



Anti-democracy college An outline of the corporatist culture of organized social machinery and the leadership of the land-grant agricultural colleges in the progressive era
by Gordon Gary Scoville

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Education
Montana State University
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Abstract:

The Morrill Act of 1862 established a national system of land-grant colleges and universities. Generations of scholars have viewed these institutions as democratic because the schools supposedly diffused opportunity to realize the traditional liberal principle of individual freedom for self-determination. Through an analysis of the leaders - presidents, deans, and directors - of the land-grant agricultural subdivisions in the "progressive" era, the purpose of this dissertation is to examine whether the leadership's completion in that period of a tripartite organization of resident instruction, research, and extension accorded with democracy.

Antonio Gramsci's concept of hegemony guided the examination. This idea refers to a cultural process of practicing principles in such a way as to form class alliances that secure popular consent to a dominant politics. Use of the historical method of "internal criticism" established the credibility of primary material that entered a dialogic encounter with the Gramscian conception, which provided a provisional explanation of the original documents.

The results of the dialogue show the tripartite structure as a class alliance embodying the Newtonian world machine as a business corporation based on corporatist principles of centralized authority, priority of office over individual, and fragmented functions. Agricultural college leaders helped convey specific forms of organized corporatism to farming people. Corporatism consisted of organization that supplanted popular reconstruction of society with central coordination of mass objectives as the fragmented pursuit of single-issue interests. In the countryside, this conveyance sought to reproduce elements of the organizational design exemplified by the tripartite arrangement, and thus aimed to secure consent to a dominant politics of corporate liberalism that shifted liberal agency from individuals to centrally coordinated groups.

The study concludes that collegiate participation in and support of this rising mode of political dominance took form in assistance in constructing a "corporatist culture of organized social machinery" -- the extension of corporatist principles and practices in a society that the college leadership imagined to be a machine. This diffusion constituted an anti-democratic denial of the individual and popular capacity to determine their societal destiny.

ANTI-DEMOCRACY'S COLLEGE: AN OUTLINE OF THE CORPORATIST
CULTURE OF ORGANIZED SOCIAL MACHINERY AND THE
LEADERSHIP OF THE LAND-GRANT AGRICULTURAL
COLLEGES IN THE "PROGRESSIVE" ERA

by

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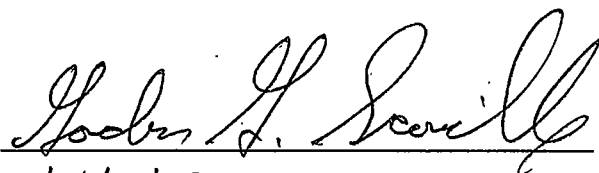
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TABLE OF CONTENTS

	Page
APPROVAL	ii
STATEMENT OF PERMISSION TO USE	iii
TABLE OF CONTENTS	iv
ABBREVIATIONS	viii
ABSTRACT	ix
CHAPTER:	
1. INTRODUCTION	1
The General Theme of the Study: From Liberalism to	
Corporate Liberalism	1
Liberalism	3
Corporate Liberalism	5
Corporatist principles	6
Organized corporatism	6
The image of the machine	7
Theory and Method	8
The Critical Departure of Cultural Marxism	8
The Conceptual Apparatus of the Study	10
Hegemony and culture	10
Historical bloc and class	11
Passive revolution, the state, and politics	13
Historical Method	14
Statement of the Thesis	17
The Narrative in Brief: Toward a Synthesis of Theory and	
History as Exemplified by Focus on the Leadership of	
the Land-Grant Agricultural	
Colleges	18
The Narrative in Brief	18
The social context	18

TABLE OF CONTENTS--Continued

	Page
Land-grant liberalism and the challenge of Kansas State	19
The social context of the early twentieth century	20
Class contradictions	21
Organizing a bond	22
The redirection of liberalism	24
The conveyance of organized corporatism to the countryside	24
The result: Popular passivity	26
Purpose of the Study: The Significance of and Need for Critical Examination of the Agricultural Colleges in the "Progressive" Era	27
Purpose	27
Significance and Need	27
Limitations	28
Endnotes	30
 2. THE NINETEENTH-CENTURY CONTEXT FOR THE TURN OF THE AGRICULTURAL COLLEGES TOWARD CENTRALIZATION OF AUTHORITY	44
The Rupture of Liberal Society in the 1890s	44
The New Class and an Expanding Administrative State	57
Contradiction Between the New and Middle Classes	64
An Expanding Administrative State	70
The Liberalism of the Land-Grant Institutions and the Case of Kansas State	73
An Overview of Land-Grant Beginnings and Devel- opment	73
Land-Grant Liberalism	76
The Case of Kansas State	81
The New Class and the Vertical Turn of the Agricultural Colleges	87
The New Class in the Colleges	89
Class Contradiction	96
The Vertical Turn	100
Looking Ahead	104
Endnotes	107

TABLE OF CONTENTS--Continued

	Page
3. ORGANIZING A CORPORATIST BOND, 1900-1916	128
The Social Context of the Early Twentieth Century	128
Mechanistic Imagining	130
Persistent Contradiction	134
The Mass of Farming People and the Rural Problem	138
The Social Context and the Readiness of Agricultural College Leaders to Meet Its Class Oppositions	144
Resident Instruction	146
Agricultural Research	159
Agricultural Extension	174
The Farmers' Institutes	177
Seaman Knapp and Farmers' Cooperative Demonstra- tion Work	179
College Extension	184
Business Leaders as the Catalyst for a National Extension System	189
The Smith-Lever Act and the "Organized Form of Life" ..	197
Mechanistic Imagining and the College as Business Corporation	203
Mechanistic Imagining	203
The College as Business Corporation	213
Endnotes	219
4. THE NEW NATION AND SALIENT FORMS OF THE DESIGN AND CONSTRUCTION OF ORGANIZED CORPORATISM IN THE COUNTRYSIDE, 1900-1916	252
The New Nation and the Rural Problem	252
An Alternative General Good: The Nonpartisan League ..	262
College Leaders and the National Harmony of Centrally Administered Fragmentation	266
Forms	271
The Farm Bureaus	272
Boys' and Girls' Clubs	274
Farm Management	278
Living in a Corporation	286
Denouement: The Swan Song of Liberty Hyde Bailey	287
Endnotes	294

TABLE OF CONTENTS--Continued

	Page
5. SUMMARY AND CONCLUDING THOUGHTS	309
Summary	309
Concluding Thoughts	315
Endnotes	318
BIBLIOGRAPHICAL NOTE	319
BIBLIOGRAPHY	326
Primary Material: Convention Proceedings and Government Documents	326
Convention Proceedings	326
Government Documents	331
Primary Material: Books, Articles, and Other Documents ...	334
Secondary Material: The Land-Grant Institutions and the United States Department of Agriculture	338
Secondary Material: Higher Education	344
Secondary Material: General History	346
Secondary Material: Theory and Method	354
Dissertations and Miscellanea	357

ABBREVIATIONS

The following abbreviations of convention proceedings and government documents are used in the endnotes.

- | | |
|--|---|
| (1) AAACES, <u>Proc.</u> | Association of American Agricultural Colleges and Experiment Stations, <u>Proceedings</u> . |
| (2) AAFIW, <u>Proc.</u> | American Association of Farmers' Institute Workers, <u>Proceedings</u> . |
| (3) Editorial, <u>ESR</u> , | Editorial, <u>Experiment Station Record</u> , United States Department of Agriculture, Office of Experiment Stations. |
| (4) OES, <u>Report</u>
Bulletin, Circular | United States Department of Agriculture, Office of Experiment Stations, <u>Annual Report</u> . |
| (5) SPAS, <u>Proc.</u> | Society for the Promotion of Agricultural Science, <u>Proceedings</u> . |
| (6) USDA, <u>Year.</u> | United States Department of Agriculture, <u>Yearbook</u> . |

ABSTRACT

The Morrill Act of 1862 established a national system of land-grant colleges and universities. Generations of scholars have viewed these institutions as democratic because the schools supposedly diffused opportunity to realize the traditional liberal principle of individual freedom for self-determination. Through an analysis of the leaders -- presidents, deans, and directors -- of the land-grant agricultural subdivisions in the "progressive" era, the purpose of this dissertation is to examine whether the leadership's completion in that period of a tripartite organization of resident instruction, research, and extension accorded with democracy.

