

As discussed in chapter two, the resolution was printed in a pamphlet entitled “The Farmer Speaks Out” and distributed through the *New England Homestead* mailing lists.158 By the end of October of 1887, fifteen new local granges were formed throughout Rhode Island, with most averaging around forty members.159 These new grangers joined with their Oakland Beech brothers to call for educational reform. The five person commission considering the proper destination for the Hatch Act funds concurred with the grange, and recommended the creation of an independent agricultural school. Brown University allies in the Senate were able to stall the farmers’ momentum, after succeeding in creating a joint senate-house committee to consider all matters related to the Hatch Act. On January 31, 1888, President Ezekiel Robinson of Brown appeared before the mostly hostile, joint committee to defend his institution. Even before Robinson could speak, he and his institution were subject to insults from farmer Arthur W. Brown. Several sarcastic examples of college graduates were tendered by Brown, but the farmer

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157 The content of the speeches and information on the business of the meeting can be obtained in the *Rhode Island County Journal*, August 26, 1887.
158 Eschenbacher, *The University of Rhode Island*, 17-18.
159 Ibid.
had the most fun describing one “dandy” university professor who use to dress in fine apparel and “take his hat off to himself” when he caught his own reflection. The college remained the home of the refined dilettante, the farmer explained, as not “100 boys or their parents” from regular farming families knew of the land-grant college scholarships. And when beneficiaries were chosen, Brown continued, it was done for political calculation and not to serve the class of individuals for which it was intended. The final insult was reserved for President Robinson:

... it [is] quite natural a gentleman like Dr. Robinson, exempted from taxation and jury duty, should suppose he was self-poised [sic] in his position, like Mahomet’s coffin between Heaven and Earth.160

Representative Samuel Peckham attempted to temper the angry class rhetoric. He asserted that he could “look at the matter from both sides, having been brought up on the farm and having been college educated . . .” If he put himself in President Robinson’s place, Peckham imagined that he too would add $15,000 in Hatch Act funds to the college treasury. Reaching the end of his patience, Robinson interrupted Peckham to declare that Brown College “did not want one cent of the fund” for purposes outside the scope of the act. The stipulations of the law disallowed the funds being applied to instructional purposes, and Robinson explained that the college had neither the experimental laboratory nor farm to conduct the research required. An experiment station could not be established alone, it had to be formed in connection to an agricultural college or an existing college or department. The choice before the legislature was to appropriate funds to Brown University to provide the necessary research capacity (i.e. farm, building, apparatus, etc.) to carry out the Hatch terms, or build a new agricultural college, like in Massachusetts, fitted to those ends. But the president warned that all must realize that the founding of a new college was an expensive endeavor that would commit the state government

160 Complete coverage of Robison’s presentation before the committee and the response is available in Providence Journal, February 1, 1888.
to regular appropriations. Aware that this was Brown College’s best defense, Charles Flagg quickly countered that an independent agricultural college and experiment station would provide a financial windfall that would compensate the state for its investment. If a school could be established for “all desiring to study agriculture,” then Flagg argued, farmers could ascertain the best “ways of feeding grain to cows . . . increase the product of each cow one pint a day, which would increase the income of the State $204, 932 per year.” It was the type of quick calculations that were becoming a staple of the grange repertoire to win over legislators wary of increased taxation and spending. Peckam concluded the proceedings with an assessment that if Brown received the federal funds and the state purchased it a laboratory, “it would be more beneficial to the professors than to the students,” and it was in the best interest of Rhode Island agriculture to start anew.\footnote{All quotes from this paragraph are taken from Providence Journal, February 1, 1888. Also see Eschenbacher, The University of Rhode Island, 22.}

On March 21, 1888 and March 23, 1888, the grange claimed victory, when the Rhode Island House of Representatives and Senate passed “The Agricultural School Act” (Chapter 706 of the Public Statutes) without debate or opposition.\footnote{Acts and Resolves Passed by the General Assembly of the State of Rhode Island and Providence Plantations, at the January Session, 1888. (Providence, RI: Freeman, 1888), 218-219. It should be noted that term “School” is used and not “College” in the legislation. The reason was the desire to retain an intermediate agriculture education at the institution, and the fact that Hatch Act funds (not Land-Grant funds) would finance the school.} The law declared that $5000 would be appropriated for a state agricultural school to be controlled by a Board of Managers. This five person board was to be comprised of “practical agriculturalists” appointed from the state’s five counties.\footnote{Ibid.} The act made the new institution the beneficiary of the Hatch Act funds, and also stipulated the following:

\footnote{Ibid.}
“... any sum which shall be received by the state by virtue of any act of congress for the promotion of agriculture, shall be appropriated to the use of the [Board of Managers] for the purpose for which the said sum is appropriated.”

By June, the Governor appointed the Board of Managers, and while all were loyal Republicans and three were members of the legislature, historian Herman Eschenbacher notes that only Charles Flagg “seemed to possess any particular credentials for the post to which he had been appointed.” Flagg had been a chief agitator for an independent agricultural school from the outset. Largely due to the respect garnered from his leadership role in the Society for the Encouragement of Domestic Industry, he was selected chairman of the Oakland Beach meeting and was a key contributor at hearings in support of the agricultural college bill. He was born on a modest family farm in Massachusetts in 1852, but was able to graduate from the state agricultural college in 1872. Flagg brought an appreciation for scientific agriculture to his positions in the state agricultural society and as president of the new school’s board of managers.

It was this Amherst connection that had brought Herbert Myrick (class of 1882) and Charles Flagg together at Oakland Beech, and the new president of the board of managers would soon turn to another member of Massachusetts’ land-grant college, Dr. Charles Goessman, to help plan the agricultural school for his state.

But even before Charles Flagg and Charles Goessman could begin their planning, the Board of Managers was usurped when a legislative committee was appointed in April 1888 to solicit funds from towns and villages in exchange for locating the school within their borders.

Grange leaders Thomas Hazard and Jeremiah Peckham, Jr. had personal ties to the village of

164 Ibid., p. 219.
165 Eschenbacher, The University of Rhode Island, 25.
166 For his role at Oakland Beech see Rhode Island County Journal, August 26, 1887.
167 Charles Flagg’s social background information was retrieved from census folios at www.ancestry.com, and his educational history from Massachusetts State College, The General Catalogue of the Massachusetts Agricultural College. (Amherst, MA: Massachusetts State College, 1886).
Kingston and worked with local officials to make the community the home of the new agricultural school. A divided village council voted to give $2000 to the effort and village postmaster Bernon Helme raised another $2000 from a private subscription campaign amongst local residents. It was proposed that the $4000 would go towards the purchase of the Oliver Watsen-Teft farm in South Kingston - 140 acres of rolling farmland and a barn, house, and outbuilding all in various states of disrepair. The legislative committee jumped at the opportunity to secure a farm for only one-fifth of the state appropriation and agreed to the deal. However, the Rhode Island legislature - not known for its professionalism or its thoroughness – soon discovered that no statute existed to authorize any person to withdraw funds from the treasury on the school’s behalf. The part-time legislature was out of session until January 1889, and the $1000 for the Oliver Watsen-Teft farm had to come out of the Governor’s own pocket. With this expression of generosity and political grandstanding, the property was secured and turned over to the Board of Mangers on September 27, 1888, just in time for the first Hatch Act funds to arrive two weeks later. The Board of Managers would not receive state funds until the legislature returned four months later and thus had to finance the school’s founding through the legally dubious practice of using the federal Hatch Act funds that were expressly reserved for research purposes.

169 Eschenbacher, *The University of Rhode Island*, 27.
170 See “Typescript of Bernon Helme talking to Dean Weldin” Oral History Project (May 1958, unpublished manuscript). University of Rhode Island Archives. Hereafter cited as “Helme Interview”.
171 See “Typescript of Dean Adams talking to Dean Weldin” Oral History Project (May 1958, unpublished manuscript). University of Rhode Island Archives. Hereafter cited as “Adams Interview”.
172 “Adams Interview”
174 Eschenbacher, *The University of Rhode Island*, 27.
175 Ibid.
With the location question settled, Charles Flagg resumed his role as chief planner, and invited Dr. Charles Goessman, the director of the Massachusetts State Experiment Station at Amherst, to assess the suitability of the Kingston farm for their purposes.\textsuperscript{176} Goessman conducted some tests and concluded that the land was suitable for an experimental farm, but he also raised concerns that the remaining $4000 would not be enough to repair buildings, purchase supplies, and secure a faculty.\textsuperscript{177} Having placed his stamp of approval on the location, Goessman likely was asked to offer an opinion on a principal for the school. Was there some accomplished Massachusetts Agricultural College graduate or faculty member who could lead their efforts in Rhode Island? While no record of this meeting exists, it is conceivable that this was the moment John H. Washburn’s name was first advanced as an appropriate choice to become the school’s first principal. Washburn was an 1878 graduate of the Massachusetts Agricultural College, had worked for two years (1881-1883) at the Massachusetts Experiment Station under the mentorship of Goessman, and as stated earlier in this chapter, succeeded Henry Armsby as professor of chemistry at the Storrs Agricultural School in Connecticut.\textsuperscript{178} In 1887, he left his post at Storrs to pursue doctoral study in chemistry at Göttingen, where he would receive his Ph.D.\textsuperscript{179} Flagg, after convincing the Board of Managers that the young Massachusetts Agricultural College graduate was their man, sent word of their interest to Germany (he would

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\textsuperscript{176} Board of Managers, \textit{Minutes}, October 25, 1888. University of Rhode Island Archives.
\textsuperscript{177} Ibid; \textit{Providence Journal}, October 26, 1888.
\textsuperscript{178} Eschenbacher, \textit{The University of Rhode Island}, 27.
\textsuperscript{179} Ibid; Lucy C. Tucker, \textit{Pages from the history of Rhode Island State College} (unpublished manuscript), 2.
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not be officially appointed until September 1889). The courtship to bring Washburn to Rhode Island began in earnest in December of 1888.

While the Board of Managers and John Washburn were exchanging letters to finalize his appointment in the early months of 1889, the new institution was already being criticized for choosing to locate in the remote village of Kingston. Charles Flagg, Herbert Myrick, and Thomas Hazard had enjoyed the support of local granges in their campaign to secure the Hatch Act funds for a new institution, but they soon came to realize how unwieldy a populist movement could be. Arthur Brown, who had been one of the most vocal critics of Brown, now turned on the Board of Managers for purchasing a farm that was two miles away from a railroad station. This distance would burden students with additional transportation or boarding costs, he argued. Brown and his allies in Exeter, where the railroad station was located, declared that the school should be located in their town adjacent to the depot. It was not lost on contemporary observers that Brown’s motivations were self-serving, since he had a farm near the station, which he was interested in selling to the state. Yet Brown worked diligently to stroke the ire of Exeter farmers, and on February 9, 1889, 100 grangers (with members from every town in the county) assembled at the local hall to register their dissatisfaction with the choice of Kingston.

Brown and his co-instigator, Phillip Money of Exeter, suggested backroom deals and other improprieties had led to the choice of Kingston. Money argued that Bernon Helme’s private subscription campaign was in fact a way for “the capitalists of Kingston Hill” to buy the

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180 Board of Managers, Minutes, September 17, 1889. University of Rhode Island Archives.
181 Eschenbacher, The University of Rhode Island, 28-29.
182 Ibid.
183 Ibid.
184 See Providence Journal, February 9, 1889; Rhode Island County Journal, February 15, 1889.
new school at the expense of regular farmers.\textsuperscript{185} He continued by stating that here had been no practicing farmers involved in the deal, save Jeremiah Peckham, Jr., who had since reversed his support for Kingston. A resolution was passed to send a committee headed by Arthur Brown to meet with the Board of Managers to demand the purchase of a site near the railroad station depot.\textsuperscript{186} Helme, for his part, penned a letter in the \textit{Narragansett Times} to defend his actions. He noted that the Kingston site had been investigated thoroughly by Dr. Goesmann, who had certified its suitability.\textsuperscript{187} In Brown’s classic style, he responded with a sarcastic, belittling the “scientific knowledge” of Goessman and the non-farming roots of Helme.\textsuperscript{188} The conflict was squarely in the public view, and the Board of Managers had no choice but to meet with the grange members.\textsuperscript{189} On March 11, 1889, the Board of Managers gathered all parties at the railroad station.\textsuperscript{190} After listening to the grangers’ concerns, the board decided to hold a second hearing three days later at the capital.\textsuperscript{191} The recess allowed the board to confer with legislators and other grange officials in the state, and afterwards, the board concluded that the Kingston site had ample political support statewide. No other meetings were held on the issue and a road was soon commissioned to connect the depot with the site of the agricultural school.\textsuperscript{192} In the end, this conflict had remained confined to a local grange, and despite his best efforts, Brown was unable to convince those outside Exeter that his plan was anything more than a move for personal advantage. But as Eschenbacher writes, “the incident demonstrated the proprietary

\textsuperscript{185} Ibid.
\textsuperscript{186} Ibid.
\textsuperscript{187} \textit{Narragansett Times}, February 22, 1889.
\textsuperscript{188} \textit{Narragansett Times}, March 1, 1889.
\textsuperscript{189} Board of Managers, \textit{Minutes}, February 26, 1889. University of Rhode Island Archives.
\textsuperscript{190} Board of Managers, \textit{Minutes}, March 11, 1889. University of Rhode Island Archives.
\textsuperscript{191} Ibid.
\textsuperscript{192} Board of Managers, \textit{Minutes}, March 14, 1889. University of Rhode Island Archives.
attitude held by the Grange toward the School,” and a signal that grangers would be watching closely for actions deemed outside their educational vision.¹⁹³

John Washburn arrived in Rhode Island as the conflict over location was subsiding. He immediately consulted with the Board of Managers to improve the school’s financial situation. The state house and senate approved a request for $10,000 for the experiment station laboratory in April 1889.¹⁹⁴ This allowed the board to cease the blatantly illegal practice of using the Hatch Act funds for building expenses. By January of 1890, Washburn and the Board of Managers had realized that more state funding was needed, and they sent a request for $50,000 to the legislature for the construction of a new building to serve as a dormitory and classroom space, and a $10,000 annual appropriation to maintain free tuition.¹⁹⁵ The request easily passed the state senate on March 19, 1890, but a strong opposition formed in the House.¹⁹⁶ Some members warned that $50,000 was “extravagant . . . [and] the most substantial education in farming came from hard experience, and not from attendance at a commodious, comfortably furnished institution.”¹⁹⁷ Opponents of the measure reminded farmers that the purpose of the school was to keep boys on the farm, and this large sum would only produce an opulent building that “would make the boys dissatisfied with the homely surroundings of the farm and thereby undo what was regarded as the broad purpose . . .”¹⁹⁸ However to the advantage of Washburn and the board, there were many members of the house that had worked on behalf of creating an independent agricultural school, and they were committed to place the venture on firm financial ground. The

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¹⁹⁴ Providence Journal, April 19, 1889.
¹⁹⁵ Board of Managers, Second Annual Report.
¹⁹⁶ Providence Journal, March 20, 1890.
¹⁹⁷ Ibid.
¹⁹⁸ Quote from Eschenbacher, The University of Rhode Island, 31.
funding request passed, and the institution was assured quarterly payments from the Hatch Act, $10,000 annually from the state along with $50,000 for a new building.\footnote{199}

Principal Washburn and the Board were intent on enlisting the first class in September of 1890. So Washburn and the Board of Managers busied themselves during the winter of 1889 and the spring of 1890 recruiting faculty and planning a course of study. Dr. Washburn, a newly minted Ph.D. in agricultural chemistry, would teach the student chemistry and lecture on dairying. Charles Flagg would resign his post on the Board to assume the leadership of the experiment station and hold the professorship of geology.\footnote{200} Lorenzo Kinney, another Massachusetts Agricultural College product and former assistant at the Amherst experiment station, became an assistant to Flagg and Professor of Botany.\footnote{201} To fill the position of chemist in the experiment station and serve as Professor of Soils and Organic Chemistry, Washburn turned to Massachusetts Agricultural College graduate (1881) and Goessman protégé Homer J, Wheeler. Wheeler was an exceptional researcher who was a contemporary of Washburn in Göttingen, where he also received his Ph.D. in 1889.\footnote{202} Rounding out the instructional staff were the following part-time faculty members drawn from district schools, industry, and medicine: Samuel Cushman, Lecturer of Bee Keeping, Miss Serena Stockbridge, lecturer in English, French, and Latin, Thomas C. Rodman as Instructor in Wood and Ironwork, and Dr. Frederick Rice, Professor of Physiology, Zoology, and Veterinary Science.\footnote{203}

\footnote{199} Ibid.
\footnote{200} Board of Managers, \textit{Minutes}, June 14, 1889.
\footnote{201} Eschenbacher, \textit{The University of Rhode Island}, 33.
\footnote{203} Eschenbacher, \textit{The University of Rhode Island}, 36-37.
In February of 1890, the new Brown University president, Elisha Andrews, invited the Rhode Island Grange and the Society for the Encouragement of Domestic Industry to host its regular Farmers’ Institute Meeting on their campus. It was a clear extension of an olive branch, as the institute meetings had become little more than “forum[s] on the nature of agricultural education,” and “a rostrum for the criticism of Brown . . .” This particular Farmers’ Institute was also an opportunity for Principal Washburn to simultaneously address the leadership of the Grange and Brown University on his proposed course of study for the Rhode Island School of Agriculture. The farmers would get their first look at the agricultural scientist who would lead the institution they had been fighting for since Oakland Beech.

The man that approached the lectern was “short, rotund, and looked older than his thirty-five years.” He wore a neatly trimmed, triangular beard and had a slight limp that gave an appearance of waddling when he walked. The grangers were used to the rugged exterior of their leader Thomas Hazard, and the refined and polished finish of Washburn was more reminiscent of the portly, urbanite dandies that were staples of farmers’ jokes. And after listening to the baritone lectures of Hazard, the grangers now snickered at the high-pitched, ‘effeminate’ voice of the Kingston school principal.

While Washburn’s appearance may have generated initial suspicion amongst the assembled grangers, the content of his speech was well received. He began by praising the work of the grange, and noting that the Patrons of Husbandry and the Kingston School shared the goal

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204 Ibid., p. 45.
205 Ibid., p. 33.
206 The physical description of Washburn and the reaction of Kingston farmers are available in the “Dictation of ‘Off Record’ Conversation with William Clarke, Class of 1898.” Oral History Project. University of Rhode Island Archives. Also see “Adams Interview” and Eschenbacher, *The University of Rhode Island*, 33.
of “disseminating practical agricultural knowledge.” Washburn explained that while scientific knowledge was essential, the highest purpose in Kingston would be application of that science, framed in a way that “the information is comparatively easy for these young men to acquire . . .” Instead of studying science for its own sake, his charges would learn Botany to have “knowledge of the growth and treatment of fungi . . . so detrimental to many of our crops,” as well as “the laws of vegetable physiology” that would provide practical knowledge of how “plant breathe, grow, [and] digest,” and chemistry, which would teach the proper “application of fertilizers . . . the chemistry of digestion . . . [and] the chemistry of milk.” It would be in courses like Mathematics and Measurements where students would master the foundational principles of skills like surveying, drainage, field clearing, bookkeeping and accounting, and management of capital. And while Washburn did reveal that the students would be exposed to history, English, literature, and government, this would be done for the purpose of forming strong citizens and future leaders of agricultural organizations not for instilling haughty notions of upper class culture. The principal concluded with the main purpose for his school, free of grandiose promises, a simple plan for creating farmers: “Raising farmers to that standard of knowledge where he will understand how to farm systematically, economically, and intelligently.”

Principal Washburn announced that there would be a three-year course of study, and those completing the entire sequence would receive a diploma of graduation. He offered a list of

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208 Ibid., pp. 206-207.
209 Ibid., p. 206.
210 Ibid., p. 207.
subjects to be studied, but with the schools’ small faculty and lack of buildings, this audacious menu existed entirely in Washburn’s mind:

... agriculture, carpentry, iron work, horticulture, farm accounts, market gardening, cattle feeding, bee culture, dairying, stock breeding, rural law, forestry and landscape gardening, lecture on experiment station reports, hygiene and physiology of the domestic animals, veterinary science ... agricultural chemistry, botany, ... geology ... English, algebra, geometry, trigonometry, surveying, the drawing, French, physics, physical geography ... human physiology, entomology, zoology, bookkeeping, [and] general and organic chemistry.²¹¹

He emphasized the school would equally balance “the mental and physical powers,” and thus ample time would be given for student labor, agricultural excursions, and “practical work” in dairying, agriculture, and horticulture.²¹² Washburn appeared to have a good handle on the “golden mean” between science and practice, and stressed to this farming audience the practical and manual training components advocated by the grange. He repeated the farmers’ concerns that education caused children to move off the farm, and claimed that while this may be true of “ordinary schools,” the agricultural school at Kingston would show young men (and women) the joys and profitability of returning to the old homestead as educated farmers.²¹³ Washburn added that the numbers of Rhode Island farmers may actually increase since admission to the school only required knowledge of the “common English branches taught in our district schools, arithmetic, grammar, geography, reading, spelling, and United States history,” keeping the benefits of the school in reach of all rural youth.²¹⁴ For all Washburn got right in his speech, there was also this statement that gave grangers pause: “The option of Latin and German ... mental philosophy, elocution and music afford general culture ...”²¹⁵ And it was unlikely that many took serious or understood the claim that “these subjects are taught with reference to their

²¹¹ Ibid., p. 211.
²¹² Ibid., p. 209.
²¹³ Ibid., p. 209.
²¹⁵ Ibid., p. 212
special application to agriculture.”\textsuperscript{216} Notwithstanding this tangent from his practical education message, his remarks were greeted warmly.

President Andrews followed with words of reconciliation for the state’s farmers. Andrews stated, “It seems to my mind that the institute which is being erected in Rhode Island is calculated to boom the interests of agriculture . . . and the course of study which has been outlined by Dr. Washburn is a most excellent one.”\textsuperscript{217} He expressed hope that Brown and the new school in Kingston could work side by side within their “proper spheres” to improve agriculture in Rhode Island. He was joined by Brown professor B. F. Clarke who articulated an arrangement between the two institutions that was reminiscent of the relationship between Sheffield and Storrs as outlined by Henry Armsby. Clarke offered the following vision:

One of the prominent objects . . . is to promote industries; we are training chemists for our manufactories, and agricultural and other pursuits; we are training engineers to build your bridges, roads, mills, store houses. We are training botanists, geologists, and zoologists, surveyors for more immediate work in your agricultural and kindred pursuits.\textsuperscript{218}

According to the Brown delegation the two institutions would depend on one another, as the Kingston school would teach aspiring farmers how to apply the discoveries of the scientists trained in Providence. Clarke was followed by Professor Atwater, Director of the Office of Experiment Stations in Washington D.C., who accorded no such prominent role to Brown. He declared that founding of the Storrs School and the Kingston School marked a “new epoch in agricultural industrial education,” and since the school had an experiment station, it had all it

\textsuperscript{216} Ibid.
\textsuperscript{217} “Address by President Andrews,” In State of Rhode Island and Providence Plantations, \textit{Sixth Annual Report of the State Board of Agriculture, Made to the General Assembly at its January Session, 1891}. (Providence: E. L. Freeman and Sons, 1891), p. 64.
needed to offer comprehensive agricultural education. Atwater finally addressed the elephant in the room, when he noted that the only thing missing at the Kingston school was the federal funds from the Morrill Act of 1862.

As discussed in chapter two, a few months after the above meeting, President Andrews offered a second act of generosity. He wrote the governor that Brown would relinquish the Morrill Act of 1862 funds to the Kingston School. But with the passage of the Morrill Act of 1890, and the promise of an annual $15,000 appropriation (to grow by $1000 year), the president rescinded that offer in October in 1890. The thaw in hostilities had turned to open conflict. Charles Flagg worked with Herbert Myrick to distribute a petition to farmers through The Phelps Company’s mailing list to demand that the Kingston school inherit all federal funds. The legislature responded by creating a special commission to decide the question, and three hearings were scheduled to occur over three different days.

On April 15, 1891, the initial meeting was held in the state library and President Andrews was allowed to speak first. He offered his version of the history of land-grant education in Rhode Island. He reminded detractors that Brown had been the only institution in the state that agreed to take the land-grant in 1863, and if it had not, it would have been lost to the people. He had been willing to dispose of the original land-grant funds, Andrews explained, because the paucity of interest was never enough to cover “the draft on its own resources” caused by the requirement to instruct scholarship students (a guarantee forced upon Brown by the Rhode Island legislature in

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220 See Herbert Myrick to Charles Flagg, Jan. 26, 1891. University of Rhode Island Archives. Agricultural Experiment Station Collection. The Correspondence of Director Charles Flagg.
He declared that the reason they were assembled that day was because a “misconception . . . [had] appeared in the public mind” that land-grant funds were intended to create farmers and mechanics. The president veiled Brown University’s curriculum in the words of Justin Morrill, lecturing the commission that the founder intended the funds “to apply to a liberal and practical education on the scientific side.” He used an excerpt from Morrill speech before the Vermont legislature to declare that using the funds to establish an agricultural school was “a revolution and subversive of the whole idea of the land grant act of 1862, which was [to be] of a much broader kind.” Andrews concluded that Brown was the best institution to offer this scientific education, and a “plan might be devised whereby the two institutions . . . could co-operate advantageously.”

The bi-monthly meeting of the Pomona (county) Grange of Providence County happened to fall two days later on April 17th, and regular business was interrupted when an irate group of farmers swelled the grange hall after reading President Andrew’s testimony in the previous day’s Providence Journal. The reporter covering the meeting described a “loud resolution,” in which the leadership instructed members to attend the next hearing for the “Brown University people . . . had misrepresented facts.” A second resolution to be delivered directly to the commission declared,

[T]he claims made by the committee of the corporation of Brown University . . . is severely criticized . . . [and] their view of the object of the act of 1862 is repudiated by us as farmers and mechanics. . .

222 Ibid.
223 Ibid.
224 Ibid.
226 Ibid., p.1.
The Pomona Grange represented the interests of several local (subordinate) granges in the Providence region, and as the largest district, these two resolutions carried significant weight in coming deliberations. Their petitions were combined with letters of protest from twenty-two town and village councils, all demanding a separate agricultural college. The farmers were now mobilized, and they were ready to take the offensive at the second hearing.

On April 20, 1891, a second public hearing was held, this one in the senate chambers, and “hours were devoted to expressions of opinions from the farmers, the [Kingston] agricultural school, and the friends of [Brown].”227 The unruffled decorum that had ruled the meeting in the state library gave way to the spectacle of an unruly public galley and outbursts from the senate floor. Charles Flagg, speaking on behalf of the college and channeling the grange, dismissed President Andrews’ land-grant history as fiction and offered his own account. Professor Flagg introduced Justin Morrill’s speeches from 1862 as evidence that Morrill’s intention was the improvement of agriculture, and thus, this branch of learning should be the leading aim of all land-grant colleges.228 He encouraged the commission to review Brown’s course of study as proof that classical studies dominated the curriculum, and agricultural was but an afterthought. President Washburn arose to concur on this point, and reminded the commission that “in every case where an agricultural institution had been allied to a classical college, the latter had overshadowed the other.”229 Brown University was not serving the children of farmers, Flagg continued, for the “standard of admission . . . is such that few students can enter it from the common schools.”

228 Ibid.
229 Ibid.
230 Ibid.
from outside Providence than Brown. Flagg introduced two young boys who had attended Kingston the previous year for only twenty dollars thanks to their work on the farm at ten cents an hour. These were the students the land-grant act was designed for, he concluded, “children whose fathers had to take off their coats and work for a living.”

After the petition from the grange was read to the commission, Thomas Hazard declared that the act was for educating the children of the industrial and agricultural classes, and at Brown, this population was excluded due to high costs and high admission standards. Brown was a classical college, Hazard explained, and that “[classical] colleges [in the] country had failed to reach the working class . . .” He then stopped his speech and turned to look at all the farmers that had packed the senate gallery that morning. He stated,

Here are farmers leaving their work and coming up to the Legislature, with their sons and daughters, and asking that the funds be given to the Kingston school. The request is backed by two-thirds of the towns of the state. On the other hand, several lawyers, one doctor of divinity and other men of education come to ask that it be given to Brown University. Which represents the people?

The Brown allies were shouted down when arguing that Hazard’s remarks amounted to nothing more than class warfare and class legislation. The commission moved to close the hearing for the day, and resume three days later.

For the final hearing the commission returned to the state library on April 22, 1891 and was presided over by Governor John W. Davis. President Andrews returned to the floor to make one final plea on behalf of Brown. This time he would use a different approach, bypassing his traditional diatribes on the sanctity of contracts or the true legacy of Justin Morrill. Instead, he astutely argued that making the Kingston School a college would make that institution exactly

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231 Ibid.
232 Ibid.
233 Ibid.
like the objects of grange discontent.\textsuperscript{234} True, Andrew conceded, the Kingston school produced practicing farmers. This was a noble endeavor, important to all people of Rhode Island. But make the school a college, Andrews warned, and the “work of the institution [would be] extended . . . [and farmers’ children] would go away from it, just as little inclined to work upon the farm or in the workshop.”\textsuperscript{235} He argued that the agricultural colleges in Michigan and Massachusetts did not produce farmers but scientists and professional men, and the same fate would befall Kingston if it became a college.\textsuperscript{236} Before retiring to his seat, Andrews read the names of several notable Rhode Island leaders, including former governors, senators, and soldiers, who supported Brown’s right to the land-grant funds. The opposition roundly rejected Andrews’ data, reiterating Charles Flagg’s previous testimony that the Michigan catalogue illustrated that “out of 411 graduates 93 have become farmers, 11 horticulturalists and 53 teachers.”\textsuperscript{237} These numbers are of course suspect, as agricultural colleges tended to list a graduate’s occupation as farmer if they were in any way connected to the agricultural industry.\textsuperscript{238} Nevertheless, this retort served its purpose, and finally Thomas Hazard reappeared for the last word. He spoke briefly to respond to comments from the previous hearing that his plan amounted to “class legislation.” Hazard conceded that it was just that, yet it was not he who was responsible. It was Congress and Justin Morrill, he argued, “which had made the law for the benefit of agriculturalists and mechanics,” they were the parties “guilty of class legislation.”\textsuperscript{239} Justin Morrill had introduced class into the land-grant debate, and now Hazard was intent on ensuring that working people profited from the act.

\textsuperscript{234}“Agricultural Fund,” \textit{Providence Journal}, April 23, 1891.  
\textsuperscript{235}Ibid.  
\textsuperscript{236}Ibid.  
\textsuperscript{237}Charles Flagg offered this data on Michigan at the second hearing on April,  
\textsuperscript{238}See description of student career trajectories in chapter three.  
\textsuperscript{239}“Agricultural Fund,” \textit{Providence Journal}, April 23, 1891.
After the last hearing, the commission held a closed door conference to consider the testimony and petitions. The grange, Brown University, and the Kingston School all waited anxiously for the legislature’s next step, but days turned into weeks, and the year’s legislative session closed in May without a resolution. The Morrill Act of 1890 stipulated that the funds had to be designated to an institution within two years or it would be lost to the state. When the legislature returned in January, it would only have a few months to resolve the matter.

Amidst all this political theatre, John Washburn and his fellow faculty members were busy educating the first class in Kingston. With the land-grant questions unresolved, Washburn moved forward with the agricultural school plan that he introduced at the Farmers’ Institute meeting two years earlier. The stated design was to “fit young men who intend to pursue agriculture or mechanic arts, for active life . . .” On a normal day, students spent their mornings in the classroom studying mathematics, chemistry, botany, and English, and in the afternoon, exited to the fields for manual labor and practical agricultural instruction. The basic admission examination of arithmetic, reading, spelling, grammar, and elementary history allowed individuals with just a common school education to gain access to the Kingston School. One student noted that during the early years, no students heralded from a high school, as “many Rhode Island towns had no high school at all.” With such modest entrance standards, the institution enrolled many of modest means – including children of farmers, carpenters, laborers,

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240 Ibid.
241 Board of Managers, Second Annual Report of the Board of Managers, p. 11.
242 For an overview of the course of study during the agricultural school days see Eschenbacher, The University of Rhode Island, 26-43.
244 Lucy Tucker, “When I was a student.” Unpublished manuscript. University of Rhode Island archives. Lucy Tucker Papers.
and mill workers – and students from several rural towns and villages. In the first year, twenty-four boys and two girls were enrolled in the three year course leading to a diploma of graduation. Washburn had publically stated,

The question is often asked – will young ladies be admitted to the agricultural school? I see no reason why young ladies cannot take part in the exercises, receiving the benefits of the lectures and recitations.

After the new $50,000 main building was complete in December of the 1890, the boys were boarded on campus, but the girls had to find accommodations in Kingston. With the completion of its grand new building, thirty-five enrolled students, an active experiment station, and a ten member faculty, this intermediary agricultural school was developing quickly. It seemed destined for a bright future and an expanded purpose.

On May 13, 1892, after another year of hearings, debates, and proposals, the legislature finally considered a bill (Chapter 1078 of the Public Statutes) written by former Governor John Davis to create a College of Agriculture and Mechanical Arts at Kingston. The bill elevated the Board of Managers to trustees of the new college and directed them to receive the Morrill Act of 1890 funds which had accumulated to $48,000. Chapter 1078 left the original land-grant funds with Brown, thus bypassing the legal contract issues. As noted in chapter two, the passage of Chapter 1078 led to court injunctions and judicial appeals that went all the way to the Supreme Court. President Andrews came to see the legal challenge as futile and ultimately acquiesced. The injunction was lifted and the newly chartered Rhode Island College of Agriculture and

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246 Tucker, “When I was a student.”
248 Ibid.
249 Eschenbacher, The University of Rhode Island, 57-60.
Mechanical Arts at Kingston received all federal funds and became the state’s land-grant college on May 17, 1894.

After helping Chapter 1078 win passage, Charles Flagg returned to Kingston to a hero’s welcome. The students carried Flagg from the train station to a waiting carriage, which then wisped him away to campus where he felt obliged to make a brief speech before retiring to his office. The chapel bell was given a celebratory ringing, and to let the townspeople share in their jubilant fête, the students fired “twenty-five rounds from a Civil War era cannon.” From somewhere on campus, John Washburn observed the revelry and exclaimed, “I have carried on this school successful so far, now I’ll have to see if I can conduct a college.” But the trouble-free path of the Kingston agricultural school became much more perilous as Kingston matured into college. As President Andrews foretold, unwieldy populists would turn on the Kingston College of Agricultural and Mechanical Arts as they had done to Brown University. Chapter five explains how the grange became the college’s chief critic, and some within the order hatched a plot intent on destroying the promising career of President John Washburn.

The University of Vermont

Sensing that Vermont was on the same course of land-grant reformation as Rhode Island and Connecticut, Justin Morrill and his fellow trustees pleaded with the legislature to make an appropriation to the university. But as one assembly member summarized the state-university relationship,

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250 Ibid., 59.
251 This quote was relayed to Lucy Tucker, see “Tucker interview.”
Vermont, whose representative in Congress and now honored Senator was the father of the act creating these colleges, is almost alone in allowing her University to struggle unaided with the immense task of meeting these demands of new learning.252

Morrill and his allies hoped that an infusion of state funds would allow the university to stave off the university takeovers sweeping New England. Most Vermont farmers did not join Morrill’s call for state appropriations, however, unified in their opposition to taxation. As wool prices fell in the decades after the Civil War, Vermont farmers made a smooth transition to dairy farming, enjoyed the returns from high prices on butter and cheese, and resisted turning profits into tax revenue. Much to Morrill’s and the University of Vermont’s dismay, there was a second group of farmers - led by Vermont Grange Master Alpha Messer - that wanted a new independent agricultural college. Both Morrill and Messer would have to fight for the hearts and minds of a conservative farming population and to the victor would go the annual appropriation from the Morrill Act of 1890.

In 1888, Justin Morrill wrote President Matthew Buckham to concede that the “insane legislature of the two years prior” had wasted away the state surplus and it “seemed doubtful” that further aid would come to enhance the University of Vermont’s agriculture and mechanical arts programs.253 The ageing senator asked for information on “the number of professors [that] have been added since the land-grant act and [the number] specifically focused on land-grant areas.”254 Morrill was preparing for a series of speeches he would give in defense of the University of Vermont’s land-grant status. Buckham was entering the twentieth year of his presidency; he had led the university through a period of farmer dissent in 1878 (See chapter

two), and understood early-on that the conflicts simmering in Rhode Island and Connecticut could easily find their way to Burlington. He reported to Morrill that a new professor of agriculture was hired in 1886, and in 1888, agriculture had become a functioning department.\(^{255}\) The new program had implemented a special two-year course in agriculture and an eleven-week short course for practicing farmers, of whose names Buckham proudly displayed in the university catalogue.\(^{256}\)

In October of 1890, Alpha Messer appeared before the Vermont legislature to present the grange’s position on land-grant education, and to dismiss Buckham’s late hour reforms as political theatre. Messer proposed that what was needed was a school where students’ “mind, eye, and hand” were instructed to perform the skills of a “specific line” – as farmers, blacksmiths, carpenters, roadmen, and stone-cutters. The institution should not educate young people off the farm into professions or business, but instead, “make them love their Vermont homes more in the future than in the past: [teach them] to see the beauty and profit of it . . . that is what we are looking after, as Yankees, profit.” Before leaving the assembly, the grange master offered his final call for separation: “A classical institution and an agricultural institution cannot combine and work together more than you can mix oil and water . . . Let right and justice prevail: give us our desire, a separate . . . agricultural and mechanical college.”\(^{257}\)

Justin Morrill designed his speech to counter the Vermont grange’s pronouncements on the intent and purpose of the land-grant act. Morrill was often exasperated that he had to defend the act that he wrote; he believed that public debates with the grange was below his position as

\(^{255}\) See Ibid. Justin Morrill comments about Buckham’s reforms in this letter.