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CHAPTER 1

INTRODUCTION

The General Theme of the Study: From Liberalism to Corporate Liberalism

The Morrill Act of 1862 authored a national system of land-grant institutions of higher education. The Hatch Act of 1887 and the Smith-Lever Act of 1914 nationalized research and extension work as integral parts of a tripartite mission wherein the leaders of the collegiate subdivisions of agriculture in these schools conducted resident instruction, experiment station investigation, and off-campus diffusion. Both contemporaries and later scholars assumed that the triune production, transmission, and suffusion of knowledge constituted the democratization of higher learning, the popularization of what had once been the privileged domain of a few. This dissertation principally asks if that assumption accurately conveys the meaning of the conduct of those leaders. At the same time, the far-ranging subject of this study, which provides context for its specific focus on the leadership of the land-grant agricultural colleges, is an examination of the development of democracy during the "progressive" era of American history, encompassing the years from the turn of the twentieth century to World War I.¹ This introductory chapter will establish the concepts and methodology for the exploration of the special and contextual topics of the thesis.

The issue of politics is central to these subjects. Samuel Bowles and Herbert Gintis speak of political matters in terms of the "socially consequential exercise of power" as a determining process that proceeds in all spheres of a society, and which impels some to seek a destiny defined by others. Rather than accept the common assumption that confines the field of political action to governmental policies regarding the distribution of the economic surplus, they encourage that it be viewed as inclusive of multifaceted activity in which all social practices are implicated. For example, when schools and families convey knowledge and norms that bear on individual life prospects, they are partaking in a substantial determination of human destiny that is political in nature. For Bowles and Gintis, this determination is democratic when it fixes on an organization of power, of politics, that engenders the maximum feasible popular liberty to have voice in the decisions that shape living conditions. Of course, not everything in society can be reduced to political dynamics, but nothing can be understood apart from them. Thus, Bowles and Gintis offer a politically derived criterion for the analysis of a society: "All social arenas, then, are susceptible to a common set of normative principles and can be analyzed in terms of the differential manner in which they organize the range of human practices."² These principles and their varying practice are the material of politics as they define human destiny. Both can be specified by considering the dominant modes of political organization in America at the turn of the twentieth century.

that meant uniting with many of those comprising a complex configuration of administrators, scientists, teachers, engineers -- professional intellectuals, who represented a rising "New Class" of support personnel for the emerging bureaucratic order.¹¹

Corporatist principles. How could a collectivist system, the opposite of its individualist predecessor, still be thought of as "liberal?" The retention of this name points to the incorporation of traditional values into the new society on the basis of "corporatist" principles: centralization of authority or legitimate power, priority of institutional office over individual, fragmentation of functions, and the extension of these principles as a foundation for the organization of the American social whole.¹²

Individual freedom was increasingly relocated. Instead of finding expression through autonomy apart from large-scale organizations, its exercise was channeled into the officially coordinated, functional activities of particular institutions -- relative autonomy within bureaucracy rather than independent of it. Befitting the rising priority on office and organization, and although Americans continued to think of themselves in individualistic terms, actual liberal agency was shifting from individuals to groups. The spread of corporatist principles signaled that Americans were finishing their excursion to the frontier and were being guided toward a future as joiners.

*relocation
of indiv.
freedom
under new
liberal
regime*

Organized corporatism. Business leaders and their New-Class allies wished for the nation's populace to transcend their localist heritage and embrace a nationalism that aimed for an integrated society composed of organizations that

Liberalism

Ceaseless economic growth as a sign of unlimited progress, unfettered productive power, the earthy wisdom of the common-sense practicality of the "average man," opportunity for individual geographic and social mobility, useful knowledge acquired through ingenuity and inventiveness, Horatio Alger's climb from rags to riches, faith in self-help, decentralized or localist governmental authority, the inviolable freedom of the market -- all of these, and more besides, constituted a constellation of assumptions that for much of their history many Americans received as the normative principles and teleological ideals of a properly organized "liberal society."³

Turn 2
the
Century

As we shall see in ensuing chapters, the practice of them formed the politics of liberalism. Yet, rather than signal the existence in the American past of a homogeneous political tradition, liberalism moved in several intellectual currents and turned in multiple directions. The *laissez-faire* competition of Social Darwinism was not equivalent to Jefferson's family-farm agrarianism. Enlightenment rationalism was not identical with the self-made ethic upheld in Jacksonian rhetoric. The conception of a natural right to property did not always square with egalitarian aspirations for personal rights to greater self-determination.⁴

Social unity amid these discordant traditions depended on a common desire for individual freedom from external constraint and on a shared yearning for liberty to realize the highest possible self-improvement and autonomous self-government. This libertarian quest ideally would be available to all who did not infringe on the right of others to participate in it.⁵ According to the liberal view,

if conceived of as a wide-open marketplace imbued with Lockian limitations on governmental interference, then American society could become a free world.⁶

Broadcast from press, pulpit, and schoolroom, by the middle third of the nineteenth century the Jacksonian ideology of self-help was in ascendancy over all other contemporaneous liberal expressions. Richard Hofstadter has noted both its traditional middle-class authorship and its embodiment in the person of Abraham Lincoln.

Thoroughly middle-class in his [Lincoln's] ideas, he spoke for those millions of Americans who had begun their lives as hired workers -- as farm hands, clerks, teachers, mechanics, flatboat men, and rail-splitters -- and had passed into the ranks of landed farmers, prosperous grocers, lawyers, merchants, physicians, and politicians. Theirs were the traditional ideals of the Protestant ethic: hard work, frugality, temperance, and a touch of ability applied long and hard enough would lift a man into the propertied or professional class and give him independence and respect if not wealth and prestige. Failure to rise in the economic scale was generally viewed as a fault in the individual, not in society. . . .

This conception of the competitive world was by no means so inaccurate in Lincoln's day as it has long since become; neither was it so conservative as time has made it. It was the legitimate inheritance of Jacksonian democracy. It was the belief not only of those who had arrived but also of those who were pushing their way to the top. If it was intensely and at times inhumanly individualistic, it also defied aristocracy and class distinction. Lincoln's life was a dramatization of it in the sphere of politics as, say, Carnegie's was in business.⁷

By the early twentieth century, one did not need to presume a golden age of the liberal past in order to recognize that during the antebellum years the prevalence of owner or partner-managed firms had provided a relatively hospitable environment for liberal hopes.⁸ A small-scale entrepreneurial or proprietary

capitalism had furnished a basis upon which ideals of decentralized authority and individual freedom could be verified by actual economic experience. But such confirmation was increasingly undermined by the early twentieth century.

Corporate Liberalism

That erosion was produced by the rise of the business corporation. Initiated by its industrial and financial leaders in the upper middle class, the corporation represented a new form of capitalism, a collectivizing of private property into large-scale organization that provided for the centralized control of processes of supply, production, and distribution.⁹ It likewise created the reconstruction of the nation's politics. Efforts of political reconstruction were prompted by the growing reality that economic experience increasingly invalidated traditional liberal principles of decentralization and individualism.

The dominant response to the invalidation was "corporate liberal." Scholars have disputed what this concept means,¹⁰ but it can be understood as a designation for the politics that began to construct a collectivized social order compatible with corporate capitalism. Regulatory and other bureaucracies were built to operate like corporations and to preserve their scale of activity. Functionally specific groups were organized with aims that fell short of challenging corporate power. Technical experts, possessing advanced training from institutions of higher education, supplied the managerial skills to enable the new organizations to work smoothly. Corporate liberal society was formed principally through an alliance of business leaders with an expanding administrative state apparatus. When business leadership allied with this state, in concrete terms

embodied corporatist principles. These associations were designed to facilitate centralized coordination. They left to coordinators the task of conceiving their proper interrelation as a whole. Executing fragmented to differentiated tasks under centralized guidance, the groups were intended to be a harmonious, interdependent reflection of the internal workings of the business corporation.¹³ In agriculture, for example, the formation of commodity groups, marketing and purchasing cooperatives, and livestock-testing and breeding associations comprised such activities. To the extent that corporatism was successfully universalized throughout society, Americans began to live as if inside a business corporation. They started conforming to the pattern of corporatist principles and practices.

x - exerts run it, while the rest of society remains manageable parts.

The image of the machine. The construction of corporate liberal society via corporatism was facilitated by a venerable analogy. Americans inherited from Europe the "reference-idea" or image of the world as a machine.¹⁴ Understood as a systematic arrangement of parts for the transmission of power, and in Sir Isaac Newton's projection of it to the cosmos as functionally subdivided and harmoniously interconnected, the machine offered metaphorical guidance in the establishment of corporatism's similarly constituted structure.¹⁵

The image of the machine had long influenced a liberal tradition where the marketplace itself could be viewed as a self-regulating mechanism for the behavior of the individual atoms operating within it. But in ascendant corporate liberal society corporatist usage accented a different sense of the image. The "social machinists" in the New Class grasped it as the efficient and harmonious

management of the world by experts who understood how the machine worked and how to realize its social extension.¹⁶ In a liberal society the machine took care of itself according to natural law; in corporate liberal society the centralized administering of expert knowledge took care of the machine. On the assumption that some people must control the machine's operation while others functioned as parts of it, an image was seized upon that simultaneously became a precise expression of corporatism and an anti-democratic denial of popular initiative regarding the decisions that shaped living conditions.¹⁷

Theory and Method

This study develops a theoretical explanation for the transition from a liberal to a corporate liberal society. It argues that the transition is evident in an important section of the American past, specifically in the activities of the leaders of land-grant agricultural colleges.¹⁸ First, it is important to discuss the theoretical vision that informs the investigation.

The Critical Departure of Cultural Marxism

"Cultural Marxism" takes its inspiration primarily from the work of the young Georg Lukacs, Antonio Gramsci, and the Frankfurt School.¹⁹ Against the determinism in both orthodox Marxist tradition and in non-Marxist, "positivist/empiricoanalytic" thought,²⁰ it views knowledge as the product of intentional effort to understand and achieve liberation from a social totality of relationships structured by the domination of some people over others. That is, a cultural Marxist researcher is guided by the concept of *praxis*, the aim of using theoretical tools

for the production of knowledge that will assist practical action against a structure of oppression.²¹

The cultural Marxist is morally and politically committed to emancipatory thought and behavior.²² This does not mean flight from the attempt to discover objective social processes. Nor does it signify escape into a subjectivity of pure intentionality and willful volition. To the contrary, it upholds Gramsci's view that "reality does not exist on its own, in and for itself, but only in an historical relationship with the men who modify it."²³ Human beings cannot conduct empirical investigations as detached or passive observers; rather, their inquiry involves relational changes of both themselves and what they perceive. Cultural Marxists desire that this change be liberating.²⁴

Cultural
Marxists

They follow the theoretical admonition to study a specific subject in light of the total social context that surrounds it. This obedience seeks a synoptic vision of the wider relationships that condition those in special spheres of society. Without attention to the whole of which something or someone forms a part, liberating action is impossible.²⁵ This dissertation thus examines the leadership of the land-grant agricultural colleges in the context of the larger changes in American liberalism.

Ultimately, cultural Marxism proceeds as "negative thinking." It raises questions about what constitutes the politically desirable ends of freedom, justice, and humanity, and asks whether a given social order can possibly attain them. If not, it thinks of "negating" that order. In this sense, it is critical. It departs from the "positive thinking" of an instrumental reason that concerns itself

with the elaboration of operational techniques, while neglecting the political issue of selecting ends that determine whether or not the techniques are valuable. This instrumentalism is positive thinking because it effectively affirms whatever an order is. Cultural Marxism, on the other hand, opens debate on the matter of what an order ought to be.²⁶

The Conceptual Apparatus of the Study

The analytic and synthetic concepts of the study employ the critical vision of cultural Marxism. They are drawn principally from the thought of Antonio Gramsci, but they also bear the imprint of others of a cultural Marxist persuasion.²⁷

Hegemony and culture. Gramsci contended that ruling classes and groups in a society could assert their control over the populace through either of two methods: by using coercion and the armed force of the state, or by applying a more sophisticated "hegemony." The latter refers to the cultivation of some degree of voluntary popular consent to the sway of the rulers.²⁸ This consent is produced when the institutions of "civil society" -- educational, religious, and various private associations -- cooperate with the state in universalizing what one Gramsci scholar has called the "values, attitudes, beliefs, cultural norms, legal precepts," that is, the normative principles and practices that oblige the populace to restrict their hopes to an order that functions to guarantee the interests of the rulers.²⁹

Hegemony consists of attempts to persuade the masses of people to adopt a particular culture. Although it is a complex and confusing notion,³⁰ "culture"

can be used in an anthropological sense to mean, in Stanley Aronowitz's words, "all forms of human activity: human sexuality, ways of interaction among persons, ideologies, attitudes and belief systems." More precisely, he indicates that social life is made meaningful by having mental activity inscribed, patterned, congealed, or "sedimented in institutions, practices, habits of everyday existence."³¹ By connecting this definition with Gramsci's thought, we grasp that when the cultural process is successfully carried out on behalf of rulers, hegemony is secured; when there is failure to so establish it, coercive force remains as the only option for those who would maintain their dominance. (Domination always rests on a precarious balance between persuasion and force. If the costly use of the latter is to be avoided, then the social order must be anchored in the predominating leadership of the former.)³²

Historical bloc and class. Gramsci argued that hegemony is liable to falter, particularly when rulers shift the "terrain" of a basic mode of economic organization (for example, as happened in Western capitalism when a corporate landscape increasingly supplanted that of an entrepreneurial past).³³ If other cultural Marxist views are blended with Gramsci's, it can be considered that the fresh terrain occasions economic experience that disappoints the hopes raised by the previously dominant principles and practices.³⁴ Responding to the disappointment, mass movements arise that challenge the interests of the rulers. The rulers respond by struggling to establish a new hegemony that will protect their power.³⁵

Gramsci theorized that a "historical bloc" of elite alliances, formed between and within classes, can rise to advance that struggle.³⁶ In keeping with the aforementioned blend of views, we find that the bloc meets the rupture of economic experience and erstwhile principles by propagating normative assumptions that congeal in practices which are compatible with the new terrain. This propagation engenders the restoration of ruling persuasion, induces the wider populace to live a culture that is adapted to the altered economic landscape.³⁷

the shift from capitalism to capitalist order

Gramsci argued that during the process of the formation of the bloc, each of its constituents manifests economic interests and mental ideals that contradict those of others involved in the budding union. Such contradictions are resolved through a pattern of compromises conceding to each party something they most desire. The result is a body of united adherents who are wedded to the diffusion of the new hegemony. However, a bloc is not merely a coalition of interest groups. Instead, it signifies a deeply bonded union at both the level of interests and ideals.³⁸

The conception of a historical bloc raises the difficult issue of what a "class" is.³⁹ Here, following Marx, it can be defined as either "in-itself" or "for-itself." The former refers to an objective economic relationship to the means of production, in which the dividing lines between classes (and among groups within them) depend on how much income-earning property or capital each possesses. The latter refers to consciousness of economic position and hence to the capacity of groups to act as cohesive agents on behalf of aims as class aims.⁴⁰ One commentator on the cultural Marxism of E.P. Thompson offered a criterion for

determining whether agents have class consciousness. He indicated that it can be inferred from the degree to which these protagonists advance organizations or "distinctive institutions" that mark their awareness of themselves as actors who have class purposes conditioned by their location in economic relationships.⁴¹