\(^{256}\) See Catalogue of the University of Vermont and State Agricultural College, 1873-1893. (Burlington, VT: Free Press Association, 1888).

senator and that his interpretation should simply settle the matter. On October 10, 1890, Morrill, now eighty years of age, made his way to Montpelier to deliver an address before the entire Vermont legislature. The speech offered his most specific and comprehensive defense of his interpretation of the law. After a brief history of the act, Morrill revealed the bourgeois foundation of his intentions, “the fundamental idea was to offer an opportunity . . . for a liberal and larger education to larger numbers, not merely to those destined to sedentary professions, but to those needing higher instruction for the world’s business, for industrial pursuits . . .” He continued that “not manual, but intellectual instruction was the central object,” and the legislation was intended to elevate science throughout higher education. The advance of scientific knowledge and the production of highly trained graduates were needed to ensure the competitiveness of the United States, for “in the great competition for supremacy among nations and among States, the survival of the best educated may be . . . safety predicted.” To these ends, Morrill argued, land-grant colleges must produce graduates ready “to guide and lead the industrial forces of a great nation.” The speech concluded with a direct response to farmers’ persistent claim that the land-grant colleges should produce more farmers and preserve rural communities. Justin Morrill declared that the sons of farmers had the same right to social mobility as any other class: “There is no assumed heredity in the vocation of the farmer, and his son has all the world before him where to choose his calling as much as the son of the minister or the lawyer.”

To prepare his case against the University of Vermont, Alpha Messer communicated with grange associates throughout New England to gather information on the negative consequences

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258 All quotes in this paragraph are from Justin Morrill, “An Address in Behalf of the University of Vermont and State Agricultural College, Delivered in the Hall of the House of Representatives, October 10, 1888. (Burlington: Free Press, 1888).
of attaching land-grants to classical colleges. He wrote to Herbert Myrick at the *New England Homestead* and Charles Flagg,\(^259\) and on one occasion sent a questionnaire to all state granges and agricultural college leaders. He inquired into the following:

1. Is the agricultural college in your state connected with a classical institution?
2. If so, how many students are in the agricultural department?
3. How many students have graduated from the agricultural department?
4. Do the classical students have the same respect for agricultural students that they have for those in their own department?
5. Is the agricultural fund from this and later appropriations kept separate with separate boards of trustees, or is there a common treasury for all the funds?
6. How many members of the board of trustees are farmers?
7. Has there ever been an effort made in your state for a separate and distinct agricultural college?\(^260\)

While the responses have not survived, it is easy to surmise from the basis of the questions the strategy Messer would use in the legislature. The University of Vermont had graduated no students from its agricultural department, it had no separate board or treasury for agricultural education, no prominent grangers were members of governing board, and agricultural students were looked down upon by their classical peers.

By November of 1890, Alpha Messer succeeded in securing a petition of 5000 farmers demanding a new land-grant college for Vermont. Grange members descended upon the state house to present the document.\(^261\) The grange leader reiterated his previous claim that a classical

\(^{259}\) See Charles Flagg Papers, University of Rhode Island Archives.

\(^{260}\) This questionnaire was sent to Charles Flagg “to obtain as definite information as may be in regards to the agricultural colleges in different parts of the country” on September 16, 1892. Charles Flagg Papers, University of Rhode Island Archives.

college and an agricultural and mechanical college had separate aims and values which could not be reconciled. He argued,

Our ideas of practical education may differ somewhat from those who are engaged in teaching in classical institutions in our country. They believe in a well-rounded education, a disciplined mind formed by the study of the classics. We believe that the mind and the eye should be educated together so the great mass of boys and girls in Vermont can go out into the world and grasp the practical lessons in the various avocations of life. Messer concluded by describing what he saw as the “successful” agricultural colleges in Michigan and Kansas. He noted that students gained “valuable lessons to carry him along in life.” In the agricultural department, students learned practical skills like judging and breeding stock, and in the mechanical department “boys were taught to make joints, use blacksmith tools, and do cabinet work.” In all cases, he explained, the professors “combined practical with the theoretical instruction.” Messer declared that such a union of practice and theory was not possible in Vermont, for the farm was three miles away and the professors were more concerned with mental discipline than practical application. It was for this reason, that Vermont needed “a separate and distinct institution with a single purpose before it.”

A week later, fifteen students from the University of Vermont, all on land-grant funded scholarships, presented their own petition on behalf of their college. Three of the boys testified before a senate committee, describing the advantages of having agricultural education connected to the University of Vermont, and informing the senators that “aggie students” were treated with

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263 Ibid.
264 Ibid.
265 Ibid.
the same respect as “regular” students. President Buckham addressed the committee and exclaimed “the land-grant arrangement in Vermont represented a permanent contract and further, farmers’ sons were happy there – I have asked them myself!” After this last bit of theatrics, the state house voted to separate the land-grant funds from the college, but the Senate rejected it by a vote of 18 to 12. The following day, the agricultural press decried the vote, “Lobby Won!” and “dastardly obedience of the Senate to the behest of the ‘culture’ lobby!” The outcome likely stemmed from a combination of Buckham’s reforms, Morrill’s personal and political connections with senators, and a conservative caucus in the senate that foresaw an independent agricultural college as a financial burden. The state grange promised the fight would continue. Morrill told Buckham that “I am overjoyed . . . but I suppose you are not yet out of the hands of the philistines.” He suggested that Buckham obtain “a large workshop, a military hall, and a farm near the college . . . for its must be demonstrated that Burlington is not only a good place to obtain all they want but the best place.”

After the senate vote, the Vermont Assembly went into recess for the year, giving the university plenty of time to invest in additional reforms to buttress the agricultural program against its grange critics. When a joint executive-legislative committee visited the college in 1892, the Governor stated, “The agricultural department has been established on a modern basis having the latest facilities . . . I think it can be said that the agitation that has taken place has been of great benefit to the school.” Alpha Messer wrote Charles Flagg and lamented, “The struggle
in this state before our late legislature was a very hard one with popular favor almost entirely on
our side. For some reason, as yet unexplained, two or three senators went back on us which
killed our bill.” The “unexplained” cause was largely Justin Morrill, who wrote numerous letters
to editors and senate colleagues to defeat the bill. He supplied President Buckham with “some
points [his] attorneys could use” in besting the supporters of the separation bill.273 Morrill
supplied his earlier speech from the Massachusetts Agricultural College to G. G. Benedict of the
Burlington Free Press for publication, in which he explained his broad, liberal, and scientific
purposes for the land-grant act.274 And he wrote Republican colleagues that passage of the bill
would put a “lawsuit on [their] hands,” and with the “aid of the entire Democratic Party” the
grange would take this legislative victory to mean they could “push whatever legislation they
may think proper. . .”275 These efforts of course proved successful, and after the senate vote on
November 25, 1890, Morrill wrote Buckham, “I am rejoiced that the state has been saved . . .
from the folly of exchanging its college at Burlington for a school in some town willing to bond
itself for $50,000 to put up a Mechanics Shop . . .”276 The University of Vermont had weathered
the political storm and this institution supported by Justin Morrill was able to inherit all the funds
from the act that bore his name.

The University of Vermont catalogue of 1890 reveals that many of the grange’s charges
were accurate. The most popular program remained the classical course of which 74
undergraduates were enrolled. Of those graduating, a plurality went on to study at the University

274 Justin Morrill to G. G. Bennedict, November 5, 1890. University of Vermont Archives. Matthew Buckham Collection.
275 Morrill relays his comments to Republicans in Justin Morrill to Matthew Buckham, November 14, 1890.
University of Vermont Archives. Matthew Buckham Collection.
of Vermont’s Medical School and the next highest pursued careers in law. Thirty-one students were in the literary-scientific program, which combined classical studies with the basic sciences of chemistry, botany, geology, biology, and physics. There were 14 undergraduates enrolled in the chemistry program, which mirrored the literary-scientific course but with intensive study of applied and analytical chemistry. The program experiencing the fastest growth was engineering, where 28 students were enrolled (a 50% increase over five years). The most popular career trajectories of graduates of the literary-scientific, the chemistry, and the engineering courses were civil or mechanical engineer, manufacturer, chemist, professor/researcher, teacher, and sole-proprietor businessperson. There were twelve students studying agriculture, but three were advanced international students, two were chemistry graduate students, two were full-time agricultural students, and the rest were taking part-time courses in the summer. Of the two full-time students, one would become a state chemist, and the other a researcher at the state agricultural experiment station. Many of the summer, part-time students were of advanced age, and enrolled in the University of Vermont program as preparation to teach in their local public schools.\textsuperscript{277} Between 1886 and 1891, none of the graduates in any course of study, declared their occupation to be farmer.\textsuperscript{278}

\textsuperscript{277} This information was gained by cross-listing the students names and their home with Vermont Town Reports. It was discovered that several of the students were officials in the local government or teachers within schools. It was clear that these individuals were neither practicing farmers or children of farmers, and were likely attending for scientific interest.

\textsuperscript{278} The data on student program distribution is from \textit{Catalogue of the Officers and Students of the University of Vermont and State Agricultural College, 1890-91} (Burlington, VT: Free Press Association, 1891). The data on career trajectories is from the published list of graduate careers in \textit{Catalogue of the Officers and Students of the University of Vermont and State Agricultural College, 1896-97} (Burlington, VT: Free Press Association, 1896).
Conclusion

This chapter began by introducing Herbert Myrick, a college-educated publisher, agriculturalist, and a “student of cooperation.” In the three cases of land-grant reformation presented here, Myrick always lurked in the background, providing the considerable resources of the Phelps Publishing Company, and serving as link between political agitators in different states. But Myrick is also a reminder of the type of reformers that were influencing the political movement for land-grant reform in the Northeast. He neither resembled the agricultural society gentlemen of previous decades or the radical populists of the Farmers Alliance out West. He was what Scott Gelber calls an Academic Populist:

[an] educated and relatively privileged individual who nevertheless identified with the movement’s ideology and believed that state universities could demonstrate solidarity with the struggles of ordinary farmers and laborers.

Myrick valued and conducted scientific research and graduated from an agricultural college, but was most committed to ensuring that this new knowledge was disseminated and benefited regular farmers. He was adamant that the land-grant colleges were too disconnected from rural communities, and he led the campaign to make land-grant colleges address the ills of farmers. As Rhode Island grange leader Thomas Hazard observed, the clause “education of the industrial classes” had given the Morrill Act its class legislation character. Grangers embraced this clause as tightly as George Atherton and Justin Morrill based their liberal interpretations on the clauses “without excluding other scientific and classical studies . . . in order to promote the liberal and professional education.”

New England, so tailoring the land-grant colleges to the needs of the industrial classes dominated the political discourse.

The grange argued that at Yale’s Sheffield Scientific School, Brown University, and the University of Vermont, high admission standards, a focus on scientific and classical studies, and a dearth of practical application caused the failure to meet the needs of ordinary farmers. Farmer progeny either found no use for attending, or if they did, were lured off the farm into the professional classes. Reformation in Connecticut and Rhode Island brought intermediary institutions with modest academic standards, required labor, and manual training. While these intermediary institutions at Storrs and Kingston produced practicing farmers as desired by the grange, their graduates were also unprepared to enter scientific and technical fields of the new middle class. But when their leaders attempted to respond to student demands for such preparation and advance the curricular offerings, they found little interest amongst grange supporters to stray beyond the strictures of rudimentary academics and manual training. To become eligible for the land-grant funds, however, these institutions had to give up the moniker “school” and become agricultural and mechanical “colleges.” To men like President Washburn, this would mean expanding curricular offerings and raising academic standards above an academy or high school level. The grange would soon realize in dramatic fashion that the new colleges they had fought to create were mimicking the admissions standards, theoretical instruction, and scientific focus of their former masters. This process of elevating agricultural school into colleges would dominate the final phase of land-grant development in the Northeastern United States and is the subject of the next chapter. Grange leaders had won key battles in Connecticut and Rhode Island, but would soon see they had lost the war.
CHAPTER FIVE

The Curious Cases of John Washburn and George Flint and the Forces of Land-Grant Standardization, 1890-1906

“The people are amazed that the management should be in favor of destroying the practical value of the [Storrs] school to imitate other institutions instead of being ambitious to educate young men along agricultural lines so that it will receive the commendation of the government and graduate its pupils equipped . . . to intelligently and profitably carry on any farm in the country. [This] change of character will estrange from it all its old supporters and leave it to the mercy of its opponents of which it seems so earnestly to be a measly imitator.” - Letter from a farmer, Norwich Bulletin, 1901.1

Introduction

When the Kingston Agricultural School and the Storrs Agricultural School were chartered as colleges, both became eligible for federal funds from the Morrill Acts of 1862 and 1890. The campaign for land-grant college status had the unintended consequence of yoking primarily vocational institutions with the standards of an emerging collegiate ideal. In addition to new departures like four-year degree programs, college status also signaled that the quality and scope of curricula, the rigor of courses, and the standards of admission had to increase. In an educational marketplace awash with emerging research universities, public high schools, normal schools, and technical institutes, college administrators were compelled to differentiate their institutions.2

President George Flint of the Storrs Agricultural College and President John Washburn of the Rhode Island College of Agriculture found it necessary to distinguish their offerings and

degrees from the rapidly expanding high school sector in their respective states.³ Rhode Island went from 13 high schools to 19 between 1892 and 1902, and nearly doubled the number of high school students from 1475 to 3473.⁴ Connecticut was a national leader in high school construction, adding twenty institutions during the 1890s. The state commissioner proudly exclaimed that free secondary education was available to 89 percent of Connecticut youth.⁵ During the 1890s, the number of students enrolled in public secondary education nationwide increased 167 percent from 202,963 to 519,291.⁶ This growth resulted in three times the number of “college prep students” and twice as many high school graduates entering the post-secondary market during the decade.⁷ There was also a rigid curricular demarcation forming between the high school and college spheres. Practical training was increasingly available in high school vocational programs, and colleges and universities were positioning themselves as the homes of science, theoretical study, and general culture.⁸ In fact, 90 percent of public high school students were not in college preparatory studies, but terminal programs mixing general, citizenship, and vocational education.⁹ Flint and Washburn believed the high school sector should inherit the responsibility of producing practicing farmers and mechanics, and as such, they sought to shed their practical agricultural education past, and reform their institutions into true state colleges.

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⁷ Ibid., 266.
Land-grant students tended to support this change. Most were interested in pursuing engineering or advanced science degrees and experiencing “collegiate culture” – athletics and student clubs – than tilling rocky soil during required manual labor. Colleges, in the popular mind, were becoming intertwined with social mobility and a new middle class lifestyle. The classroom and the football field were sites for creating the new “college man,” a dominant figure in popular literature and commercial culture. Historian Daniel Clark argues, “college as a viable rung on the ladder of success and as a fit site to form middle-class manhood, one that combined Victorian and modern masculinity, had to be literally created for mass consumption.”

Bygone were days when college boys were depicted as effeminate dilettantes or recluse monks. Popular stories in magazines and books abounded that conveyed the exploits of “big men on campus,” who exhibited a virile masculinity that could be displayed for public consumption on the football field.

The 1890’s witnessed a growing number of students, prepared in public high schools, aspiring to go to college and enter this exclusive cultural domain. Editorial in the agricultural press calling for colleges to return young men to the farm were dwarfed by popular messages

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10 See Frederick Rudolph, The American College and University: A History. (Athens, GA: The American College and University, 1900), 375;
13 Clark, Creating the College Man, p. 19.
that displayed the cultural rewards of going to college, leaving the farm, and joining the ranks of
the new middle class. This chapter begins by presenting the experiences of one young man at
the Storrs Agricultural College during the 1890s as an example of the changing character and
aspirations of the agricultural college student

But for grange leaders who had spent the last two decades fighting for land-grant
institutions with required labor, modest admission standards, and practical farm training, Flint
and Washburn were apostates, and their land-grant counterreformation was heresy. The grange
had worked diligently for institutions that reinforced the values of farmers - hard labor, tradition,
and community – not for gymasia, football fields, and boat-clubs that celebrated the dubious
pleasures of the professional class. They had not circulated petitions and held numerous
hearings to witness the product of their efforts – an independent land-grant agricultural college
mimicking the like of Brown or Yale. But both presidents had strong personalities, made
compelling cases for reform, and largely had the support of their board of trustees in replacing
non-academic instructors, expanding academic programs, and terminating required field work.
Furthermore, the political clout of the new middle class was growing, and according to John
Thelin, college was seen by this group as a way to “increase earning potential” and allow the
“nouveau rich to gain social standing.” Sensing that they had lost their political dominance
over the land-grant question and could lose the debate in official channels, some grange
members began a campaign of lies, distortions, and innuendo against President Flint and

16 Nathan M. Sorber, Making College Manly: Land Grant Colleges, Gender Identity, and Middle Class Formation in
the Nineteenth Century. Research paper presented at the Annual Conference of the Association for the Study of
17 See Chapter 4.
President Washburn. As a result, both men were forced to resign over the public firestorm created by unsubstantiated accusations of institutional mismanagement and moral improprieties.

This chapter presents this counterreformation of land-grant education in New England. It chronicles how external forces and changes in the educational marketplace pushed the schools at Kingston and Storrs towards a new collegiate standard. Specifically, the chapter traces the restructuring efforts of George Flint and John Washburn, as well as the motivations and actions of their detractors. The chapter starts with the story of one land-grant college student. In a series of letters between Max Schaffrath and his twin brother Paul, the changing nature of Storrs Agricultural College comes into full view. It reveals how the old model of agricultural education was falling from favor, and new demands were appearing for Storrs to embrace the collegiate ideal. The institutional shortcomings, described by Schaffrath, would have to be overcome, if Storrs was to take advantage of a growing market of college-bound, high school graduates.

Max Schaffrath: A Student at Storrs at the End of the Century

Max Schaffrath was born on Christmas Eve of 1875 in Bieskaw, Germany. After his father died in 1884, Max and his twin brother Paul, older brother Willie, and their mother immigrated to the United States, settling near wealthy relatives in Waterbury, Connecticut. Schaffrath attended the district school in Beacon Falls, and at the age of eighteen, became a student at the Harrington’s Business College in Waterbury. He graduated in May of 1895, and three months later, enrolled with sophomore standing at the Storrs Agricultural College.²⁹ Twin brother Paul chose a different path, leaving Connecticut for the prestigious Exeter Academy in

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²⁹ A biographical essay on Max Schaffrath was printed in “Storrs College Commencement. This Morning’s Graduation Exercises.” December 9, 1898. University of Connecticut Archives. President Office Records - Koons, Box 1, No. 5.
New Hampshire in 1896. During their time at Storrs and Exeter, the twins penned regular letters to one another, comparing their institutions, and providing interesting insights into the fluid and changing nature of higher education at the turn of the century.

Storrs became a college in 1893 and received all the land-grant funds for Connecticut. The elevation in status resulted in modest changes. Professorships were added in horticulture and veterinary science, a fourth year was added “for more thorough instruction in a specific line,” and graduates could now receive a college degree. The new collegiate charter at Storrs used the exact language from the Morrill Act of 1862:

The leading objects of said college shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches as relate to agriculture and the mechanical arts.