Passive revolution, the state, and politics. Gramsci often pointed to a political strategy of "passive revolution" conducted by the leadership of a historical bloc.⁴² In order to defend their economic interests, leaders sometimes must initiate radical or fundamental societal reforms.⁴³ These serve to contain mass movements by channeling them away from comprehensive structural proposals and toward fragmentary, single-issue preoccupations. The containment safeguards the new economic terrain from the competing radicalism of mass movements that would have modified the economic structure in a manner contrary to ruling interests.⁴⁴

In containing challenges, the bloc extends the activity of the state into new bureaucratic linkages with the wider society.⁴⁵ Here the "state" must not be understood to signify merely the apparatus of government, but, rather, that apparatus as stretched into multifarious social relationships.⁴⁶ The fresh linkages are designed to stabilize rule from the top by permanently removing the popular initiative that could destabilize it in the name of control from below.⁴⁷

To avoid the exercise of force, the bloc mobilizes the state to seek stability by acting as an "educator." That is, again combining Aronowitz's cultural point with Gramsci's message, state instruction sediments normative principles in practices that are compatible with the economic terrain of the rulers. The

populace learns expectations appropriate to the recent stage of material development that the ruling classes have instigated. As Gramsci wrote, "In reality, the State must be conceived of as an 'educator,' in as much as it tends precisely to create a new type or level of civilization."⁴⁸ The populace, having had no part in initiating the creation, are motioned toward passive assent to it. An emergent hegemony of the rulers is thus en route to security against popular challenge.⁴⁹

Gramsci crowned his concept of hegemony with an inclusive understanding of politics. That concept is designed to comprehend a way in which rulers rule, a manner in which human beings are controlled and their destiny determined. And politics encompasses a totality of social practices -- alternately issuing in cultural, economic, educational, governmental, and like expressions -- that bear on the production of the collective future. Ultimately, hegemony means a political exercise of leadership via the cultural process of persuasion that implants normative principles in popular practices.⁵⁰

Historical Method

This study employs historical method as construed by the noted British historian, E.P. Thompson.⁵¹ He defines it in the following way: "The disciplined historical discourse of the proof consists in a dialogue between concept and evidence, a dialogue conducted by successive hypotheses, on the one hand, and empirical research on the other."⁵² During the course of investigation, concepts (hypotheses or provisional explanations) are repeatedly interacted with evidence (objective facts in the form of ideas and events) until a synthesis of the two begins to emerge in the final composition. At that point, concepts are

fleshed out with historical detail. Facts, in turn, are conceptually interpreted as the product of class action in a social totality of determinations, and hence they are presumed neither to originate independently of human authorship nor to speak for themselves.⁵³ Still, they retain an ineluctable objectivity. Before the point of emergent synthesis, this requires that concepts be repeatedly tried and discarded until those selected achieve a proximate fit with real evidence.⁵⁴

Accordingly, for example, it would be a mistake to assume that the author of this study simply chose cultural Marxist concepts and then applied them in a straightforward fashion to the subject of inquiry. Actually, he made several conceptual alterations before settling on general ideas that seemed appropriate to the documentary materials that undergird his narrative presentation of evidence.⁵⁵

Thompson's method of gathering factual proof of historical probabilities is consistent with the traditional practice of historians. That practice has consisted largely of efforts to determine the authenticity and credibility of evidence through the use of "external" and "internal criticism." The former refers to the process of authenticating the authorship and date of documents and other contemporary materials. The latter alludes to ways of establishing the meaning and veracity of contemporary observations.⁵⁶ These methods of analysis are fundamental to historical investigation and, under their scrutiny, the documentary materials in this study provided an empirical foundation for conceptual explanation.⁵⁷ The methods fortified the evidence that could be placed in dialogue with cultural Marxist concepts.

To the reader, the use of such concepts may connote bias and inappropriate exercise of value judgments in scholarly work. Bias can be viewed as a passionate commitment to a particular persuasion, an engagement that prevents evidence from being properly weighed. No scholar can be completely free from this. The best protection against it lies both in frankly stating one's commitment and in contrasting it with opposing views.⁵⁸

The related matter of value judgments is addressed by Thompson.

Such judgement must itself be under historical controls. The judgement must be appropriate to the materials. It is pointless to complain that the bourgeoisie have not been communitarians, or that the Levellers did not introduce an anarcho-syndicalist society. What we may do, rather, is identify with certain values which past actors upheld, and reject others. We may give our vote for Winstanley and for Swift; we may vote against Walpole and Sir Edwin Chadwick.⁵⁹

Correspondingly, in the American context of the narrative that follows, the author sided with the Populists and against the leaders of the agricultural colleges.

It is appropriate for the researcher, as a valuing creature, to make choices in favor of past expressions of values. As Thompson proclaims, "I am not in the least embarrassed by the fact that, when presenting the results of my own historical research, I offer value judgements as to past process, whether openly and strenuously, or in the form of ironies or asides."⁶⁰

Regardless of the values that one embraces, however, Thompson insists that a good test for the truth of one's interpretation rests in "the *praxis* of eventuation." The transformative outcomes of a historical process will "throw light back upon the ways in which the elements were previously related." And, "In this

sense the eventuation confirms or disproves, hardens or qualifies, the explanatory hypothesis." One tries, both without arguing *post hoc ergo propter hoc* and without postulating identical later conditions, to grasp how social relationships formed a pattern that appears in subsequent development. Historical investigation allows for "testing every hypothesis in an outcome."⁶¹ Therefore, Chapter 5 of this study highlights post-World War II critiques of the agricultural colleges that tend to confirm the author's observation of collegiate practices in the "progressive" era.

Finally, the practical arrangement of the study adheres to a topical organization of chapters that can be surmised by reading ahead to the capsule presentation of the narrative contained in this chapter.

Statement of the Thesis

* This dissertation argues that the political hegemony of American liberal society ruptured in the 1890s and lost the capacity for effective verification of its cultural principles in economic experience. In succeeding years, that rule was replaced with the beginnings of the political hegemony of a corporate liberal society. The transition from the dominant politics of liberalism to that of corporate liberalism was evident in the activities of the leadership of the land-grant agricultural colleges.⁶² This passage was conveyed through their assistance in the construction and advance of what the author has elected to call "the corporatist culture of organized social machinery." This refers to the extension and sedimentation of corporatist principles and practices in a social world that was

imagined by college leaders to be a machine. The outcome of the conveyance was the furtherance of hierarchical social relations and a contribution toward the decline of political initiative among American farming people.⁶³ Among this population, democracy was sent into recession.⁶⁴

The Narrative in Brief: Toward a Synthesis of Theory and
History as Exemplified by Focus on the Leadership
of the Land-Grant Agricultural Colleges

This section allows theoretical concepts previously discussed to elucidate an actual historical process. Such an infusion of theory can accomplish two tasks. It can enlighten the concepts and make them more understandable, and it can prepare the reader for the narrative chapters that follow. Any effort toward a synthesis of this nature encounters the difficulty involved in trying to wed opposites. Theory as abstraction is static; history as process is concrete and fluid.⁶⁵ Therefore, attempts to join them are tentative, aiming at a purpose or direction for inquiry.

The Narrative in Brief

The social context. Chapter 2 observes that in the nineteenth century various agencies practiced a cultural persuasion touting the promise of a liberal society. Workers learned that with hard work and frugality they could join the propertied middle class. Farming people discovered that abundant land would enable them to pursue the autonomous dreams of their families. In a word, Americans discerned that a decentralized government, responsive to local

aspirations, would bespeak a world that imposed few restraints on the general desire to seize opportunity.

Eventually, however, leaders of business corporations moved to secure economic advantage both by corrupting legislatures and by threatening competitive opportunity through establishment of experimental corporate arrangements that concentrated wealth and authority. By the 1890s, as the desire for land clashed with the closing of the frontier, and as economic depression foreclosed the hopes of many, it became impossible for growing numbers of people to realize the liberal promise.

In the name of fundamental modification of the economics of land, transportation, and finance, Populism rose to challenge corporations. More inclined than Populists to respond to Socialist appeals for mass control of production, workers initiated unparalleled strike action against their employers. In many strikes, corporate leaders pressured government to use force to maintain their dominance. Liberal society ruptured and new popular agencies emerged with the hope of comprehensively redirecting it.

Land-grant liberalism and the challenge of Kansas State. Chapter 2 also finds that the land-grant colleges and universities were among the agencies that practiced liberal persuasion. Beginning with their nationalization under the Morrill Act of 1862, they were immersed in the democratic inheritance of the middle class. This immersion was expressed both with a high estimation of decentralized state autonomy and with the conviction that opportunity came with self-help that was derived from application of science and geared to the purpose of

unleashing unlimited production. Some within the institutions embraced a distinct agrarian liberalism: American democracy depended on the independent farmer who, because of his self-reliant possession of property and proximity to the harmony of nature, guaranteed republican stability.

Amid the rupture of the 1890s, however, the Populists secured control of Kansas State Agricultural College. This opened an area of American society to a program of land-grant education that questioned whether individual self-help could resolve social and economic maladies. The Populists desired to provide knowledge farmers could use in a sweeping political reconstruction of the economy. They identified the deficiencies of liberalism in a nation faced with the emergence of corporations and the widening interlock of technologies of transportation and communication -- all of which dwarfed the small-scale prerequisites for liberal relations. In effect, the Populists raised the question of what would happen to liberal principles now that economic experience no longer confirmed them.

Heading subdivisions of the land-grant institutions, the leadership of the agricultural colleges sought after 1900 to incorporate those principles into a contribution toward social reconstruction that radically altered the substance of liberalism. These leaders conducted this reorganization in a way that could scarcely be called Populist.

The social context of the early twentieth century. Chapter 3 maintains that in the new century, as industrialization increasingly came under the control of large corporations, nationalism, organization, and social cohesion became

watchwords of the "progressive" era. For most New-Class intellectuals and upper middle-class business leaders, however, the mass of farming people constituted the cornerstone of a "rural problem" that belied such watchwords. The latter were faulted both for not producing at a level that would ensure cheap food for expanding urban markets and for clinging to locally isolated neighborhoods. Thus, in nationalist terms, they were considered to be among the most uncohesive and disorganized people in the United States.

Class contradictions. Chapter 3 continues by noting that organized farmers and various businessmen of the middle class were under the residual hold of the liberal heritage, and thus clamored for practical self-help techniques that would increase agricultural production and trade and thereby bolster their individual autonomy in the marketplace.⁶⁶ They viewed the rural problem largely as a practical question of how to raise production. Meanwhile, upper middle-class business leaders frequently echoed the demand for practicality. They believed, however, that the problem was primarily a question of how to redirect localist living patterns into the integrated society of the corporation.

In the agricultural colleges a portion of the New Class increasingly upheld the meritocratic principles of professionalism.⁶⁷ This posture committed them to the advancement of their scientific expertise and esoteric specialties. The commitment promised no quick payoff in practical terms and thus contradicted middle-class demands for self-help aids. Agricultural scientists, for example, were especially angered by appeals for immediate results since they viewed

these as a detour from the fundamental research that was necessary to rationalize agricultural practice.

The professionalism of the New Class thus contradicted the practicality of constituencies within the traditional middle class, while the rural problem contradicted both the aim for greater productivity and the desire for an integrated national order. If they were to solve the problem, New and middle-class antagonists would have to resolve their own differences in a manner that would facilitate a concerted effort to refashion the patterns of practice in farming neighborhoods.

Organizing a bond. Chapter 3 also asks the question, "On what principles could New and middle-class opponents be united?" During the nineteenth century social unity had depended on shared respect for individual freedom. But the individualist ideal now stood in polar opposition to experience in the "age of organization" and exerted a persuasive power designed to secure adaptation to an economic landscape that no longer existed. Clearly, a new union would have to be grounded in new principles.

Acting within the sphere of agricultural education and as the principal federal regulators of the colleges, New-Class leaders in the Office of Experiment Stations of the United States Department of Agriculture helped forge such a union. They assisted college leaders in the completion of the most important development in the history of land-grant policy: the unitary formation of the tripartite organization of agricultural resident instruction, research, and extension. The enactment in 1914 of the Smith-Lever extension law (to complement the Morrill and Hatch Acts

which established federally supported teaching and research in 1862 and 1887) fixed a functionally differentiated pattern of class compromises that congealed in organizational practice.

Within the "tripod," professional and practical ideals were wedded. Through the steady advance both of graduate education in agriculture and of experiment stations as departments for "original" investigation (federally sanctioned as such in the Adams Act of 1906), New-Class teachers and scientists gained domains where esoteric aspirations could be pursued with relative freedom from pressure for practical results. Simultaneously, organized farmers and businessmen were granted how-to-do-it short courses and extension aids in the form of practical farm demonstrations.

The tripartite structure signified a resolution of the contradiction between the New and middle classes. The resolution was inscribed in a bureaucratic pattern of relating based on corporatist principles. That is, the tripod embodied centralization of authority, priority of permanent offices over individuals temporarily occupying them, and fragmentation of functions for those who inhabited the structure and for those who were reached by the extension of its operation. Moreover, as a crystal achievement of functional subdivision, the triune arrangement's leaders viewed it as a realization of mechanistic imagining. They saw the tripartite organization as a machine they could control because they understood its workings; and they grasped it as a force for redesigning the construction of practices in the farming countryside.

The redirection of liberalism. Chapter 3 adds that Americans found their individual freedom -- the primary liberal principle -- increasingly incorporated into a variety of bureaucracies. The completed tripod signaled the way this was done in the agricultural colleges. In the 1860s and 1870s professors of agriculture had accentuated their individual autonomy by embodying the whole of their field in the activity of each professor. Around the turn of the century, however, autonomy was exercised within numerous departmental specialties and triune functions. The importance of individuals of breadth receded before that of the tripartite organization which reconceived autonomous behavior as conduct within the specialized fields that embodied the functional atomization of the tripodal machine. The possibility of acting independently of or apart from such bureaucratic specialization -- a genuine liberal ideal of self-government -- had lessened. Similarly, other Americans witnessed a comparable absorption of their individual freedom into special realms of organizations, an assimilation that shifted decision-making agency from individuals to organized groups. At the same time, however, for most farming people, spatial isolation and decentralized neighborhoods spelled remoteness from this process of incorporation, distance from emergent dominant organizational developments and influence, and the persistence of the rural problem.

The conveyance of organized corporatism to the countryside. Chapter 4 shows that college and business leaders advanced a nationalism that was inculcated into American society by new organizations based on corporatist principles. They sought a coordinated or integrated nation of associations that

externalized the internal operation of the business corporation. Accordingly, traditional localist patterns needed to be refashioned.

Resulting from federal and collegiate cooperation and from the catalytic support of business leaders, the Smith-Lever Act crystallized the expansion of the administrative activity of the state as a response to the rural problem. It linked college extension departments with emerging county farm bureaus. The latter constituted a reform of farm organization that did not challenge the spread of centralized authority, and that narrowed farmers' attention to the pursuit of specific aims (greater production and higher farm prices). When combined with a range of other organizational reforms that were directed toward comparable ends, the bureaus promised to universalize a form of organization that redressed the rural problem by reconstructing neighborhoods to perform like productive cogs in a national machine, designed, correlated, and managed by professional experts and their allies.