Yet under the conservative leadership of President Benjamin Koons, the college retained several remnants of its agricultural school past. Several practicing farmers remained as instructors in lieu of scientists or academic professionals. Entrance examinations continued to be elementary, leading to 59 largely ill-prepared students enrolling in 1894 and 34 more arriving with Max Schaffrath in 1895. This created a crowded and uncomfortable condition, as the college dormitory was designed to accommodate only 28 students, and additional pupils were herded

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20 Max discusses his brother’s attendance at Exeter Academy on several occasions. The best description is in Max Schaffrath to Paul Schaffrath. Nov. 20, 1896. University of Connecticut Archives. Max Schaffrath Papers, Box 1, No. 1.
21 See letters in University of Connecticut Archives. Max Schaffrath Papers, Box 1, No. 1-3.
23 Ibid.
24 See letters to the Board of Trustees, especially to T.S. Gold, in University of Connecticut Archives. President Office Records - Koons, Box 1, No. 5. As mentioned in chapter four, President B. F. Koons had proposed a plan of advanced study in the early 1880s, but he never pushed his agenda. He remained content to take his cues from the board, especially T.S. Gold, and maintain the status quo. Koons was neither a product of a scientific school or an agricultural college, but a graduate of Oberlin College in Ohio.
into a dining space converted to sleeping quarters.\textsuperscript{26} And as had been tradition since 1881, students were still mandated to conduct manual labor on the college farm. The faculty called it “instructed labor,” the students called it “picking rocks.”\textsuperscript{27} When Schaffrath returned from the fields, he and his classmates sang the following ode:

\begin{quote}
A Freshman once did come to Storrs
As green as green could be,
He went to walk in a nice white shirt
To see what he could see,
But when he saw the rocks that lay
Scattered all over he swore
As a freshman sometimes will and said,
I won’t pick rocks any more

\textit{I won’t pick rocks any more}
\textit{I have picked for years}
\textit{On my Father’s farm and}
\textit{I won’t pick rocks any more.}
\end{quote}

A senior now we will surely meet
Who looking over his course
Thinks of the time spent picking rocks
As either wasted or lost.
And as he looks at the field again
He see more rocks than before
But he simply says, I am going to leave,
I won’t pick rocks any more.\textsuperscript{28}

Max Schaffrath was a serious young man, introspective and reserved. Passing up the chance to enter the hustle and bustle of New York commerce after business school, he was drawn to the quieter and more reflective life of the small town. He came to Storrs because of a budding interest in nature studies and told his mother he was considering the life of a farmer. But

\textsuperscript{26} Ibid., 79.
\textsuperscript{27} Ibid., 83-84.
\textsuperscript{28} This song entitled “The Most Popular Song of the Day” was printed in the college newspaper \textit{The Lookout} in May of 1899. The text of the song was reprinted in Stemmons, \textit{Connecticut Agricultural College}, pp. 83-84.
soon after taking his first trip to the fields, farming no longer seemed so glamorous. Clearing pasture brought bouts of poison ivy and damp conditions caused a string of colds and fevers.29 On one occasion, Schaffrath crushed his fingers, and had to visit the local doctor seven times to have his fingers “opened and cut out.” He admitted to his brother “once I even fainted . . . and had to carry my arm in a sling for nearly a week.”30 The scientific lectures and laboratories were more fulfilling, and the sophomore conceded that “I have received quite an education here . . .” But he quickly added, “Not the kind favorable to my person!” Max Schaffrath had reached an inevitable conclusion that he shared with his twin: “I can’t farm.”31

There were some distractions from the drudgery of student labor. Schaffrath remarked that his football team won three out of five games during the inaugural season of 1896. The following year’s schedule included rematches with local high schools and contests against the agricultural colleges in Massachusetts and Rhode Island - a victory over the latter was greeted by a “parade headed by the band, bon-fires, and the ringing of bells.”32 Schaffrath’s favorite activities were literary society debates. At a typical meeting, he offered a declamation in support of silver coinage, opposing a classmate favoring gold. Judges declared him the winner, and all retired for refreshments. He took up the piano for a short time, taught German for extra money, and received dancing lessons. Dancing ability was quite essential, Max told Paul, for “the young men are allowed to call on . . . the girls . . . every Friday evening.”33 Extra-curricular activities were becoming very important to Max, and he instructed his brother to take them seriously: “I

30 Max Schaffrath to Paul Schaffrath. June 22, 1897. University of Connecticut Archives. Max Schaffrath Papers, Box 1, No. 2.
32 Stemmons, Connecticut Agricultural College, p. 86.
advise you not to study too much,”34 and “stand up for your class and try to make it the star of Exeter Academy.”35

As Paul Schaffrath relayed his own “college” experiences in New Hampshire, Max longed for an institution like Exeter. He wrote,

It almost makes me mad to hear how [your] professors go with the students for enjoyment and see ours here just go to class and that is the last you come in contact with [them] . . . The friendly or social spirit is wanting at Storrs . . . 37

More regrettable than the lack of collegiate spirit, however, was the dearth of young women. Max pestered his brother with questions like “When you have entertainment, have you any girls to dance with?”38 After hearing how much Paul liked his bright classmates, Max lamented, “this is a college . . . but when I look over our graduates I see not one of them . . . is a person of any ability.” It was becoming evident that he was working very hard but not getting the college experience he desired. He concluded, “I spend from 3–4–5 hours a day on my lessons. Your college is not as hard as ours because you don’t take care of your rooms and don’t have to work.”39 In December of 1896, an elocutionist came to campus and entertained the students. The young visitor was only three years older than Max, and informed the wavering sophomore that with his literary society background, he too could make $100 on the lecture circuit. Even more exciting, was when the man stated that “with his influence,” Max could be admitted to the

36 After the first few letters, Max stops referring to his brother’s institution as an academy and calls it a college. There had been no official change at Exeter. It is likely that the brothers found so many similarities in their institutions that the same nomenclature was adopted for both.
37 Ibid.
39 Ibid.
academy in East Greenwich. He asked his brother “What do you think about it?” Max then added, “This is a very important question . . . and don’t let mother know!” 40

Max Schaffrath requested a catalogue from East Greenwich (Kent Academy) and planned a visit to the campus. In the end, he decided not to make the trip. Circumstances were changing, as Storrs students were becoming more content with their surroundings. The major change was the abolishment of mandatory labor in 1897. This allowed more time for study and more opportunities to enjoy the bourgeoning collegiate culture. After escaping a scare from an explosion in chemistry lab, Schaffrath began to excel in his scientific studies and finished third in academic standing. Out of class, he continued with football and the literary society, and was elected student body president. On June 9, 1898, Max wrote, “This will be the last letter from Storrs to you. I am very glad you will be here with us during commencement.” As president of the class, he would give the student commencement address in addition to his graduation essay “German Village Life.” 41 He apologized in advance that many of the other essays would deal with agricultural topics, but stated, “of course this is an agricultural college and quite suitable.” Perhaps not surprisingly, he concluded his last of nearly forty letters by congratulating Paul that “Exeter was booming in athletics,” and his final words were, “Here, athletics are dead . . . for the senior class is about to leave and the juniors have no athletes.” 42 Two weeks later, the twin brothers celebrated Max’s graduation with a three week trip to Germany. 43

Max Schaffrath’s educational journey did not end in 1898. Suggestive of the substandard quality of a Storrs degree, he entered the Massachusetts Agricultural College – again at

40 Ibid.
41 “Storrs College Commencement.” June 1898. Copy retrieved at University of Connecticut Archives. President Office Record – Koons, Box 1, No. 5.
42 Max Schaffrath to Paul Schaffrath. June 9, 1898. University of Connecticut Archives. Max Schaffrath Papers, Box 1, No. 3.
sophomore standing – from which he would graduate in 1901. Now in his mid-twenties, he was less interested in collegiate life and more intent on nurturing an advanced knowledge of chemistry and engineering. After graduating, Schaffrath moved to California to accept a job as the superintendent of the pipe line division at Standard Oil. He remained in California until his death in 1964. His brother went on to Yale, received his B.A., and became a successful attorney in Seattle.

President George Flint and the “War of the Rebellion”

The year that Max Schaffrath graduated from Storrs, longtime president B. F. Koons was pressured to resign his post. The kindly President Koons was well-liked by many, but the trustees were looking for a stronger leader who could turn the local-serving institution into a state college. George W. Flint was appointed to fill the vacancy on July 1, 1898. He was not an obvious choice for the presidency. In fact, his candidacy was largely the product of a personal relationship with board chairman, William Edger Simonds, the most outspoken trustee for reform. Flint was reared on a farm in Maine, received preparatory education at a district school and academy, and graduated from Bates College in Lewistown, Maine. He taught classical languages at a private academy before accepting high school principalships in Maine and New York. For twenty-five years prior to his appointment as president, Flint was principal and teacher of Latin at the high school in Collinsville, Connecticut – Trustee Simonds’ hometown. When

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44 Massachusetts University, Catalog of Graduates and Former Students of the Massachusetts Agricultural College. (Amherst, MA: Author, 1916), 36.
45 Ibid.
46 Ibid.
47 Ibid.
48 Stemmons, Connecticut Agricultural College, 97-98.
50 A brief biographical synopsis on Flint is available in Stemmons, Connecticut Agricultural College, 97-98.
the board appointed him to succeed Koons, he was regarded as one of the leading education administrators in the state.

Figure 5.1. Photograph of the Faculty of the Connecticut Agricultural College, 1899.

On December 15, 1899, George Flint made his first address to the Connecticut State Board of Agriculture on his plans for the Storrs Agricultural College. In a twenty-four page address, Flint reserved only one line for agricultural education:

We have been earnestly and heedfully giving attention to the instruction of our youth in Agriculture and its kindred arts . . . [and] we have gained a clearer view of the limitations as well as the extent of the field assigned to us for exploration . . .

The bulk of his lecture, however, addressed the “unfortunate vagueness in the use of the term, college . . .” There were numerous institutions that claimed to be colleges (i.e. business, agricultural, literary, industrial, etc.), Flint argued, but little agreement existed as to what this

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51 Typescript copy of President George Flint’s address to the State Board of Agriculture. University of Connecticut Archives, T. S. Gold Papers, Box 6, Folder 9. Quote on p. 2.
52 Ibid., p. 3.
title conferred. He opined that the institutions most worthy of being called “colleges” were those “training men for success in the highest sense, in any calling.”\textsuperscript{53} And this preparation was not aimed at instilling vocational skills, but developing a cultured mind through a breadth of liberal studies. The “greatest colleges” cultivated an appreciation and knowledge of the “best and richest in literature and art . . . enrich[ed] the mind with the stores of history,” and established the “most satisfactory . . . ideals for private, domestic, and civic life.”\textsuperscript{54} The study of science was embraced in these leading colleges, Flint added, to not only provide “preparation for active life” but for instilling “elements of that higher culture for which we all strive.”\textsuperscript{55}

It was certainly a surprise to some in the audience when Flint asked, “And can we, the humbler Connecticut Agricultural College . . . claim no share . . .?”\textsuperscript{56} The new president presented an audacious new purpose for the college: students should “be fit to understand the ideas and truths that are common with all fellow-citizens,” develop the “characteristics of an upright and good citizen,” and receive the “general instruction” that allows “the privilege of acquiring special training, as will fit him for his special calling.”\textsuperscript{57} The third goal is especially noteworthy. Flint announced that the college would not have a direct practical aim, but instead, offer “general instruction” in the arts and sciences as a preparatory foundation for graduate studies or professional training in the sciences, medicine, law, and engineering.\textsuperscript{58} The former principal also wanted to position the colleges above secondary education, leaving the high school as both the site of college preparation and the domain of manual, vocational training. The “education of the hand and eye” had found a home in “the high schools with facilities for shop-
work,” he argued. Reflecting upon his own experience at Collinville High School, Flint concluded that high school vocational programs were the appropriate place for students not destined for college to prepare “for a specific calling . . . to contribute something to the industry of the world.” And while he added that the Connecticut Agricultural College would continue its interest in “the scientific study and application of the arts to agriculture,” it was clear that under President Flint, creating practicing farmers would not be the leading purpose.

Having led an educational institution for twenty-four years, President Flint was not accustomed to waiting to implement his ideas. His speeches were not starting points for discussion, but public notices of impending reforms. One of his first acts as president revealed his ambitions: spearheading the effort in the legislature to rename the Storrs Agricultural College as the Connecticut Agricultural College. The change sent a signal; no longer would the institution be a local affair of limited scope, but a college serving the needs of the entire state. Flint wanted to remove the last vestiges of the agricultural school days and usher in a modern college. He supported the termination of the old manual labor requirement, and was intent on nurturing the budding campus culture as an important component of a well-rounded education. But a radical reformation would require more than a name change and college football, it would demand major revisions to the curriculum and faculty. When President Flint took office in 1898, the only Ph.D. on the staff was the ageing former President Koons, and the remaining professors had either A. B. or B.S. degrees from literary colleges or were not college graduates. Flint wanted to redistribute personnel and resources away from practical agricultural studies and

59 Ibid., p. 10.
60 Ibid. p. 10
61 Ibid., p. 23.
62 Stemmons, Connecticut Agricultural College, 98.
63 Ibid., 110.
64 For a listing of college faculty and their educational background see “Anarchy at Storrs,” Hartford Courant, Oct. 28, 1900.
towards a liberal arts and science program. The departure of longtime chemistry and physics professor A.B. Peebles in 1899 provided the first opportunity to reshape the faculty ranks. Peebles had been a candidate for the presidency, but when he was passed over, he left the college. Flint was instrumental in recruiting Campbell E. Waters, a Ph.D. in chemistry from John Hopkins, to campus. Waters was an accomplished scientist, a well-published expert on ferns, and the exact type of new academic professional that Flint wanted to populate his state college.

By the summer of 1900, the full extent of President Flint’s reform agenda was revealed, when he called for the resignation of five faculty members. Four of the five professors were connected with the agriculture program: Nelson Mayo, professor of anatomy, physiology, and veterinary science, Henry Ballou, assistant professor of forestry and botany, Charles Myers, instructor in farm accounts and business methods, and Alfred Gulley, professor of agricultural science. The board did not concur with Flint’s demand to remove Gulley and he was retained. Gulley was a Michigan Agricultural College graduate, horticulturalist, and leader of the Pomological Society, and after surviving the faculty purge, he would go on to serve the college for another seventeen years. No one came to the rescue of Professors Mayo, Ballou, and Myers, however, and their relations with the Connecticut Agricultural College were severed. The board noted that Ballou’s performance was satisfactory, and he was only being removed “in view of a scheme of proposed changes and rearrangements” to the curricula. They had no kind words for Mayo and Myers, as both were charged with being “undiplomatically frank in expressing

65 Stemmons, Connecticut Agricultural College, 110.
66 Stave, Red Brick, 7.
67 Ibid.
69 See “Anarchy at Storrs,” Hartford Courant, October 1900.
70 Stemmons, Connecticut Agricultural College, 155.
opinions of the president” and for having “unsatisfactory personalities.” The two men had been the most vocal critics of the president’s reforms.\textsuperscript{71}

Nelson Slater Mayo was a graduate of the Michigan Agricultural College, a former professor of veterinary science at Kansas State Agricultural College, published expert on animal digestion, and an adamant detractor of George Flint.\textsuperscript{72} Outspoken and abrasive, Mayo only arrived in 1897, but immediately criticized the president for policies that subjugated agricultural subjects in favor of the liberal arts.\textsuperscript{73} The young veterinarian was no radical populist, however, for he was one of thirteen professors fired at Kansas State when the Populist Party won control of the board of trustees.\textsuperscript{74} He was an agricultural scientist, and his ideal models of land-grant education were the Michigan and Massachusetts Agricultural Colleges: institutions in which the study of science and its application to agriculture were the leading aims. Henry Arthur Ballou was a graduate of the Massachusetts Agricultural College and a promising entomologist. He also believed that the Connecticut Agricultural College should follow the example of his alma mater, and he became Mayo’s chief collaborator.

Between 1898 and 1900, Mayo dismissed Flint’s leadership in private and in public. He visited grange halls and wrote colleagues to warn Connecticut was losing its agricultural college. Faculty left meetings in fits of rage as competencies and motivations were questioned, and the

\textsuperscript{71} See “The Storrs Trouble: A Review of the Agricultural College Case,” unknown date, copy available in President Stimpson Papers, Box 1, No. 4.
\textsuperscript{73} See The Country Gentleman, Vol. 66. (Luther Tucker & Son, 1901), 647.
\textsuperscript{74} See collection description of Mayo Family: An Inventory of Their Papers at the MSU University Archives and Historical Collections. Available at http://archives.msu.edu/findaid/040.html. On the Kansas case see Scott M. Gelber, Academic Populism: The people's revolt and public higher education, 1880—1905 (Diss. Harvard University, 2008).
entire community split into factions.\textsuperscript{75} Flint and his supporters on the board of trustees decided the spectacle had persisted too long, and the outspoken faculty members were forced to resign in July of 1900. Mayo returned to Kansas State (the Populist Party had been defeated and the institution was again in friendly hands), and Ballou continued his academic career in the West Indies. Having removed a major obstacle to his agenda, Flint dropped the ageing T. S. Gold an optimistic line, “I hope the troubled waters will quiet down, and give us pleasanter sailing after a time.”\textsuperscript{76}

President Flint had tried to keep the campus row private, but with Mayo’s whistle blowing, it did not take long for the infighting to become public. Newspapers editors dubbed the conflict “The War of the Rebellion,” and devoted page after page to investigating the college.\textsuperscript{77} Several newspapers claimed that Flint, a former teacher of Latin and member of a classical language association, would make Storrs a classical college, replacing agricultural studies with ancient languages.\textsuperscript{78} The \textit{Hartford Tribune} editors warned the people that Flint was planning to “place agriculture in the background and have science the foremost study.”\textsuperscript{79} The \textit{Hartford Courant} editors explained that it was not simply an effort to add science or classics, but an attempt to offer everything:

The president’s idea, it is understood, has been to add ‘special courses’ rather than make a classical college. ‘A little bit of everything’ would seem to be the notion of what an agricultural college ought to teach . . . \textsuperscript{80}

\textsuperscript{75} See “College Divided: Alleged Source of Trouble at CAC,” Hartford Courant, Aug. 27, 1901.
\textsuperscript{76} George Flint to T. S. Gold. University of Connecticut Archives. T.S. Gold Papers. Box 2, Folder 32.
\textsuperscript{77} Stave, \textit{Red Brick}, 8; Stemmons, \textit{Connecticut Agricultural College}, 97.
\textsuperscript{79} Cited in Stemmons, p. 108.
\textsuperscript{80} “Salons Visit Storrs,” \textit{Hartford Courant}, May 19, 1901.
The authors argued that Flint’s support for abolishing manual labor on the college farm “had proved a serious damage,” and many of the removed faculty members – “working professors of the college” – were “strong advocates of the rule that makes students do some work.” 81 Some editors claimed Flint’s controlling style, disrespectful manner, and quick temper led to campus unrest and faculty dismissals. 82 The New Haven Register countered that the president actually had “most excellent personal traits . . . [but] not one iota of training or fitness for the presidency of an agricultural college . . . and absolutely no appreciation of the purposes or needs of the school.” 83 The benign explanation of the American Association of the Advancement of Science was probably the most accurate: “Four members of the faculty of the Connecticut Agricultural College . . . have been asked to resign, as a result, it is said, of their opposition to the policy of President Flint.” 84

As Flint was maligned in the press, his friends on the board of trustees came to his defense, likely with his approval. In the Farmington Journal, supporters argued that Flint’s boyhood experiences on the farm, his thoroughly liberal education, and years of administrative experience made him well-suited to lead the college. 85 His opponents had relied on distortions of his record, his friends declared, and his reforms were necessary to maintain the institution’s usefulness and increase its enrollment. Flint’s supporters conveyed the following assessment of the college’s challenges:

No institution confined to students from Connecticut and teaching agriculture ALONE can live; the agricultural constituency in Connecticut is far too small; it is far too small in any state; no one is going to send a young man to a three year course in agriculture