As parts of a social machine, farming people were guided toward the execution of specific, often fragmented aims. The fragmentation disintegrated a social whole that was reintegrated and comprehended by those who understood the design of the machine.

Most college leaders wished to convey to the countryside the signal achievement of their tripartite organization: the congealing of corporatist principles in practices. This entailed education to teach the "correctness" of mechanically subdividing human activities and harmoniously interconnecting

them through centralized supervision. Organizations like the bureaus gave the leaders the opportunity to realize their purpose.

The result: Popular passivity. Chapter 4 also observes that Populism had replied to the rise of the corporate economy by seeking its bottom-up, comprehensive political reconstruction. Corporatism responded by seeking to turn popular aims into fragmentary ones. The latter formed a strategy of reconstruction from the top that concentrated comprehension of the social whole and rendered farming people unable to grasp that totality and therefore unable to raise a structural challenge against those who ruled it. To the extent that corporatism was successfully implemented, farming people would be left with little recourse other than passive consent to the corporation as the true representative of the latest stage of industrial civilization. Such consent made business leaders less dependent on the use of force to maintain order and allowed them to profit from the allied action of the college agriculturists who helped to produce the assent.

The rupture of the 1890s was being repaired, but at the expense of popular initiative or democracy.⁶⁸ As the individualist heritage was channeled into the hierarchical organizations of a new corporate liberalism, farming people began increasingly to lose control of their social destiny, a control that had depended on the spread of consequential decision making outward to open land, not upward to the offices of centralized authority.

Purpose of the Study: The Significance of and Need for
Critical Examination of the Agricultural Colleges
in the "Progressive" Era

Purpose

By focusing principally on their agricultural subdivisions, this study's primary purpose was to test the conventional assumption that the land-grant institutions have been democratic.⁶⁹ As indicated above, the narrative was developed as a response to some questions raised by the primary objective. The salient questions include the following:

- (1) Did the establishment of the tripartite structure signify collegiate alliance with people who were interested in diminishing popular involvement in agricultural decision making?⁷⁰
- (2) Have college leaders related to farming people in a way that enhances the latter's control over their destiny?
- (3) Did the construction in their institutions of a corporatist culture of organized social machinery implicate college leaders in the twentieth-century emergence of an "organizational imperative" that subordinates human aims to institutional aggrandizement?⁷¹

Significance and Need

The study of agricultural colleges in the "progressive" era is important because the groundwork for their integral role in the twentieth-century American food system was laid during that period. The completion of the tripartite

organization made them one of the major producers and diffusers of the scientific knowledge that undergirded the development of the complex apparatus of American agriculture.⁷² Was this production and diffusion brought about in a manner consistent with democratic aspirations? Without this critical knowledge, it is difficult to discern whether the colleges need to be re-formed into such consistency. If their leaders were not democrats in a formative period, it is possible that they are not so now. Thus, most Americans might lose or might have lost control of what they eat.⁷³ Historical investigation allows the researcher to test for the presence of long-range tendencies in collegiate behavior that either do or do not support such popular direction.

The land-grant institutions and agricultural colleges have usually been studied with an uncritical eye toward the celebration of their democratic conduct.⁷⁴ The author knows of no critique of them like that of the "negative thinking" ventured here.⁷⁵ Therefore, in order to help fill this gap or need, his treatment of the agricultural colleges enters the field of higher education as a critical or radical analysis of root assumptions. In recent decades such analysis has thrived in the history of education, the sociology of education, and in various regions of American history.⁷⁶

Limitations

These can be listed as follows:

- (1) The focus on agriculture largely prohibited consideration of land-grant developments in engineering, home economics, and military training.⁷⁷

These are all substantial and special subjects in land-grant history. By right they deserve exclusive attention.

- (2) A similar judgment of exclusivity can be made regarding the African-American land-grant institutions supported in the South under the provisions of the Morrill Act of 1890. Therefore, they were not explored in this study.
- (3) It was a methodological necessity to consider the total social context that shaped the agricultural colleges. This opened the investigation to a limitless expanse of topics. In order to make the inquiry manageable, the author was forced to use an outline approach that addressed only the main features of any particular topic. His thesis attempts merely to draw the contours of an exploration that a dissertation is limited to commencing.
- (4) The primary documents that undergirded the study were all formal or published records from the public domain.⁷⁸ Often such documents do not disclose the private motivations that actuate people. The author's purposes could still be satisfied, however, because the culture under investigation was a public accomplishment.

Endnotes

¹"Progressive" is placed within quotation marks because of the dispute surrounding whether the period was indeed progressive. For some time, most scholars accepted the conventional view of the era as one of headway for democratic reformers over industrial "interests." Subsequently, however, Leftist and "organizational" perspectives challenged this interpretation by depicting the period as a retrogression of democracy owing to the rise of bureaucracy and the business corporation. These and other issues relevant to the era are ably detailed in David M. Kennedy, "Overview: The Progressive Era," The Historian 37 (May 1975): 454-465; and Daniel T. Rodgers, "In Search of Progressivism," The Promise of American History: Progress and Prospects, eds. Stanley I. Kutler and Stanley N. Katz (Baltimore: Johns Hopkins University Press, 1982), 115-127.

²Samuel Bowles and Herbert Cintis, Democracy and Capitalism: Property, Community, and the Contradictions of Modern Social Thought (New York: Basic Books, 1986), 66, 24, chs. 1-6 *passim*.

³Max Savelle, Is Liberalism Dead? And Other Essays (Seattle: University of Washington Press, 1967), 45, 51, indicates that such assumptions operated less as a systematic philosophy of social life and more as an informal collection of taken-for-granted truths. Thoroughgoing reflective systems, however, did inform them, as discussed by Louis Hartz, The Liberal Tradition in America: An Interpretation of American Political Thought Since the Revolution (New York: Harcourt Brace Jovanovich, 1955), 5-14.

⁴Variations in liberalism are noted by Savelle, 24. Richard Hofstadter, Social Darwinism in American Thought, rev. ed. (Boston: Beacon, 1955), 5-12, largely sustains the view that biological rationales in this Darwinian mode of thinking were used to justify concentrated economic power; whereas Merrill D. Peterson, The Jefferson Image in the American Mind (New York: Oxford University Press, 1960), 84-85, describes the emphasis in the Virginian's agrarianism on diffusion of such power. Clarence J. Karier, ed., Shaping the American Educational State: 1900 to the Present (New York: Free Press, 1975), 127-128, avers that Enlightenment rationalism, the belief in the scientific perfectibility of human existence, celebrated the creation through schooling of a meritocratic elite; but from Richard Hofstadter, The American Political Tradition: And the Men Who Made It (1948; rpt., New York: Vintage, 1973), 59-60, one can surmise that Jacksonian rhetoric connoted a contrary reliance on the frontiersman's unschooled common sense. Bowles and Gintis, 8, 28-41, argue that defense of property rights has translated into the economic power of some to make political decisions that quashed the personal claims of others, e.g. of workers to organize for mutual advantage, of farmers to retain their land, and so on. For a view that sees no such essential

conflict within liberalism, but only between liberalism and a feudal past, see Hartz, *passim*.

⁵See Savelle, 24, 46-47, 50. For many, however, the libertarian quest remained an unrealized ideal. Various "outgroups" -- Native Americans, African Americans, and women -- were excluded from it. See Peter N. Carroll and David W. Noble, The Free and the Unfree: A New History of the United States, 2nd ed. (New York: Penguin, 1988).

⁶This conception is in accord with the definition of "liberal democratic capitalist societies" offered in Bowles and Gintis, 5n. The world as a marketplace with Lockian limitations on governmental interference is also discussed in Hartz, ch. 1; and C.B. Macpherson, The Political Theory of Possessive Individualism: Hobbes to Locke (New York: Oxford University Press, Clarendon, 1962).

⁷Hofstadter, American Political Tradition, 131-132.

⁸See Eric Foner, Free Soil, Free Labor, Free Men: The Ideology of the Republican Party Before the Civil War (New York: Oxford University Press, 1970), 31-33.

⁹R. Jeffrey Lustig, Corporate Liberalism: The Origins of Modern American Political Theory, 1890-1920 (Berkeley: University of California Press, 1982), 10-16, explains that while the corporation remained capitalist, that is, grounded in private control of the instruments of social production, it did so as a new form of capital, i.e. as a vast organization of plant, materials, and labor force, which exerted a powerful shaping influence on the wider society. Martin J. Sklar, The Corporate Reconstruction of American Capitalism, 1890-1916: The Market, the Law, and Politics (Cambridge: Cambridge University Press, 1988), 4-5, contrasts the owner-managed, price-taking nature of proprietary capitalist firms with the centralized, functionally differentiated, and oligopolistic or price-making nature of corporate establishments.

¹⁰It might entail corporate command of government, as in James Weinstein, The Corporate Ideal in the Liberal State: 1900-1918 (Boston: Beacon, 1968); the collapse of respective public and corporate structures into a veritable identity, as can be inferred from Joel H. Spring, Education and the Rise of the Corporate State (Boston: Beacon, 1972); the use of specialized interest group bargaining and ameliorative regulatory and welfare measures to ease the adjustment to a corporate order, as summarized in Ellis W. Hawley, "The Discovery and Study of a 'Corporate Liberalism,'" Business History Review 52 (Autumn 1978): 309-320; or varying degrees of positive governmental involvement in the regulation and legitimization of corporate capitalism, as described in Sklar, 19, 34-35. At bottom, it constituted an adaptation of liberalism and the corporation to each other. See Lustig, ch. 1. In this literature, each author takes a different position on the balance of power between corporation, government, and other social

agencies engaged in the construction of that adaptation. The points in the text below draw on insights from all these sources.

¹¹New-Class professionals arose between the traditional propertied middle class and the wage-earning working class. They forged relative autonomy on the basis of their "cultural capital" (credentials acquired from educational institutions) and their professionalism (belief in specialized expertise, meritorious achievement, and social service). See Alvin W. Gouldner, The Future of Intellectuals and the Rise of the New Class (New York: Oxford University Press, 1979), 8-26; but see also views that limit their autonomy short of entitlement to designation as a distinctive "new" class, in Magali Sarfatti Larson, The Rise of Professionalism: A Sociological Analysis (Berkeley: University of California Press, 1977); and Pat Walker, ed., Between Labor and Capital: The Professional-Managerial Class (Boston: South End Press, 1979).

¹²Liberal principles lingered as the basis for "residual" dominant meanings and values. Corporatist principles, on the other hand, grounded "emergent" dominant meanings and values. The continued strength of the former required their absorption into the latter as "residual-incorporated" norms. See Raymond Williams, "Base and Superstructure in Marxist Cultural Theory," New Left Review, no. 82 (November-December 1973): 3-16. The suggestion of corporatist principles, particularly the ascendancy of permanent and indispensable offices or "bureau-crazy" over temporary and dispensable individuals, can be found in Lustig, 11-13.

¹³The theory of democratic pluralism rejects that of corporatism by arguing that predominantly voluntarist, largely equal, and privately autonomous interest groups have stood apart from corporate power and served as a countervailing check on it. But organizations in American society have developed patterns of centralization productive of practical conduct that blurs lines of autonomy between them, rendering unequal influence to large organizations, and fostering top-down decision making that nullifies voluntary control from the bottom-up. How can interest groups counter the corporation if they operate in a manner comparable to it? See Lustig, 21, 26-29.

¹⁴See Carlo M. Cipolla, Clocks and Culture, 1300-1700 (New York: W.W. Norton, 1967), 20-21, 34, 57-60; and Stuart Ewen and Elizabeth Ewen, Channels of Desire: Mass Images and the Shaping of American Consciousness (New York: McGraw-Hill, 1982), 14-16.

¹⁵Note the definition of machine in Donald Stabile, Prophets of Order: The Rise of the New Class, Technocracy and Socialism in America (Boston: South End Press, 1984), 2.

¹⁶The role of the machine image in liberal tradition is indicated in Robert L. Heilbroner, The Worldly Philosophers: The Lives, Times, and Ideas of the Great

Economic Thinkers, 4th ed. (New York: Simon and Schuster, 1972), 51-57, 66-69. On its New-Class usage, see Stabile, 15. The social realization of it depended on an imaginative process similar to that noted by Marx: "At the end of every labour-process, we get a result that already existed in the imagination of the labourer at its commencement." Quoted in Raymond Williams, Marxism and Literature (New York: Oxford University Press, 1977), 59. Images of the not-yet-real can be actualized. In this context, "image" should not be understood in the sense of a "physical likeness" or copy. Nor should it be understood in the popular sense of "perceived reputation" or "public image." Rather, it refers to a mental conception formed in imagination. See Raymond Williams, Keywords: A Vocabulary of Culture and Society (New York: Oxford University Press, 1976), 130-131; and cf. the understanding of images as "subjective knowledge" or beliefs about the world in its various relations, in Kenneth E. Boulding, The Image: Knowledge in Life and Society (Ann Arbor: University of Michigan Press, 1956).

¹⁷Contemplate mechanistic imagining in terms of its implications respecting concentration of decision-making power. "Behind this notion of a totally manageable world, there was an implicit cultural premise. For the world to be apprehended as a well-oiled machine, one must assume that the intricate fabric of daily life itself can be controlled by those who understand its workings" (Ewen and Ewen, 16).

¹⁸This leadership is defined as the presidents of land-grant institutions, deans of agricultural colleges, directors of agricultural experiment stations, and directors of agricultural extension. Following Gladys L. Baker et al., Century of Service: The First One Hundred Years of the United States Department of Agriculture (Washington: USDA, Centennial Committee, 1963), 42-47, 55-56; and Milton Conover, The Office of Experiment Stations: Its History, Activities, and Organization, U.S. Institute for Government Research, Service Monograph no. 32 (Baltimore: Johns Hopkins Press, 1924), it is clear that figures within the Department either directly or indirectly helped shape the policy of the colleges. Therefore, it seemed appropriate to consider them at least as relatives in the entire consociation of college leaders. Further, in keeping with George A. Works and Barton Morgan, The Land-Grant Colleges, Advisory Committee on Education, Staff Study no. 10 (Washington: GPO, 1939), 5-7, a land-grant college or university was one receiving the benefits of the Morrill Act of 1862 and supplementary acts appertaining thereto. An agricultural college must not be confused with the larger land-grant institution within which it formed a department or division; see Edward Danforth Eddy, Jr., Colleges for Our Land and Time: The Land-Grant Idea in American Education (New York: Harper, 1956), chs. 4-5.

¹⁹On "cultural Marxism" as a loose notion for a superstructural emphasis on the determining role of consciousness in history, and on the range of representatives who share this accent, see Richard R. Weiner, Cultural Marxism and Political Sociology (Beverly Hills: Sage, 1981), 17-25.

²⁰In accord with the ideology of the Second International (1889-1914), orthodox Marxism views knowledge and all products of consciousness as a reflex of Marx's forces and social relations of a mode of production (techniques and the socially organized direction of their use and output, which lend to the constitution of the sum of productive relationships that form the economy or material means of a society's existence). Arthur Hirsh, The French New Left: An Intellectual History from Sartre to Gorz (Boston: South End Press, 1981), 7-8, contrasts this position with a Hegel-inspired cultural stance; and Marx's economic ideas are detailed in Eric Hobsbawm, "Marx and History," New Left Review, no. 143 (January-February 1984): 44-46; and Robert L. Heilbroner, Marxism: For and Against (New York: W.W. Norton, 1980), 64-69, 73-76, 85-87. Signifying a cross-fertilization between positivism and empiricism, the designation "positivist/empiricoanalytic" is from Weiner, 29. In general, through emulation of the physical sciences, this mode of thought seeks to find law-like regularities in social life. From this basic deterministic assumption, it proceeds to consider knowledge as politically neutral and limited to the domain of objective facts, and thus, in turn, tries to separate these from values. See Thomas Popkewitz, "Paradigms in Educational Science: Different Meanings and Purpose to Theory," Journal of Education 162 (Winter 1980): 32-35; and Henry Giroux, Ideology, Culture and the Process of Schooling (Philadelphia: Temple University Press, 1981), 117.