81 Ibid.
83 “Storrs School Difficulty,” New Haven Register, August 8, 1901.
84 American Association for the Advancement of Science, Science, XIV, No. 344, p. 192.
85 “President’s Friends,” Hartford Courant, Aug. 24, 1901.
ALONE . . . President Flint has realized from the first that the college can never have any standing upon agriculture ALONE; wherefore he had reorganized the course of study, strengthened agriculture wherever possible, but calling in liberally educated professors and laying out among other things broad courses of education in English and civics . . . 86

Flint’s friends explained that the president understood that a college education needed to provide more than just practical benefit. The purpose of a collegiate education was “the training of the faculties of observation, reason, and expression.” 87

The grange was not about to remain idle amidst clamoring that their school was minimizing agricultural studies. J. H. Hale was again fighting for his land-grant vision in Connecticut - six years after the Yale-Storrs controversy. Although advanced in age, Hale worked though the summer of 1901 with the same energy he exhibited years prior, and rallied grange members to save the rebellious institution. He declared that the Connecticut Agricultural College could still fulfill its promise, it had just fallen under the control of a “mighty poor farmer” who “favored classical study.” 88 Grangers resurrected their practical education arguments from 1893, noting that “Connecticut has room for a lot of . . . farmers, and it wants them. What is needed is a first-class man at the head of [Storrs] to make it go. . . [to] train young men to be that type of farmer. . .” 89 Others bemoaned the blatant nepotism at the college, pointing to President Flint’s dubious decision to appoint his brother-in-law to a full time faculty position and hire his son to teach physics courses. On August 22, 1901, two hundred farmers turned out for a meeting of the Connecticut Pomological Society and endorsed a resolution that “demanded a housecleaning at Storrs . . . [and] the immediate resignation of President Flint.” 90

Present at this meeting was H. T. Morse, whose son was presently enrolled at the Connecticut

86 Farmington Valley Herald, April 6, 1901.
87 Ibid.
88 Comments printed in the Hartford Courant, June 20, 1901.
89 Hartford Times, August 12, 1901
90 For a reprinting of the entire resolution see Stemmons, Connecticut Agricultural College, p. 101.
Agricultural College. Morse stood before the farmers and made some serious accusations. After hearing from several farmers that “they would never send their sons to Storrs,” he and his wife made a visit to campus to visit their son.\footnote{See \textit{New England Homestead}, August 24, 1901.} Upon arriving in the dormitory, Mr. and Mrs. Morse observed halls lined with boys smoking, chewing, drinking, and swearing. The floors were so filthy that “Mrs. Morse had to lift up her skirt in passing.”\footnote{Ibid.} His son had also shared troubling information that the president regularly made quips to “slight agriculture for other branches.” On August 24, 1901, the \textit{New England Homestead}, still under the editorship of Herbert Myrick, published Morse’s accusations in their entirety.\footnote{Ibid.}

President Flint had been content allowing others defend his leadership in the press, but after reading Morse’s damning anecdotes, he impulsively broke his silence to address what he believed were malicious lies. On August 26, 1901, Flint penned an open letter in the \textit{Hartford Courant}.\footnote{“President Flint. Writes Open Letter to Mr. Morse,” \textit{Hartford Courant}, Aug. 26, 1901.} If the president thought entering the debate could remedy the deteriorating public image of the college, he was mistaken. His sensational letter was reprinted by numerous papers, and what had been a local affair, now became fodder for newsmen, grangers, and public officials statewide.

Flint began his letter by taking issue with Morse’s claims that his son’s roommate was a “roaring drunk.” The president admitted that there was an instance of the young man becoming intoxicated on sweet cider, but the student was forgiven, for Flint believed in the “exercise of charity and Christian kindness toward the wayward.” He informed the public that Morse was unaware that that the roommate was “the son of a widow,” and if he had heard the mothers’ pleas
for her son to have “a chance of his life to become a man, an intelligent citizen,” then Mr. Morse, as a Christian, would have reserved his harsh judgment. In regards to tobacco use, Flint conceded that some students smoked, but young men are “acknowledged imitators,” and they were partaking in what had become a “national custom.” Presidents of the United States, professors, clergymen, and students’ fathers all smoked, so he asked “what will you do about it?” Every campus provides opportunities for sin and transgressions, Flint preached, for “the best location you ever heard of for an agricultural college was the Garden of Eden, and temptation was there.” Finally, the president directed Mr. Morse to ask his son to “recall his conduct” at midnight on the night of March 25th. Flint was sure that his activities, which were investigated by the “committee on discipline,” would be much more shocking than “the smoking of other boys.” The committee had recommended expulsion, but Flint was “actuated by a human feeling for you [Mr. Morse] as a father, and for the mother.” The president explained that “I am very slow to put my seal upon the lifelong disgrace attached to a boy expelled for such a cause.” Flint closed his letter by acknowledging that “perhaps he did lack in discipline . . . but there is another chapter to the story of the Connecticut Agricultural College, and when it is written and published, it will afford as interesting reading as anything yet given to the press.”

For the next three weeks, the open letter was attacked, defended, or ridiculed. Editors were amused that Flint portrayed himself as some benevolent saint. Others chose to highlight the president’s unbridled “charity” as proof that the campus lacked discipline. Most often, papers presented the saga as pure entertainment. The following is a representative headline: “Mr. Flint’s

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95 All quotes in this paragraph are from President Flint’s open letter, Ibid.
96 The most successful retort of this kind came from Mr. Morse himself, when he penned a reply in “C. Z. Morse Writes. Reply to President Flint’s Statements,” Hartford Times, Aug. 27, 1901. Morse noted that Flint had “practically admitted” to the charges.
Open Letter: One Student Got ‘Cider to Drink’ But Temptation was in the Garden of Eden.”

One newspaper editor explained why the letter had become such a public sensation,

   The greater number of open letters [sic] are not worth the room they occupy in the newspapers, but this one is too valuable a contribution to the agricultural literature . . . [as] Mr. Flint intimates that leniency was shown to a son of Mr. Morse.

He adds that the people are eagerly waiting for “another chapter” to hear the rest of the story, which was sure to be “damn interesting reading.” The intrigue continued when Mr. Morse revealed his son’s antics in a second letter. The father admitted that the boy had joined with seven others to kidnap a pig and set it loose in the dining hall, and “this boyish caper” was his only wrongdoing. This public airing of the campus’ dirty laundry had become an embarrassing affair. Flint had hoped that by sharing his acts of compassion, the public would view the president’s management of the college in a more favorable light, and Mr. Morse would retract his accusations or be moved to silence. Instead, he only fanned the flames.

During the course of these events in August of 1901, Dr. Campbell Waters, chemistry professor and Johns Hopkins Ph.D., resigned after less than a year. He had hoped to find a collegial academic environment to pursue his research and teaching like he had enjoyed at Johns Hopkins, but his entire stay at Storrs was marred by a string of personal disputes, political infighting, and public ridicule. Waters shared with one reporter his main impetus for leaving: “the total lack of discipline among the students and the utter inability of President Flint to establish and maintain it.”

97 See “Mr. Flint’s Open Letter,” unknown date, copy available at University of Connecticut Archives, President Stimpson Papers, Box 1, No. 4.
98 Ibid.
99 Ibid.
100 “C. Z. Morse Writes. Reply to President Flint’s Statements,” Hartford Times, Aug. 27, 1901.
101 “Storrs Loses Another,” Hartford Times, Aug. 9, 1901.
102 Ibid.
without passing examinations, others refusing to study and not facing consequences, and “an instructor . . . assaulted by a student [whom] had a tooth loosened in the mêlée . . .” President Flint only required the student to apologize, and Waters was not sure if the boy ever did.

The college lost its most promising scholar, and his claims against Flint proved devastating. It seemed to verify Mr. Morse’s statements and suggested that the president’s forgiving “charity” was undermining the institution’s effectiveness. Detractors had found Flint’s weakness. The president defeated a vote of removal months earlier, as the board largely supported his reform agenda. But by September, the situation was quite different. No matter how many accusations were true, the public now believed the campus had lax moral standards and was in precipitous decline. Students supporting ousted faculty members declared they would not return to campus. Grangers called on farmers to keep their sons at hope until Flint was replaced. Newspapers reported no new students had presented for admission examinations in the towns of Danbury, Hartford, New Haven, or Norwich. Friends of Yale declared the new land-grant venture a failure and demanded land-grant funds be returned to the Sheffield School. The Connecticut State grange smelled blood in the water and passed a resolution at a special meeting.

103 Ibid.
104 See “The Storrs Trouble: A Review of the Agricultural College Case,” unknown date, copy available at University of Connecticut Archives, President Stimpson Papers, Box 1, No. 4.
105 “Row Over Farmers’ College,” New Haven Register, Sep. 4.
106 Stemmons argues in Connecticut Agricultural College that this point was not substantiated. A group of students had left the college for a camping trip in September and a rumor was circulated that they had gone on strike. Some of the students informed Stemmons that they had no intention to embarrass the administration. See p. 109 footnote.
107 For example see “Statements of the State Press – The Opinion of a Grange,” Hartford Courant, June 20, 1901 and “CAC Changes,” Hartford Courant, July 20, 1901.
We call upon the board of trustees . . . to meet promptly and take such action as will secure the resignation of President Flint, and offer to the people of the state some hope for the future of the college.\textsuperscript{109}

B.C. Patterson, grange leader and trustee of the college, led the campaign at Storrs for Flint’s ouster. “We must do what the people want us to do . . . for the good of the college,” Patterson declared.\textsuperscript{110} On October 5, 1901, the board of trustees requested the president’s resignation, and George Flint dutifully obliged.\textsuperscript{111}

George Flint’s trying three years at Storrs were but a small blemish on an otherwise laudatory career. He is not recalled fondly by historians, no college buildings bear his name, and if remembered at all, it is as the president that nearly destroyed Connecticut’s land-grant college. Flint had numerous personal failings and the authoritative management style that he imported from his days as a high school principal did not serve him well when dealing with an equally willful faculty. And while his benevolence towards troubled students reveals a compassionate man, it also uncovers a dithering leader who failed to maintain an environment conducive to student learning.

The battle with the faculty was more than a conflict of personalities and style, however. George Flint was committed to taking the unpopular but necessary steps to mature a farm school into a state college. Like Max Schaffrath, Flint wanted a more academically talented student body, a liberal selection of arts and sciences courses, and a strong collegiate culture to nurture the next generation of Connecticut leaders. As a former principal, he understood that if Storrs remained an agricultural school, it would come into competition with publically supported high schools that it could not hope to best. The future, to Flint, was an intermediate role between the

\textsuperscript{109} Hart\textit{ford Times}, August 12, 1901.
\textsuperscript{110} Ibid.
\textsuperscript{111} Stemmons, \textit{Connecticut Agricultural College}, 104.
high school and the university.¹¹² But many farmers still staked claim to the Morrill land-grant, and rapid reforms that were perceived to go against their interests, were sure to face stiff resistance. Major changes to the direction of land-grant education had to incorporate the values and educational needs of a broad coalition of parties - scientists, farmers, academics, engineers, businesspeople, and state officials – that supported the colleges for a host of conflicting reasons. President Flint’s career came to an end in his quest for a state college, and it would be his replacement – Rufus Whitaker Stimson - that achieved this goal by attuning the college more closely to the needs of its large and diverse constituency.

Rufus Stimson’s credentials should have distressed the grange as much as George Flint’s. He was a graduate of Harvard and Yale, a philosopher, and a professor of English language and literature.¹¹³ The new president was the exact opposite of Flint; he was young, energetic, and had no administrative experience. And while he too agreed that the institution’s future was as a state college, he appreciated, much more than his predecessor, the complex, political dynamics of land-grant education.¹¹⁴ As such, he moved reforms forward slowly and strategically.

Foremost, President Stimson was a publicist, an excellent speaker whose eloquent addresses were reprinted in a rapidly expanding print culture.¹¹⁵ Reaching out to the college’s recent critics, he immediately attended grange and Pomological Society meetings to reassert the college’s commitment to the farmers of the state.¹¹⁶ And Stimson gave the farmers more than rhetoric; he had new programs to promote. The summer initiative “Agriculture and Nature

¹¹² Flint’s plans to position the college between the high school and the university seems to fit squarely within the dominant mood of the times. See Geiger, “Crisis of the Old Order,” 264-276.
¹¹⁴ Ibid.
¹¹⁵ See ibid.
¹¹⁶ See Ibid. It is interesting that the Pomological Society, which had been the leading critic of the college in 1901, was by August of 1902, holding its annual meetings at the college. See “Fruit Raisers Meet,” Connecticut Farmer, Aug 9, 1902.
Study” was a part-time course for farmers and public schools teachers, which was celebrated as a success across the state. He also hired F. H. Stoneburn to lead a new poultry agriculture program, which was becoming a profitable industry in Connecticut. Stimson’s scheme was to provide an assortment of programs for diverse constituents: regular four-year collegiate courses, special part-time courses in general and poultry agriculture, and the summer program. The collegiate four year course grew rapidly to eight-five (up from sixty in 1899) and the new summer school for teachers and farmers had eighty-four students. The grange was so pleased with the new direction that they joined President Stimson’s call for increased appropriations. In March of 1903, less than two years after the grange led the campaign against the college, new grange master B.C. Atterson stated,

The institution has passed through some serious times but the tide has turned and now the institution is heading in the right direction and is fast forging ahead . . . The farmers are more and more appreciating this college and the work it does. I believe it needs help from the state and I believe such help ought to be given it.

Connecticut’s land-grant college had found a way to broaden its offerings to serve both the likes of Max Schaffrath and the grange. In doing so, Stimson had reached the three-prong standard of the modern state land-grant college: collegiate study for middle class access, special practical courses for practicing farmers and workers, and research and extension. Flint received no credit for his part, but did get vindication.

117 See “Hearing on S. J. R. 91, S. J. R. 92, and S. J. R. 118, all of them relating to appropriations for the Connecticut Agricultural College.” Retrieved from University of Connecticut Archives. Legal and Legislative Record Collection, Box 1, No. 4, 5.
118 Stemmons, Connecticut Agricultural College, 115.
119 “Hearing on S. J. R. 91 . . .”, pp. 4-5.
120 Roy Scott argues in The Reluctant Farmer: The Rise of Agricultural Extension to 1914 (University of Illinois Press, 1970) that it took decades to move land-grant colleges towards the concept of extension. Once this was realized, and land-grant colleges succeeded in meeting the needs of multiple constituencies, bringing the era of heightened polarization on the land-grant question to an end.
“Profane, Vulgar, Unclean, and Unchaste in Speech and Behavior”

John Washburn was a man of “boundless energy,” who worked incessantly on behalf of the Rhode Island College of Agriculture and Mechanical Arts for over a decade (1887-1902). He never missed a meeting of the Board of Managers, traveled across Rhode Island speaking at grange halls, state fairs, and high school graduations. The president was obsessed with detail, serving regularly on committees to overseen the minutia of curricular, budget, and personnel matters. He enjoyed his teaching role, and according to one of his charges, “the students not only liked him, but he made a lasting impression.” Unlike in Connecticut, the campus was largely harmonious, and there was little evidence of discontent within the faculty ranks. Upon arriving in Kingston in 1887, Washburn had courted and married Martha Merrow, joining one of the most respected families in Rhode Island. His wife was the daughter of Joseph B. Merrow, proprietor of J.B. Merrow & Sons Stockinet Manufacturing and “one of the best known men in Tolland County.” In 1892, Washburn and his wife were raising their two young children in the new president’s house, and it seemed to most observers that the forty-two year old Göttingen Ph.D. would commit his entire career to the Rhode Island land-grant college.

123 “Typescript of Dean Adams talking to Dean Weldin” Oral History Project (May 1958, unpublished manuscript). University of Rhode Island Archives. Hereafter cited as “Adams Interview”.
Despite his campus support and family connections, Washburn always had the uneasy feeling that his job was in jeopardy. In some ways, it stemmed from his apparent discomfort in his own skin. Washburn knew that his short stature and rotund carriage were his most prominent features, and he tended to make jokes at his own expense to deflate the attention given to his physical attributes. Washburn had also caught wind of a “rebellion against him” brewing in the village of Kingston. Many villagers had come to view the college “as a joke.” The local political appointment to the board of managers was a Kingston man that was caricatured as an “effeminate dandy,” who would have young girls comb his hair, and then say in the mirror.

125 Retrieved from The URI History Project Timeline of the University of Rhode Island Website. See http://www.uri.edu/home/image/johnjoseawashburn.jpg
126 See “Adams Interview,” and “Typescript of Donald Webster talking to William Clarke, Class of 1898” Oral History Project (Unknown date, unpublished manuscript). University of Rhode Island Archives. Hereafter cited as “Clarke Interview.”
128 “Clarke Interview.”
“Aren’t you a handsome fellow.”129 According to one local, farmers connected this man with the refined, waddling Washburn, who they saw as equally alien.130 And the more the “school on the hill” moved away from practical farm training and embraced college status, the more foreign it became to the local agricultural community.131 In 1898, Washburn was offered the presidency of Idaho’s land-grant college, but to address his persistent fears, he informed the board that he would remain if a public statement of approval of his presidency was issued. The bemused board of managers had received no complaints about Washburn, and had been in full support of his agenda; they unanimously issued the statement. Pleased with the result, he returned to his work. However four years later, Washburn’s fears were justified, when a nasty, public campaign commenced to remove him from office.

At the end of 1901, Rhode Island Governor Charles Kimball began receiving vague complaints about John Washburn. He largely ignored the letters until January of 1902, when he was forwarded grievances against the president that were “extremely grave.” Kimball moved a resolution through the assembly to empower the Board of Managers to “summon witnesses, compel attendance, and administer oaths.”132 He then visited the board in March to discuss an investigation and hearing on the hereto undisclosed charges against the “character and reputation” of Washburn.133 After the meeting, Kimball informed a reporter from The Providence Journal that “various people, largely from South County [the Kingston area]” had

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129 Ibid.
130 “Adams Interview.”
131 “Clarke Interview”; “Adams Interview”; Eschenbacher, The University of Rhode Island, 118-9.
133 Eschenbacher, The University of Rhode Island, 121.
regularly complained to his office about the conduct and effectiveness of President Washburn and demanded his removal. Washburn offered the following retort:

[There are] a few men in this vicinity who would be glad to see me deposed . . . [but] I understand as result of the meeting today it was decided not to take any further action on the matter unless the charges against me were presented in writing. I am thoroughly satisfied with this action and if such charges are presented I shall be ready and willing to meet them, as I have no fear of the result before such an impartial tribune.

Five days later charges appeared, not in a formal letter, but in a newspaper article.

On March 30, 1902, the article appeared in the Providence Journal, in which the author presented the view of Washburn’s “opponents” and offered one-sided commentary. It noted that the president had “stood by contentedly and witnessed the steady backward trend” of the college. One source claimed that when the Kingston School first became a college, it had eighty pupils in the four classes, but less than a decade later, it was down to thirty-three. The author had done his own investigation of the college catalogue, and found that the administration claimed to have 175 students. This amounted to nothing more than the “art of padding,” the author surmised. For there were forty students in the preparatory class, nearly a hundred students in special summer courses of which some lasted but a week, and only thirty-three full-time students in the college course. Of the full time cohort, the author concluded, only twenty-two were from Rhode Island. The Providence Journal continued its public case against Washburn five days later by revealing a discovery that only six of the graduates during Washburn’s presidency were practicing farmers, and just one current student was pursuing the Bachelor of Science in agriculture. This article ended with the claim that enrollment was depressed because the “college” had diverted from its agricultural roots for sciences and engineering and had raised

135 Ibid.
136 The proceeding quotes in the paragraph were all from “John Hosea Washburn,” Providence Journal, March 30, 1902.
entrance standards out of the reach of the common farmer. This had all been done, the author suggested, with the blessing of John Washburn.137

From the comments in the two articles, Washburn believed he knew the charges against him and was confident he could answer them sufficiently. With the consent of the board, he wrote a response letter to the Providence Journal that was published on April 6, 1892. Washburn believed there were three areas of dissent: a curriculum that had expanded beyond agriculture, the number of enrolled students, and the rigor of the entrance examination. In defense of his support for degree programs in mechanical and electrical engineering, chemistry, and biology, Washburn returned to the language of the original Morrill Act. He argued, “In this foundation act, agriculture and mechanical arts are placed on the same basis, and classical studies are encouraged.”138 Washburn also quoted a recent report of the Association of American Agricultural Colleges and Experiment Stations:

No one can find in any part of the Morrill bills any authority for the establishment and support of schools exclusively for agriculture . . . no narrow, one-sided technical school is authorized anywhere in the bills. The teaching of trades, the forcing to farm labor and the neglect of the cultural in education can find no authorization . . . 139

The president presented three areas of technical studies available at the college, “in agriculture, in the mechanical arts, and in the sciences,” and argued that in these degree programs the students gained a sound, liberal education in mathematics, the natural sciences, and English language.140 Courses were taught in such a way to “possess educative value equal at least to that

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137 Providence Journal, April 5, 1902.
furnished by the classics.” Washburn declared that the offerings were exactly in line with the dictates of federal policy.\textsuperscript{141}

Regarding enrollments, the president protested that dismissing the preparatory students in official counts was unfair, since the academic program needed to become more rigorous when the Kingston school became a college.\textsuperscript{142} He noted that the students in the preparatory division had to pass a similar examination and received the same education as students that entered during the agricultural school days.\textsuperscript{143} But since the institution had become a college, the four-year course had to be positioned atop the high school curriculum.\textsuperscript{144} Washburn stated, “All students now [admitted] in the college have had a high school preparation or have completed work in the preparatory school . . .”\textsuperscript{145} As Eschenbacher astutely observes, “the President did not suppose that the people wished the institution merely to be called a college if it were not such in fact or to award degrees for anything less than collegiate work.”\textsuperscript{146} Washburn added that the preparatory students could still “pursue special agricultural courses” while completing their “regular preparatory studies.”\textsuperscript{147} According to the president’s count, the college had forty students in the collegiate course and forty-one in preparation, “making a total of 81 students.”\textsuperscript{148} And when this was combined with over eighty special and partial students in courses on wood-carving, farm practice, and poultry-keeping, the college was meeting the educational needs of 164 students.

\textsuperscript{141} Eschenbacher, \textit{The University of Rhode Island}, 122.
\textsuperscript{142} Ibid.
\textsuperscript{143} Ibid.
\textsuperscript{144} Ibid.
\textsuperscript{145} Ibid., p. 1.
\textsuperscript{146} Eschenbacher, \textit{The University of Rhode Island}, p. 123.
\textsuperscript{147} “The College Replies,” \textit{Providence Journal}, April 6, 1902.
\textsuperscript{148} Ibid.
Washburn did not disagree that few students were pursuing the full collegiate course in agriculture. When the institution became a college, nearly 70 percent of graduates were enrolled in the agricultural program, but that number had dropped to single digits by the last three years of the Washburn administration (1899: 6 %, 1900: 7%, and 1901: 8%). Most now pursued the degrees in Mechanical Engineering or Science (Chemistry and Biology). For example, in 1900, 36 percent of graduates were in engineering, 57 percent in the sciences, and 7 percent in agriculture. Thus, it was not surprising, that in the most recent graduating class of 1901, only agricultural program graduate Charles Brayton became a practicing farmer. His classmates entered careers as publishers, traffic engineers, draughtsman, and supply clerks. The president offered a compelling defense of the enrollment numbers:

The son is not obliged to study agriculture . . . As a matter of fact, in this state, and in all others of the Union, he often chooses some other line than agriculture. Various influences have been at work in our country to bring this about. A discussion of them would be a discussion of the social and industrial problems of the day.

Washburn was referring to processes of industrialization that prompted a realignment of labor away from agricultural pursuits. At the time of the Morrill Act, 50.4 percent of all American workers were engaged in agriculture, but at the turn of the century that number had dropped to 36.3 percent. There was a growing demand for technical and managerial positions like

\[\text{Data tabulated from “List of Graduates,” Report to Board of Managers , 1914. University of Rhode Island Archives. Miscellaneous Archives Collection. Can also be found in the 1915 Annual Report of the Board of Managers.} \]
\[\text{Ibid.} \]
\[\text{Ibid.} \]
\[\text{“The College Replies,” Providence Journal, April 6, 1902.} \]
engineers, chemists, skilled machinists, and supervisors, and it was not surprising that student
enrollment patterns were trending towards these more lucrative careers.\textsuperscript{154}

He concluded his defense by explaining that the college was attempting to maintain high
standards, provide access to rural youth of various levels of preparation, and meet the
multifaceted demands of Rhode Island farmers. The president stated,

It is the policy of the college to give a technical, scientific education with a high standard
of admission, but not to exclude from the privilege of instruction those who are prepared
to take advantage of the preparatory courses or the short practical courses . . .\textsuperscript{155}

As a final conciliatory gesture, Washburn reached out to his opponents by inviting “questions in
the minds of those interested in our people’s college . . .”\textsuperscript{156}

Washburn’s letter was a masterful stroke. He presented a vision of the Rhode Island
College of Agricultural and Mechanical Arts that was consistent with the likes of George
Atherton or Andrew Dickson White. The land-grant college could have an advanced curriculum,
founded on advanced scientific studies in engineering, agricultural, chemistry, and biology,
while fulfilling its special educational functions for the agricultural population. Its graduates
could pursue skilled technical and scientific careers and be the next generation of leaders in
industry, academia, and the state. While at the same time, the college could offer an array of
special programs – like the new poultry cultivation program - to meet the needs of special
students and practicing farmers who desired practical or skill-based training. Finally, the college


\textsuperscript{156} Ibid.
could maintain high standards in the collegiate course while preserving access through the preparatory program.

The papers were quiet for the next ten days, and Washburn and the board may have surmised that their comprehensive response had silenced their foes. Then, on April 20th, the *Providence Journal* printed a new article that largely ignored the president’s nuanced arguments and cited numerous examples of why the college had become anti-agriculture. First, any student that expressed an interest in agriculture was disparaged by his classmates as an “aggie” and “relegated to the lowest rung of the college’s social latter,” the article explained. It was charged that several members of the faculty believed that the boys interested in agriculture needed to be “polished up,” and one professor was purported to have said that “it takes a year to civilize them” and as such thought a dancing class would be appropriate. Second, the college course was too taxing, and many of the young farm boys “drop out by the way . . .” Third and most importantly, President Washburn had developed into a “one man power,” and it was he, not the board of managers, that “lays all the plans and assumes sole leadership.” And the president had used this influence to reorient the school towards the mechanical arts and away from the “branch that should appeal to the ‘aggies’.” As a result of all these shortcomings, the author argued, several local granges submitted petitions for Washburn’s removal. The article concludes by noting that John W. Clarke of Kingston, “one of the leading spirits in the movement against President Washburn,” had informed the *Providence Journal* that “active steps were taken the past week towards formulating the official charges . . .”

The Board of Mangers had lost their patience. They had demanded that formal charges be presented to the board before any investigation was to commence, but a *de facto* inquiry had

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157 All quotes in this paragraph are from “Sharp criticism of Kingston College,” *Providence Journal*, April 20, 1902.
been playing out in the press without any specific grievances being filed. It was decided on April 24th that if official charges were not filed by May 5th, then the Board would begin its own investigation.\textsuperscript{158} And without any specifics complaints, it seemed the inquiry would absolve Washburn of all wrongdoing. But on the day of the deadline, three complainants presented formal charges against the president. They included state grange master Thomas Hazard, leader of the Portsmouth Grange Isaac L. Sherman, and Kingston native and Washburn nemesis John G. Clarke.\textsuperscript{159} After reviewing the document, the Governor was quoted as saying the charges were “simply amazing,” and John Washburn was shocked and distraught.\textsuperscript{160}

The first part of the document was not new. The president was charged with mismanagement of the institution resulting in low enrollment, discouraging the study and pursuit of agriculture, and injuring the reputation of the college. The remaining three accusations had never been made in the press or to the Board of Managers. Washburn was said to have “treated moral and sacred things frivolously . . . encouraged smoking among the students and had himself been intemperate in the use of intoxicating liquors,” and finally,

[the] President has been profane, vulgar, unclean and unchaste in speech and behavior in the presence and hearing of said students.\textsuperscript{161}

The three men informed the body verbally that they had a woman who could be called as a witness who was a party in Washburn’s immoral escapades.\textsuperscript{162}

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\textsuperscript{158}Eschenbacher, \textit{The University of Rhode Island}, 122.
\textsuperscript{159}Ibid., 125. John Clarke had been a special student at the college in 1894 and 1895. His first cousin, William Clarke gave an oral history interview (see “Clarke Interview”), and most of the negative assessments in histories of Washburn are based on this interview. One can quickly see in the “Clarke interview” that this local family had a very low opinion of John Washburn. It seems that Washburn knew as early as 1896 that Clarke was causing trouble for him in the village of Kingston, see “Tucker interview.”
\textsuperscript{160}Providence Journal, April 29, 1902; Pawtucket Evening Times, April 29, 1902.
\textsuperscript{161}The full charges were reprinted in “Hearing on Charges against President Washburn,” \textit{The Providence Sunday Journal}, May 11, 1902.
\end{flushright}
The president’s disbelief at the charges soon turned to anger and he instructed his lawyers to submit a lawsuit against the three men for “the publication of false and libelous statements.”¹⁶³

The Board of Managers held two emergency meetings on May 7th and May 10th.¹⁶⁴ At the first meeting, the chairman of the board, Henry Greene, spoke out fervently against the charges and defended the President’s record. He passionately declared, President Washburn . . . is as pure and innocent as any many living. These stories about him are complete hearsay. . . He is not two sided . . . he tells right out what he means, speaks plainly, and consequently may have hurt people’s feeling.¹⁶⁵

The chairman added that criticism in regards to the number of agricultural students was completely unfair, as “it is for the students to assert their preference, not the college authorities for them . . .”¹⁶⁶ But while the board seemed to dismiss the veracity of the complaints, Governor Kimball was abandoning his neutrality.¹⁶⁷ Granges were circulating petitions, newspapers were speaking out against the president, and it would be unwise to be seen as siding with a man accused of immoral behavior, even if it charges seemed bogus. Governor Kimball was especially angered at Washburn’s lawsuit, which was being presented by some in the press, as a recrimination to scare other naysayers from coming forward.¹⁶⁸

At the second meeting, Washburn was present and the official charges were read by Thomas Hazard and entered into the Board of Managers’ records.¹⁶⁹ Hazard stood before the Board and read testimony from the original debate in the Rhode Island legislature on the

¹⁶² This was not published in the press accounts or the Board of Manager minutes, but discussed fully in the “Adams Interview,” and alluded to in the “Tucker Interview.”
¹⁶³ See Narragansett Times, May 9, 1902; Pawtucket Evening Times, May, 7, 1902; Eschenbacher, The University of Rhode Island, 125.
¹⁶⁴ Ibid.
¹⁶⁶ Ibid.
¹⁶⁷ Eschenbacher, The University of Rhode Island, 125.
¹⁶⁸ Ibid.
¹⁶⁹ Ibid., 126.
founding of the Kingston School. He quoted some of his own testimony at the 1887 hearings, as evidence that the institution was to specifically focus on agriculture and produce practicing farmers.\(^{170}\) Washburn’s lawyer interrupted Hazard to ask him some questions about the language of the Morrill Acts, intent on highlighting the liberal objectives in the federal legislation.\(^{171}\) Hazard snapped. He struck the table and looked directly at Washburn:

>This was established to be an agricultural college for the benefit of farmers. We are sick of it! This is the grounds on which I ask the Board to let this man go!\(^{172}\)

The master of the state grange had laid the issue bare. Hazard made no mention of immoral behavior. Washburn had become too powerful, and the grange had lost control of the institution. It was the contest with Brown all over again. The college was not producing enough practicing farmers, not enough farm boys were attending, and the curricula was not, in the grange’s view, sufficiently dominated by agricultural studies.

With increasing pressure from Governor Kimball, a deal was struck in which the charges and lawsuit were both dropped, and John Washburn would “voluntarily” resign.\(^{173}\) On May 19th all charges were withdrawn and the president submitted his resignation to the Board. In his final words as president, he wrote defiantly:

>The charges would [have been] laughable if they were not so venomous [but it is] better for the College, the students, and the faculty . . . that there be a settlement instead of a public hearing . . . I know that I may be censured by many persons, but I feel I make this sacrifice for the good of the institution for which I have constantly labored for the past thirteen years . . .\(^{174}\)

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\(^{170}\) Ibid.

\(^{171}\) Providence Sunday Journal, May 11, 1902.

\(^{172}\) Ibid.

\(^{173}\) Eschenbacher, The University of Rhode Island, 127.

\(^{174}\) Board of Managers, Minutes, May 19, 1902.
Washburn explained years later that his main reason for not fighting the charges was due to the embarrassment and pain the episode had caused his family, but he was equally troubled by the prospect of moving his children and wife away from their relatives. He stated, “My family had suffered enough needlessly . . . [and] I would never make my worst enemy’s family suffer as mine did.”

John Washburn left Rhode Island the year following his resignation, after accepting the directorship of the National Farm School, an agricultural school for Jewish students outside Philadelphia. He would stay in this modest, less public position for the remainder of his career.

Fifty years after his departure, Rhode Island State College Dean of Agriculture George Adams stated in an interview that the woman connected to Washburn’s moral improprieties arrived on campus years later to admit that she had been asked by Washburn’s opponents to lie about the president’s behavior. An avadavat was taken by campus officials, but Washburn had little interest in resuming the fight, and chose to let the matter rest.

### The Washburn Aftermath

Homer Wheeler, professor of chemistry and assistant director of the experiment station, was appointed acting president of the college on August 12, 1902. Wheeler believed advanced scientific work should be largely confined to the experiment station, and agreed with Washburn’s critics that the institution should commit to technical training in practical agriculture. The engineering and science degree options would remain, but resources were to be redirected towards agriculture education. The acting president pleased Thomas Hazard and the state grange when he called for the abandonment of all admission standards, stating, “let the students remain

175 “Adams Interview.”
176 See Eighteenth Annual Report of the National Farm School. (Bucks County, PA: Oppenheim, Collins & Co.).
177 “Adams Interview”
178 Ibid.
a month, six months, a year, two, three, or four years.”

He also received the backing of Brown University supporters in Providence, when he announced the Kingston school would principally be an intermediate institution between the district schools and the colleges, and “might be made a feeder of Brown University, but in no sense ought to be a competitor.” Washburn’s dreams of a state college seemed to have collapsed, as Wheeler worked to resurrect the agricultural school curriculum and admissions standards of 1887.

After the public fall of John Washburn, the central tenets of the Rhode Island College of Agriculture and Mechanical Arts – its curricula, admissions standards, faculty, etc. – were all in disarray. Even though Wheeler attempted to bring order by capitulating to the grange perspective, many outside observers saw a fledgling institution, uncertain of scope or purpose. Not content to wait on the sidelines, a newly elected governor and legislators sensed an opportunity to impose their will on the weakened institution. And Brown University officials, sensing that the Morrill Act funds could once again return to Providence, began positioning themselves to reap the advantages of Kingston’s downfall.

Governor Lucius Garvin, the first Democrat elected in a decade, was the darling of the urban populace. He was elected in 1902 thanks to a strong backing from city workers who supported his campaign for a ten hour working day. Soon after the governor took office, he expressed a desire to make higher education more economical by “avoid[ing] conflicts between various educational interests.” He appointed a committee on February 17, 1903 to “report upon

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180 Ibid.
181 Ibid.
182 Eschenbacher, *The University of Rhode Island*, 131.
183 Ibid.
184 Ibid., 137.
the duplication of courses of instruction in educational institutions in this State above the high school” and make recommendation to unify higher education.\textsuperscript{186}

On March 11, 1903, the committee presented its report, and its major recommendation was a call for “legislation defining the work to be done at the Agricultural School.”\textsuperscript{187} As Washburn’s opponents had done two years earlier, the committee argued that the college had drifted too far from agricultural studies. The report states,

\begin{quote}
In the judgment of [the] committee, the interests of the industrial classes of the State will best be promoted by making the Rhode Island College more distinctively an agricultural school and less a school of mechanic arts . . . [The] College should discontinue advanced special work in the sciences, except in so far as they relate to agriculture and horticulture . . . and should also discontinue its advanced work in mechanical and electrical engineering.\textsuperscript{188}
\end{quote}

The committee called for a division of labor between Brown and the Rhode Island College: agriculture instruction given in rural Kingston and mechanical arts in urban Providence. Immediately after the report was presented, President Wheeler arose to submit a “mild protest.”\textsuperscript{189} He reminded everyone he was not the much maligned President Washburn, and he was in fact “in hearty sympathy with most of the things in [the] report, but added it was a “serious mistake [for] any legislative body . . . to limit the work of an educational institution.”\textsuperscript{190} Wheeler has set this trap for himself by firmly embracing the grange’s call for an agricultural curriculum, but it was never his intention to completely abandon engineering and advanced

\textsuperscript{186} See Verbatim Copy of Report in “Notes on the Educational Conference Held at the State House.” Typescript by Lucy Tucker, assistant to President Wheeler. See Lucy Tucker Papers. University of Rhode Island Archives.

\textsuperscript{187} See Verbatim Minutes of March 11, 1903 Meeting in “Notes on the Educational Conference Held at the State House.” Typescript by Lucy Tucker, assistant to President Wheeler. See Lucy Tucker Papers. University of Rhode Island Archives.

\textsuperscript{188} Verbatim Copy of Report in “Notes on the Educational Conference Held at the State House.”

\textsuperscript{189} See Verbatim Minutes of March 11, 1903 Meeting in “Notes on the Educational Conference Held at the State House.”

\textsuperscript{190} Ibid.
science. But in the end, the fiercest defender of the college’s right to expand beyond
agriculture was remarkably the same man that argued against a broad scope for the college two
years earlier – Grange Master Thomas Hazard. Wheeler and Hazard had both concluded that the
legislative report was little more than an initial step for diverting a portion of land-grant funds
back to Brown University.

The paradox of land-grant education politics stemmed from the fact that for agricultural
schools to be eligible for Morrill funds they had to become colleges, but as institutions
subscribed to the collegiate model of high academic standards and liberal curricula, the more
challenging it became to provide broad access and produce practicing farmers. To John
Washburn, you could not be a land-grant college without elevating admission standards,
enhancing academic rigor, and providing a full breadth of studies in the curriculum: agriculture,
mechanical arts, and the liberal arts. This standard was embraced by institutions nation-wide and
was supported by the Association of American Agricultural Colleges and Experiment Station.

After Washburn’s resignation, the grange’s narrow view returned, and almost immediately, it
undermined the institution’s land-grant status. If the college was not going to fulfill all aspects of
the Morrill Act, then other institutions were more than willing to claim a portion of the federal
funds to pursue those ends. Thomas Hazard realized that his public campaign for a strict
agriculture curriculum could cost the Kingston institution federal funding, and he stood before
the committee on March 11, 1903 to defend the college from legislative interference. He
offered his standard class rhetoric,

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191 Eschenbacher, *The University of Rhode Island*, 139.
192 Ibid.
194 See Eschenbacher, *The University of Rhode Island*, 136-137.
[T]he agricultural College at Kingston is founded for the benefit of the farmers and mechanics of this state, the industrial classes . . . [but] where are the farmers and representatives of the industrial classes who ought to be at the conference today? Are you going to pass action on this report . . . in the interests of Brown University, without consulting the farmers . . .?  

Hazard admitted that the college had fallen short of expectations and had “not been conducted as it should have been,” but he added “the Board of Managers can regulate all this matter . . .” The legislators did not wish to want to risk the ire of the grange, and chose to table the report. The issue was shelved for the time being, but Rhode Island newspapers kept the matter alive.

William Faunce would be the longest serving president in the history of Brown University (1899-1929), but in 1903, he was only at the beginning of his long tenure, and naively wadded into the land-grant debate. Misreading the legislative activity and press accounts, Faunce was convinced that public support was behind a plan to redistribute Morrill funds back to Brown.  

He wrote a letter to the Providence Journal on May 17th, where he audaciously called for all the funds from both Morrill Acts to be returned to his college, as Brown was prepared to fulfill all the responsibilities of a proper land-grant college. Faunce, an 1880 Brown graduate, had been at Harvard, the University of Chicago, and numerous other institutions during the 1890s, and although he returned to Brown in 1897 to receive his Doctor of Divinity degree, he had been absent during the land-grant debates of the previous decades.  

While the coalition in support of the Rhode Island Agricultural and Mechanical College had been fractured during the Washburn conflict, Faunce’s letter was interpreted as a raid on a “people’s college,” and old
alliances reformed. Just over a year after Washburn was run out of town for expanding the college too far beyond agriculture, his opponents were forced to forego a narrow agricultural vision and embrace the state college trajectory of the disgraced leader.

On April 1, 1903, President Wheeler was replaced by Kenyon L. Butterfield from the University of Michigan. Soon after his arrival, he moved the college past the tired debates of practical farm training versus liberal study, agriculture versus mechanical arts, and access versus academic standards. The college should no longer be judged, he argued, by how many practicing farmers it produced. As Eschenbacher characterizes Butterfield’s views,

[T]he College should continue to train men for agricultural research, teaching, and expert supervision of various farming enterprises. But graduates should emerge with a sense of mission, a calling which would compel them to live their lives on the farms, there to lead the movement for rural progress.

The new president had no desire to change the curriculum from Washburn’s tenure, with the exception of adding a new Department of Economics and Rural Sociology. He had a more holistic approach to improving the lives of farmers and rural communities, which went well beyond curbing outmigration by creating farmers. Butterfield proposed a host of outreach, extension, and farm-college partnerships as a means to improve Rhode Island country life. And as a skilled diplomat and public speaker, he received state appropriations in the tune of $4000 to support student labor, $4000 for agricultural extension, $15,000 annually for a new

\[199\] Eschenbacher, The University of Rhode Island, 137-138.
\[200\] Ibid., 140-148.
\[201\] Butterfield’s holistic conception of the relationship between land-grant colleges is expressed in its mature form in his inauguration speech at the Massachusetts Agricultural College. See Kenyon L. Butterfield, Inauguration of Kenyon L. Butterfield: as president of the Massachusetts Agricultural Society. (Amherst, MA: Massachusetts Agricultural College, 1906).
\[202\] Eschenbacher, The University of Rhode Island, p. 142
\[203\] Ibid.
\[204\] Ibid., 142-143.
greenhouse, and an increase in the college’s annual appropriation.\textsuperscript{205} The legislature was excited about new correspondences courses, summer farm institutes, and a general outlook on campus that the college was committed to creating the next generation of agricultural leaders.

Butterfield remained only three years, and while he had succeeded in reigniting support at the capitol, he was disappointed that more young boys did not arrive to study agriculture. Fifteen of the nineteen students that entered the college in 1905 pursued engineering or chemistry and only two enrolled in the agriculture program.\textsuperscript{206} Butterfield accepted the presidency of the Massachusetts Agricultural College, largely because he wanted to go where he could impact a larger rural population. He would stay at Amherst for two decades until accepting the presidency of the Michigan State College of Agriculture and Applied Sciences in 1924.\textsuperscript{207} While his tenure in Rhode Island was short, he helped show the college new ways to serve the agricultural interests, even as rural communities were fading and farming was becoming a smaller share of the state’s economy. While the modern Rhode Island State College would cater to an increasingly urban clientele interested in advanced sciences, engineering, and the liberal arts, it would maintain its land-grant responsibilities to agriculture and rural people through extension and outreach activities. This was a function that legislators supported and farmers accepted.

\textbf{The Land-Grant College Reveals its Modern Form}

In the last decade of the nineteenth century, land-grant colleges in the Northeastern United States wrestled with shedding their agricultural school commitments to vocational training, modest admissions standards, and required labor for a new state college standard that promoted liberal curricula, rigorous academic standards, and a budding campus culture. As non-

\textsuperscript{205} Ibid., 144.
\textsuperscript{206} Board of Managers, \textit{Nineteenth Annual Report, 1907}, 68-69.
\textsuperscript{207} For a biographical sketch on Butterfield, see Kenyon Butterfield Online Exhibit at Michigan State University Archives, http://archives.msu.edu/collections/presidents_butterfield_k.php.
agricultural degree programs - especially engineering - became more popular, leaders faced pressure to redistribute resources to these high demand programs. In Connecticut and Rhode Island, efforts to implement the state college model met stiff resistance from state granges. Whereas campus officials saw their reforms as necessary to conform to the Morrill Acts, distinguish their institutions from the growing high school sector, and meet the publics’ educational demands, grangers perceived the reforms as an abandonment of the agricultural and industrial classes.

After the depression of 1873 and the rise of the grange, the standard measure of land-grant college success had been how many farmers does the college produce? Land-grant leaders always struggled to answer this question, as they had almost no control in directing students’ choices of degree programs or careers. When Storrs and Kingston were agricultural schools of an intermediate grade, they offered practical training curriculum to a broader clientele, and larger percentages of their graduates became farmers. In their quest for federal appropriations, the schools coveted college status to become eligible for the land-grant designation. Higher academic standards and a new campus culture followed, and fewer students arrived to study practical agriculture. Those wanting vocational training turned to the public high school, whereas those pursuing a gateway to the more lucrative middle class careers in science, engineering, or business sought a traditional college And as the experience of Max Schaffrath attests, many farm boys were more interested in middle class collegiate culture - football, dancing with girls, class scraps, and debating peers - than preparing to become a farmer by practicing hard labor in the fields.

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208 See Chapter 4.
209 Ibid.
210 See Krug, The Shaping of the American High School, 217-248; Daniel A. Clark, Creating the College Man, 3-25.
Agriculture extension emerged as the solution to the conflict that had plagued the relationship between farmers and land-grant colleges since at least 1873. Short courses, farmers’ institutes, correspondence courses, experiment station publications, and rural outreach not only met the educational needs of farmers and rural peoples, but garnered good will (and appropriations) from state legislatures. The developments in Connecticut and Rhode Island were part of larger movement in the region led by Cornell University. Isaac Roberts had built a strong relationship between the department of agriculture and New York Farmers, but it was his protégé, Liberty Hyde Bailey, who made Cornell a national leader in extension and agricultural education.

In 1894, the Western New York grape harvest was decimated by infestation and the state assembly appropriated funding for the “purpose of horticultural experiment, investigations, and instruction in western New York.” The legislation was no small matter, for the only other state support Cornell University had received was an appropriation for a dairy husbandry building two years prior. Bailey committed his College of Agriculture to investigate plant diseases in the affected region, but soon realized that a deeper engagement with New York farmers was needed. The Cornell staff began to fully engage local farmers, giving instruction to promote good agricultural practice and partnering in “cooperative” extension research. The state was pleased with the results and funded an expansion of the program “for the promotion of agricultural knowledge in the state.” As a result, Cornell expanded the lectures and research across New York and added two new programs: correspondence courses and the nature study program. The

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212 Ibid.
215 Ibid., 146.
216 Ibid.
nature study program provided rural district school with instructional materials that introduced the basic sciences of agriculture to a much larger rural audience. It was a resounding success, as over 30,000 educational leaflets were distributed annually. District schools formed Young Naturalist Clubs that received copies of the magazine *Junior Naturalist* and even enjoyed visits from Bailey himself.\textsuperscript{217}

Figure 5.3. Photograph of Liberty Hyde Bailey

\textit{Liberty Hyde Bailey speaking to a Young Naturalist Club}\textsuperscript{218}

By the turn of the century, the extension successes at Cornell had removed the last major vestiges of grange antagonism and ushered in an era of partnership. If Bailey wanted to promote new correspondence or summer courses, he would ask the head lecturer of the State Grange to decimate information to local grange leaders.\textsuperscript{219} Cornell men would routinely lecture at grange

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\textsuperscript{218} This photo was retrieved from the Cornell Exposition *Liberty Hyde Bailey: A Man of All Seasons*. Image available at http://rmc.library.cornell.edu/bailey/introduction/index.html.
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\textsuperscript{219} Colman, *Education & Agriculture*, 175.
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halls and entire local orders would attend educational programs in Ithaca.\textsuperscript{220} In 1904, the New York Grange approved four annual scholarships for students to attend Cornell’s winter agricultural course.\textsuperscript{221} There was perhaps no greater example of the changing grange view of New York’s land-grant, as when the Master of the State Grange stated in 1907 that he would help “in any way within my power” to increase state appropriations for the agricultural department.\textsuperscript{222}

The Association of Agricultural Colleges and Experiment Stations called for state support of extension activities at all land-grant colleges, and created a committee on extension in 1905 to arouse interest and implement best practices nationwide.\textsuperscript{223} Kenyon L. Butterfield, now president of Massachusetts Agricultural College, was named chairman and helped standardize extension programs at all land-grant institutions.\textsuperscript{224} As the new century progressed, land-grant college’s agricultural departments, schools, and professors gained acceptance amongst the farming population largely through the benefits accrued from agricultural research and extension.\textsuperscript{225} Discoveries in insect control, fertilizers, breeding, veterinary medicine, cultivation, and farm management to name a few had generated economic gains for regular farmers. Targeted educational programs like short courses in dairying or poultry-raising allowed farmers to improve techniques or expand operations into new products.\textsuperscript{226} Extension programs – nature studies, farm agents, farmers’ institutes, rural outreach, etc. – brought the colleges services

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\textsuperscript{220} Ibid.
\textsuperscript{221} Ibid., 179.
\textsuperscript{222} Cited in Ibid., p. 180.
\textsuperscript{224} Ibid.
\textsuperscript{225} Scott, \textit{The Reluctant Farmer}, 148-169.
\textsuperscript{226} Ibid.
directly into rural communities and helped improve schools, transportation, and local economies.\textsuperscript{227}

As the extension function was blessed by the grange as the main vehicle for serving the agricultural classes, the old issue of creating vocational education programs to produce farmers was moved to another educational sphere: the high school. In summarizing the movement for vocational education in the public high schools, President Theodore Roosevelt spoke the following words in 1907 that were reminiscent of land-grant college debates in previous decades:

> Our school system is gravely defective in so far as it puts a premium on mere literary training and tends therefore to rain the boy away from the farm and the workshop. Nothing is more needed than the best type of industrial school, the school for mechanical industries in the city, the school for practically teaching agriculture in the country . . . [Education should be] directed more and more toward training boys and girls back to the farm and the shop.\textsuperscript{228}

Now it was high schools that were criticized for offering too much Latin for college preparation and not enough practical, vocational courses. With no admission standards and no tuition, these public institutions were depicted as schools for the masses, best suited to offer social and economic uplift.\textsuperscript{229} Agricultural leaders from the grange, experiment stations, and land-grant colleges joined together in common cause to pressure secondary schools to expand vocational studies. A.C. True, director of the United States Office of Experiment Stations, declared it a necessity “to increase agitation to such an extent that not only the leaders but the great mass of rural people” were lobbying for practical agricultural training in the high schools.\textsuperscript{230} Land-grant leaders’ involvement was of course self-serving, as the pesky problem of creating practicing

\textsuperscript{227} Ibid.
\textsuperscript{228} Krug, \textit{The Shaping of the American High School}, p. 225.
\textsuperscript{229} Ibid., 169-189.
\textsuperscript{230} Ibid., 247-248.
farmers could now fall to principals, high school agriculture teachers, and Future Farmer of America organizations.

Through extension, the land-grant college found a way to provide distinctive educational services to the agricultural and industrial classes without minimizing academic standards or limiting curricula to vocational studies. Unburdened, the land-grant colleges could covet futures as state college and universities. As Daniel Coit Gilman had envisioned, the institutions could prepare a generation of leaders to “take charge of mines, manufactories, the construction of public works . . . to be leading scientific men.”  

At every Northeastern land-grant college at the turn of the century, the most popular area of study was engineering. Perhaps Pennsylvania State College trustee General Beaver said it best in 1893 after noting that 128 of 181 undergraduates were pursuing engineering, “the aim and outcome of the old university was the doctor . . . the aim and outcome of the new university is the engineer.”  

With training for the practical vocations of farming and mechanics removed to other institutions, the land-grant college crafted advanced scientific curricula appropriate for those aspiring to “the higher practical vocations.” In addition, academic professionals were now free to embrace the German research model that had been advanced by expatriate scholars returning from study in Europe since the 1850s. Land-grant leaders and faculty members followed the example of Johns Hopkins or the University of Chicago: expanding advanced scientific programs, promoting graduate studies, and orienting their institutions towards faculty research.

234 See Chapter 3.
235 See Chapter 3.
However, the land-grant college at century’s end was more than an aspirant to university status or what Gilman would have called a “National School of Science.” They had become “state colleges,” an entity that had a unique meaning within the cultural milieu. In past decades, popular land-grant expressions trended against social mobility, as farmers demanded land-grant colleges to curb movement from the farm to the city or prevent the exodus from the agricultural class. But as Frederick Rudolph astutely notes, “The ‘State College’ . . . became synonymous with opportunity, which was a synonym for America itself . . .” The state college was the place where children of farmers and workers, properly fitted in a public high school, could go at a reasonable price to pursue middle class aspirations. The classroom not only offered the scientific and technical courses that had become a staple of land-grant education, but a greater breadth of studies in history, politics, economics, literature, modern languages, etc. In short, state college students were to have access to “any study in any field” that could help them advance beyond their station to become societal leaders.

Outside the classroom, young men like Max Schaffrath found a “city state run by students for students,” a dizzying array of football games, student governments, fraternities and sororities, class dinners, scrums, and dances. Campus life was celebrated in magazines and books, and the college student was becoming a prominent figure in the popular mind. Pressure would no longer come from grangers, but from alumni and alumnae wanting to expand a favored program or preserve a tradition of “old state.” The land-grant state colleges had gained new cultural significance, no longer focused on protecting the social and economic interests of the

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236 See Gilman, Our National Schools of Science.
238 Ibid., 264-285.
239 See Ibid., 264-272. The famous quote was given by Ezra Cornell.
241 Clarke, Creating the College Man, 3-26; Horowitz, Campus life.
industrial and agricultural classes, the campuses embraced their new roles as proprietors of a middle class, American dream.\textsuperscript{242}

\textsuperscript{242} Ibid.
CHAPTER SIX

Conclusions

“[T]he real test of all land-grant institutions was their ability and disposition to fulfill their peculiar mission in the new era, and it was in ministering to the technical, social, and political needs of the nation come of age that they attained measurably to the vision of the true prophets of the industrial movement in becoming real people’s colleges – with all their limitations a distinct native product and the fullest expression of democracy in higher education.” - Earle Ross, “Democracy’s College”

The origins of the New England land-grant colleges cannot be explained by Earle Ross’ thesis in Democracy’s Colleges, in which he concludes the “determining influence [of the land-grant movement] was that of popular determination and direction” for the diverse ends of expanded access, vocational training, and social welfare. Instead, the land-grant colleges in the Northeastern United States were born from the efforts of educational reformers who hoped to advance science and expedite America’s economic advance. It was agricultural society members and professional scientists trained in European Universities who jointly lobbied state legislatures and founded the early land-grant colleges. The gentlemen farmers, men of affairs, and amateur scientists that populated state agricultural societies wanted to elevate the status and productivity of the farmer by uncovering the scientific principles at the core of agricultural practice. The young scholars returning from abroad sought to use the largess of the federal government to recreate in America places of scientific research and dissemination like they had enjoyed in

2 Ibid., p. 2.
Europe. Both groups were sympathetic to a land-grant agenda predicated on expanding the study of the applied sciences in a higher education landscape dominated by the classical curriculum.

The educational views of the agricultural societies and expatriate European scholars were congruent with the political-economic motivations of Justin Morrill. A scientific-economic alliance soon developed, coalescing around a mutually reinforcing purpose for the Morrill Act of 1862: to advance and disseminate scientific knowledge for the aim of agricultural and industrial development, and to increase the international standing and economic competiveness of the United States. Daniel Coit Gilman became the intellectual leader and most fervent defender of this scientific-economic union, for which he developed a model named “National Schools of Science.” He lauded Yale’s Scientific School as an exemplar, and dismissed any notion of using land-grant funds to support manual training schemes that certified practicing farmers. Gilman foresaw land-grant colleges’ highest aim as producing “officers of industry.” These scientifically-trained graduates would fill an increasing number of white-collar positions in the new middle class, where as engineers, farm managers, chemists, agricultural researchers or

7 This occupational grouping was referred to by many names: the higher avocations of life, specialists, new learned professions, etc. The term “officers of industry” was coined by Andrew Dickson White, President of Cornell University, and described those scientific, technical, and business specialists that would find careers in the emerging industries of the new economy. Daniel Coit Gilman borrowed this terminology on occasion.
industrial supervisors, they would oversee and improve the complex processes driving America’s industrialization.  

Thus as argued in chapter three, the original direction of land-grant colleges was charted by the de facto leadership of agricultural societies, university-trained scientists, and economically-minded statesmen. The original curricula, faculty, and students reflected their values. The academic program maintained fairly stringent admissions standards, curricula of a high intellectual grade, and theoretical instruction in lieu of manual training. The students primarily heralded from the middle to upper-middle income strata, and while many had wealthy farmer fathers, few made careers in farming after graduation. As Gilman had envisioned, most of these students pursued new middle class lives in the “specialist” avocations within science, engineering, or business management. Statesman and college leaders believed land-grant institutions’ primary role was advancing scientific knowledge and application, nurturing human capital, and fostering industrial and national development. Cornell University and the Sheffield Scientific School were the archetypes of this model, and found considerable successes in the early decades producing significant scientific research and graduating large classes of which many became leaders in science and industry. And while places like the Maine College of Agriculture and the Mechanical Arts or the Massachusetts Agricultural College lacked the financial resources to achieve the same results, they too employed many accomplished scholars in agriculture and mechanics, and produced their own cohorts of scientific leaders that would leave important marks on industry, higher education, and research. This dissertation illustrates

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that during the first decade, a period driven by science not popular demand or interest, land-
grants should not be conceived of as Democracy’s Colleges, but perhaps as Scientists’ Colleges
or Industrialism’s Colleges.

Absent from this creation story are the regular Yankee farmers and workers. They did not
attempt to influence the colleges’ direction, nor did they send their children to the campuses.
This would all change after 1873, when a great depression and the rise of the grange would bring
regular farmers into debates over land-grant colleges, and cause institutional reformations
throughout the region. The grange would offer an alternative, utilitarian vision of land-grant
education, hoping that practical studies and broader access would increase the profitability of
their vocation and keep sons from leaving the farm, the rural community, and the class.10
Farming progeny who graduated from land-grant colleges in the 1860s and 1870s and moved off
the farm into new middle class jobs as scientists, engineers, or businessmen fueled granger
claims in the 1880 and 1890s that the colleges were exacerbating rural outmigration and
threatening farmers’ survival. The uncontested origination era had ended, ushering in a second
period of development epitomized by a tension between farmers and traditional academic
authorities for the control of land-grant education.11 When farmers became politically engaged
through state granges, they worked to align higher education with the needs of rural
communities, steering institutions towards the celebrated functions of agricultural extension and

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9 See Scott M. Gelber, Academic Populism; Scott, The Reluctant Farmer; Nathan M. Sorber, Social Class,
Agriculture, and Higher Education: The Formation and Reformation of Northeastern Land-Grant Colleges. Paper
10 Ibid.
11 Roger L. Geiger, “The Rise and Fall of Useful Knowledge,” 153-168; Scott M. Gelber, Academic Populism: The
people’s revolt and public higher education, 1880—1905. (Diss. Harvard University, 2008); Alan Marcus,
Agricultural Science and the Quest for Legitimacy (Ames, IA: Iowa State University Press, 1985); Roy V. Scott, The
outreach. And it is only at this point that popular demand become a critical factor and we can return to the familiar interpretative confines of Earle Ross’ *Democracy’s College*.

As argued in chapter four, the Northeastern United States, the rise of farmer populism and the increase in popular demands on higher education brought about a dramatic reformation; it ended the land-grant status of Yale, Brown, and Dartmouth, and ushered in three new land-grant colleges that would ultimately become the University of Connecticut, the University of Rhode Island, and the University of New Hampshire. Similar attempts were made to remove the land-grant from the University of Vermont, but last minute interventions by Justin Morrill thwarted the plan, and the institution begrudgingly adopted extension programs to provide services to the state’s farmers. Cornell University, with its vast resources, was able to provide a model for the region by attaching a well-funded agricultural college to its emerging research university, offering a robust collegiate curriculum in the arts and sciences while providing a multitude of outreach and extension activities for New York farmers. The land-grant colleges in Pennsylvania, Massachusetts, and Maine followed suit, maintaining reputable admission standards and a breadth of academic programs centered on the sciences for its traditional clientele, while pursuing utilitarian ends through special summer and short courses, extension, and cooperative research.

The practical, narrow-gauge vision of the state granges – modest admissions, manual labor, vocational training, agricultural curriculum, and the graduation of farmers – found the fullest expression at the new land-grant colleges in Connecticut and Rhode Island. As former agricultural schools of an intermediate grade, these institutions were built on the premise of broad access for rural youth and returning them to the farm. More than any other land-grant

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12 Scott, *The Reluctant Farmer*. 
college in the Northeast at any time, the Storrs Agricultural College and the Rhode Island Agricultural College produced farmers. But as shown in chapter five, in their quest to become colleges and qualify for land-grant funds, these institutions found themselves bound to a hardening college standard. College leaders moved to elevate the academic quality and selectivity of these fledgling colleges to meet the standards of their peers in the Association of Agricultural Colleges and Experiment Station, distinguish curricula from the growing high school sector, and recruit a growing number of students more interested in experiencing collegiate culture than becoming farmers. The grange resisted this move, but could only delay the inevitable. The era of the state colleges had arrived, and farmers would eventually accept that agricultural research and extension were appropriate and viable services that the colleges could offer the agricultural class. The traditional demands for vocational training and social uplift would be hereafter redirected at high schools, as farmers worked to create vocational agriculture programs and Future Farmers of America organizations. With manual labor and a practical agricultural curriculum a thing of the past, the Connecticut and Rhode Island land-grant colleges joined regional peers as modern state colleges.

The land-grant college had achieved its “peculiar” character, thanks to the ambiguity of the Morrill Act which had invited numerous and diverse interpretations of the form and function of land-grant colleges. Football fields were situated alongside agricultural experiment stations, farm buildings, creameries, and calorimeters were constructed near posh fraternities and academic buildings, and local farmers attended grange meetings, short courses, or inspected campus cattle near co-eds debating politics, writing poetry, conducting experiments, or performing plays. The land-grant model in the Northeastern United States developed dialectically from contests in state houses, newspapers, agricultural journals, grange halls, and
college campuses to implement divergent, class-situated visions of land-grant education. The process did not result in the dominance and realization of one vision, but instead, Janusian institutions emerged that offered an array of programs to serve the demands of its wide variety of constituents. The lack of coherence actually increased public support and state appropriations, as the colleges were not seen as one interest group’s proprietary domain but an institution in which everyone owned a share.

Perhaps traditional measures of democracy in “democracy’s colleges” - popular demand, access, or curricula tailored to common people- have been misconceived. What made the land-grant college uniquely democratic was that its purpose was not imposed by a wealthy benefactor, religious sect, or professional guild, but in the words of Roger Williams, purpose was crafted from “the clash of competing ideas and interests . . . and rough and tumble politics.”13 The land-grant colleges are “rife with paradoxes” and peculiarities, because unlike literary colleges or professional schools, they had no uniform, uncontested principle to guide their development.14 As colleges and public institutions, land-grants had to meet a host of educational and non-educational needs that were not always complementary and often in direct conflict. The process was of course colored by self-interest and political calculation, but was also driven by fair-minded individuals committed to preserving their traditions and communities, as well as forward-looking statesman and scientists who believed that science and economic growth held the keys to a better world. In the end, all that connects the diverse and conflicting purposes and programs of land-grant colleges are common births from an ambiguous federal law and the

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14 The quote is attributed to Roger Williams, ibid., p. 9.
support of an interest group in the public realm, highly appropriate for a diverse and divisive society with often little more in common than a belief in democracy.
APPENDIX

Class Definition Essay

In *Economy and Society*, Weber offers definitions of class, class situation, and social class. These concepts form the theoretical basis of how class is defined in this dissertation. *Class situation* is defined as “the probability of procuring goods, gaining a position in life, and finding inner satisfaction . . . a probability which derives from the relative control over goods and skills and from their income-producing uses within a given economic order.”¹ And *class* is defined as “all persons in the same class situation.”² In these two definitions, Weber distinguishes between the two economic sources of class formation: property/goods and skills. *Social class* is defined as a clustering of class situations or levels of market participation, in which, a cross sections of groups coalesce around a “common nexus of social interchange.”³

Weber identified and distinguished four social classes in modern capitalism that coalesce in a “common nexus” based on either property or education/skill foundations: a) the unskilled working class, b) the petit bourgeoisie, c) the propertyless intelligentsia and specialists (“technicians, various kinds of white-collar employees, civil servants, etc.”) and d) the capitalist class or classes privileged through property. The working class refers to those workers devoid of property and skill and with little power in market exchanges. The privileged property owners would be those capitalists and landowners able to leverage their resources to gain high profits in the market, whereas the petit bourgeoisie profit from their property but to a smaller degree. The third cluster, “the propertyless intelligentsia and specialists,” derive their economic power entirely from selling their marketable skills to governments, capitalists, or other enterprise. This

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² Ibid., p. 48.
³ Ibid., p. 48.
group would include learned professionals, white collar managers, and skilled workers that are differentiated by their educational qualifications and expertise. It is important to note that Weber’s social classes represent clusters of careers and vocations that realign with the progression of capitalist development. For example, as the farmers and artisans of the petit bourgeoisie face competition and expropriation from the large capitalist they may descend into the ranks of unskilled labor or attempt to acquire new skills and reposition their vocations in the “the propertyless intelligentsia and specialists” cluster.\(^4\)

The following definitions, derived from Marxian and Weber theory, are used throughout this dissertation. The petit bourgeoisie designation is applied to the farmer and artisan that are able to achieve limited market power by exploiting their small or modest property (when “farmer” is used alone without a descriptor it will always refer to a small property or petit bourgeoisie farmer and not farm hand, farm manger, or large capitalist farmer). The farm hand and general laborer lack economic sustaining property and possess low market power and are defined as the unskilled working class (hereafter working class). The careers that cluster into the “propertyless intelligentsia and specialists” classification are defined as new middle class or middle class, where market power comes from the possession of specialized skills, competencies, or credentials.

There are three other categories used by contemporaries that are critical to this study-professional class, agricultural class, and industrial class - but these classifications should not be confused with the aforementioned class framework premised on market power (i.e. working class, petit bourgeoisie, new middle class, and capitalist). These benign monikers are included in the dissertation when referring to type of employment (i.e. those working in manual versus non-

\(^4\) Ibid., pp. 302-307.
manual employment), and is not suggestive of different levels of economic power or social prestige. The designation of professional, agricultural, and industrial work was used to demarcate difference in the type and sector of labor being performed. In arguing for his Industrial University, Jonathan Baldwin Turner illustrates how the classification is used to separate non-manual from manual work. He states that the privileged, professional class was “a small class . . . in religion, medicine, science, art, and literature,” compared to “a much larger class, who are engaged in some form of labor in agriculture, commerce, and the [industrial] arts.”5 In 1873, The Kansas State Agricultural College used the Webster Dictionary definition as the basis for stating the following in its catalogue:

We understand the industrial classes to embrace all those vocations in which or pursuits ordinarily requiring a greater degree of manual or mechanical, than of purely mental labor . . . The industrial arts are those in which the hand and body are more involved and the liberal arts are those in which the mind and imagination are chiefly concerned.6

J. Gregory Behle and William Edgar Maxwell argue that Justin Morrill adopted this same manual and non-manual distinction when inserting agricultural and industrial classes in the land-grant act.7 In this dissertation, these terms are applied as contemporaries used them to determine the type of work being done and not to signal class positionality. Professional class designates that an individual was employed in primarily non-manual work, tended to have a college education in the liberal arts, and included careers like doctors, ministers, lawyers, professors, and writers. The member of industrial class primarily did manual work, often gained their skills from experience, and included such varied occupations as carpenter, general laborer, draughtsman,

7 Behle and Maxwell, “A State University,” 93-110.
The agricultural class did manual work but in the context of the farm and gained their skills from experience in the fields.

The Relationship between Higher Education and the New Middle Class

Colleges and universities offered both the economic and social foundations of being middle class. As Max Weber predicted,

The elaboration of diplomas from universities, business and engineering colleges, and the universal clamor for the creation of further educational certificates in all fields serve the formation of a privileged stratum in bureaus and in offices . . . Demands for the introduction of regulated curricula culminating in special examinations . . . [stems from] the desire to limit the supply of candidates for these positions and to monopolize them for the holders of education patents.8

This relationship between higher education and the new middle class hinges on two components. The first is the functionalist connection: the new middle class is premised on the acquisition of specialized and marketable skills, and so demands that institutions instill marketable skills. Higher education responds by offering academic programs that supply these skills to students, and the college degree signifies to the market that the holder is competent in some area. The second focuses on the social and cultural function of the college credential. Randall Collins and David Brown argue that educational credentials are “cultural-political constructions of competence and organizational loyalty that bare little relationship to the technical demands of modern work.”9 The college degree offered employers more than a promise of technical competency; it assured that the employer was gaining a colleague of a certain social type. The college-educated candidate was more likely to come from the same cultural field as the employer

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- what is today called “a good fit”\textsuperscript{10} – they shared similar life experiences, and held familiar communication styles, personal values, leisure preferences, family lives, and temperament. In this dissertation, the effect of college on social mobility is conceptualized both through the influence on economic and cultural credential outcomes.

\textsuperscript{10} Brown, Degrees of Control.
BIBLIOGRAPHY

Archives

Brown University
Cornell University
University of Connecticut
University of Maine
University of Rhode Island
University of Vermont
Yale University
Pennsylvania State University

Books, Theses, Articles, Reports, and Other Materials


Acts and Resolves Passed by the General Assembly of the State of Rhode Island and Providence Plantations, at the January Session, 1888, (Providence, RI: Freeman, 1888).

Acts and Resolves Passed by the General Court of Massachusetts in 1863, (Boston, MA: Wright & Potter, State Printers, 1863).


“Address by President Andrews.” In Sixth Annual Report of the State Board of Agriculture, Made to the General Assembly at its January Session, 1891,(Providence, RI: E. L. Freeman and Sons, 1891).

Address of Governor Robbie to the Senate of Maine, 1883, (Augusta, ME: Sprague & Son, 1883).

Address of Governor Robbie to the Senate of Maine, 1885, (Augusta, ME: Sprague & Son, 1885).


*Annual Reports of the Board of Managers of the Rhode Island State Agricultural School and Experiment Station, 1889-1895*, (Providence, RI: E. L. Freeman & Son, State Printers, 1901).


*Annual Reports of the Trustees, Farm Superintendent and Treasurer of the Maine State College of Agriculture and Mechanics Arts, 1872*, (Augusta, ME: Sprague & Son, Printer to the State, 1872).

*Annual Reports of the University of Vermont and State Agricultural College*, (Burlington, VT: Free Press, 1879).


Babcock, Donald C. *History of the University of New Hampshire*, (Durham, NH: University Press, 1941).


“Ezekiel Holmes, memorials, Journals, and Correspondence.” The Home Farm, 4(32), (July 19, 1884).


Bronson, Walter C. The History of Brown University, 1764-1914, (Providence, RI: Brown University, 1914).


Buckham, Matthew. Dead Languages Forsooth!, (Burlington, VT: Free Press, 1908).


Catalogue of the Officers and Students of Brown University, 1867-68, (Providence, RI: Hammond & Angel, 1867).


Catalogue of the Officers and Students of the State College of Agriculture and Mechanic Arts. Orono, Maine, 1868, (Bangor, ME: Benjamin A. Burr, Printer, 1868).

Catalogue of the Officers & Students in Yale College, 1875-1876, (New Haven, CT: Tuttle, Morehouse, & Taylor, 1875).

Catalogue of the University of Vermont, 1878, (Burlington, VT: Free Press, 1878).

Catalogue of the University of Vermont, 1880, (Burlington, VT: Free Press, 1880).

Catalogue of the University of Vermont and State Agricultural College, 1887, (Burlington, VT: Free Press Association, 1888).


________, “Piggy Goes to Harvard: Mass Magazines, the Middle Class, and the Re-
Conceptualization of College for a Corporate Age, 1895-1910,” Perspectives on the 

________, “Improved Reflections: American Mass Magazines, Higher Education, and the 
Construction of a Middle-Class Male Identity, 1890-1915,” American Educational 

Clark, W.S. “Massachusetts Agricultural College.” Massachusetts Ploughman and New England 

Collins, Randall. “Functional and Conflict Theories of Educational Stratification.” American 

______. The Credential Society: An Historical Sociology of Education and Stratification, 

Colman, Gould P. Education & Agriculture: A History of the New York State College of 


Connecticut. Public documents of the State of Connecticut, Volume 4, Part 1, (Hartford, CT: 
General Assembly, 1902).

Connecticut Granges, Edited by a Committee of the Connecticut State Grange, (New Haven, CT: 
Connecticut State Grange, 1900).

Correll, Donovan S. “Salute to Our Charter Members,” American Fern Journal, 43(4), (Oct. - 
Dec., 1953):137-149.


Crosland, Maurice P. Gay-Lussac: Scientist and Bourgeois, (Cambridge, UK: Cambridge 
University Press, 2004).

Cross II, Coy F. Justin Smith Morrill: Father of the Land-Grant Colleges, (East Lansing, MI: 
Michigan State University, 1999).

D’Amato, Donald A. Warwick: A City at the Crossroads, (Charleston, SC: Arcadia Publishing, 
2001).

Dalzell, Robert F. American Participation in the Great Exhibition of 1851, (Amherst, MA: 
University of Massachusetts Press, 1960).


Fries, Jöns A. *Henry Prentis Armsby*, (State College, PA, Penn State College Press, 1923).

Fuller, Oliver P. *The History of Warwick, Rhode Island, from its Settlement in 1642 to the Present Time*, (Providence, RI: Angell, Burlingame & Co, 1875).


Halttuten, Karen. Confidence Men and Painted Women: A Study in Middle Class Culture in America, 1830-1870, (New Haven, CT: Yale University Press, 1982).


Hicks, John D. The Populist Revolt, (Minneapolis, MN: University of Minnesota Press, 1931).


Lord, J.E. “Yale or Storrs?: The Land-grant Controversy in Connecticut.” (PhD diss., Yale University, 1974).


Metcalf, Henry H. *New Hampshire Agriculture Personal and Farm Sketches*, (Concord, NH: Republican Press Association, 1897).


Morrill, Justin. “*Address,*” In *Massachusetts Agricultural College, June 21, 1887*, (Amherst, Mass: J. E. Williams, Book and Job Printer, 1887).

_______ *An Address in Behalf of the University of Vermont and State Agricultural College, Delivered in the Hall of the House of Representatives, October 10, 1888*, (Burlington, VT: Free Press, 1888).


“Our Agricultural School.” In *Sixth Annual Report of the State Board of Agriculture, Made to the General Assembly at its January Session, 1891*, (Providence, RI: E. L. Freeman, & Son, 1891).


Proposed Plan for a Complete Organization of the School of Science, Connected with Yale College, (New Haven, CT: Ezekiel Hayes, 1856).


“Report of the Committee on Education in Relation to the Agricultural Department of Brown University.” In Rhode Island, Acts and Resolves Passed at the January Session of the General Assembly of the State of Rhode Island and Providence Plantations, 1869, (Providence, RI: Providence Press, 1869).


Reports on the Courses of Instruction in Yale College by a Committee of the Corporation and the Academical Faculty. (New Haven, CT: Hezekiah Howe, 1828).


Searls, Paul M. *Two Vermonts: Geography and Identity, 1865-1910*, (Lebanon, NH: UPNE, 2006).

*Second Annual Report of the Board of Managers of the Rhode Island State Agricultural School and Experiment Station, Made to the General Assembly at its January Session*, (Providence, RI: Freeman & Son, 1890).

*Seventh Annual Report of the Secretary of the Maine Board of Agriculture*, (Augusta, ME: Stevens & Sayward, printers to the State, 1862).


_______. *Report to the Corporation of Brown University, on the Changes in the System of Collegiate Education*, (Providence, RI: George H. Whitney, 1850).

_______. *Thoughts on the Present Collegiate System in the United States*, (Boston, MA: Gould, Kendall, & Lincoln, 1842).


**Newspapers, Magazines, and Agricultural Journals**

*Connecticut Farmer*
*Country Gentleman*
*Hartford Courant*
*Hartford Times*
*Farmington Valley Herald*
*Maine Farmer*
*Massachusetts Ploughman*
*New England Farmer*
*New England Homestead*
*New Haven Register*
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*Norwich Bulletin*
*Pawtucket Evening Times*
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Residential Life Coordinator, Bucknell University, 2004-2006

Selected Publications


Academic Presentations

Professional Service
Editor, Higher Education in Review, 2010
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