²¹From Paulo Freire, Pedagogy of the Oppressed, trans. Myra Bergman Ramos (New York: Seabury Press, 1970), ch. 1, we learn that oppression is a process of systematic injustice produced by dominant apparatuses of power, a process that generates (and primarily evidences itself in) social disharmony through widespread instillment of passive dependent rather than politically active or creative modes of relating. Changing such a system "can be done only by means of the praxis: reflection and action upon the world in order to transform it" (p. 36). On praxis, see Weiner, 17, 93-97; and Martin Jay, The Dialectical Imagination: A History of the Frankfurt School and the Institute of Social Research, 1923-1950 (Boston: Little, Brown, 1973), 4, 42.

²²See Weiner, 18. Emancipation means freedom from oppression as discussed in n. 21 above.

²³Quoted in Carl Boggs, Gramsci's Marxism (London: Pluto Press, 1976), 26.

²⁴The quest for emancipatory knowledge conforms to the purpose raised in nn. 21 and 22 above. A reading of Barry Barnes, Interests and the Growth of Knowledge (London: Routledge and Kegan Paul, 1977), 2, makes it clear that positivist/empiricoanalytic thought accords with the "contemplative account" for knowledge as a passive apprehension of an objective reality that speaks for itself. The position taken in this study accords with the "social" perspective that views knowledge as the fruit of reciprocally influencing relations within which the researcher is embedded.

²⁵If we isolate our subject of inquiry from the wider relationships of domination that condition it, we are unable to understand, and hence unable to break free from that domination. See Heilbroner, Marxism, 44-45, 53; and Giroux, Ideology, Culture and the Process of Schooling, 117, 120.

²⁶Classic expositions of negative thinking are in Herbert Marcuse, Reason and Revolution: Hegel and the Rise of Social Theory (1941; rpt., Boston: Beacon, 1960), 323-329; and Herbert Marcuse, One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society (Boston: Beacon, 1964), chs. 5-7; and for a good discussion of what Marcuse would call positive thinking, see Popkewitz, 35.

²⁷Gramsci was a principal leader of Italian Marxism during the early decades of the twentieth century, and produced much of his writing in the hard environment of Mussolini's prisons. For additional biographical information, see Carl Boggs, The Two Revolutions: Antonio Gramsci and the Dilemmas of Western Marxism (Boston: South End Press, 1984), *passim*; and Boggs, Gramsci's Marxism, *passim*. Neither he nor many of the others cited in this section on theory and method constitute self-described "cultural Marxists." But they share the emphases discussed above, emphases that form one of the major traditions of twentieth-century Marxism. See Robert C. Ulin, Understanding Cultures: Perspectives in Anthropology and Social Theory (Austin: University of Texas Press, 1984), 127-128.

²⁸See Antonio Gramsci, Selections from the Prison Notebooks, ed. and trans. Quinton Hoare and Geoffrey Nowell Smith (New York: International Publishers, 1971), 57. Such consent ranges on a continuum from active to passive assent. See Joseph V. Femia, Gramsci's Political Thought: Hegemony, Consciousness, and the Revolutionary Process (New York: Oxford University Press, 1981), 46-47.

²⁹Boggs, Two Revolutions, 160. In this study, the qualities listed in the text (and others like them, e.g. ideals, images, etc.) are often subsumed under an inclusive sense of normative principles as fundamental cultural assumptions or taken-for-granted mental groundwork. Further, as stressed by Perry Anderson, "The Antinomies of Antonio Gramsci," New Left Review, no. 100 (November 1976-January 1977): 7-44, frequently Gramsci was ambiguous regarding whether hegemony derived from agencies of civil society or from those of the state. As discussed below, however, he tended to view the state not as separate from civil society, but as actively related to it, indeed, as merged with it. Thus hegemony can be understood as a cooperative exercise carried out by both. Interest should be discerned in ordinary economic terms as the pursuit of a paying or profitable advantage. For suggestions to this effect, see Eugene D. Genovese, "On Antonio Gramsci," For a New America: Essays in History and Politics from "Studies on the Left," 1959-1967, eds. James Weinstein and David W. Eakins

(New York: Vintage, 1970), 300-301; and Gramsci, Selections from the Prison Notebooks, 258.

³⁰Culture can be associated respectively with civilized refinement, internal development of a spiritual life, aesthetic expression, the elaboration of "ways of life" characteristic of particular groups, and with the cultivation of crops, animals, and the human mind. See Williams, Keywords, 76-80; and Williams, Marxism and Literature, 13-19.

³¹Stanley Aronowitz, The Crisis in Historical Materialism: Class, Politics and Culture in Marxist Theory (New York: Praeger, 1981), 288, 80.

³²Lynne Lawner, trans. and introduction to Letters from Prison, by Antonio Gramsci (New York: Harper Colophon, 1973), 42, 185-186, discusses the issue of balance and makes it clear that coercion is expressed not only through use of armed force, but also through judicial command. Raymond Murphy, "Power and Autonomy in the Sociology of Education," Theory and Society 11 (March 1982): 183-184, notes that a ruling group wishes to avoid the exercise of force or the "power to command." They are troubled by its "costly procedures" and prefer to rely on the "power to profit from" the action of allies who (through persuasive or non-coercive practices) dominate people on their behalf.

³³Anne Showstack Sassoon, "Hegemony, War of Position and Political Intervention," Approaches to Gramsci, ed. Sassoon (London: Writers and Readers, 1982), 98-102, observes that shifts in the terrain of late nineteenth-century capitalism undermined "traditional sources of investment" and led to dislocation that occasioned mass challenges to capitalist hegemony (p. 100).

³⁴The economy serves less to determine human behavior and more to pressure it by provoking experience that may be incongruous with customary cultural ways of grasping or handling the environment. See E.P. Thompson, The Poverty of Theory and Other Essays (New York: Monthly Review Press, 1978), 8, 164; Williams, Marxism and Literature, 86-87; and Gramsci, Selections from the Prison Notebooks, 184.

³⁵Lawner, 42, discusses the challenge to the rulers; and Giroux, Ideology, Culture and the Process of Schooling, 25, states that hegemony "is a mode of control that has to be fought for constantly in order to be maintained."

³⁶Gramsci alternately prefixed bloc with a variety of other designations -- ideological, social, et al. -- and generally held that, during turbulent historical periods, ruling and subordinate classes could each form their own. The author has elected to focus on the formation of a ruling bloc. See Boggs, Two Revolutions, 227-229; Sassoon, "Hegemony, War of Position and Political Intervention," 108-109, 114; Giuseppe Vacca, "Intellectuals and the Marxist Theory of the State,"

ed. Sassoon, 57; and Luis Razeto Migliaro and Pasquale Misuraca, "The Theory of Modern Bureaucracy," ed. Sassoon, 81.

³⁷Lawner, 42, reminds that this restoration never completely supplants the need to use force.

³⁸On class contradictions and their resolution, see Sassoon, "Hegemony, War of Position and Political Intervention," 111-114; Gramsci, Selections from the Prison Notebooks, 137, 168, 366; and Gramsci, Letters from Prison, 244; and on the distinction between a historical bloc and coalitions of interest groups, see Boggs, Gramsci's Marxism, 81.

³⁹Class can refer respectively to economic groups that are scaled according to something such as income, to status rankings based on relative possession of items signifying social prestige, and, as we shall see below, to economic relationships grounded in differential control of capital. See Williams, Keywords, 52-59, 251-252.

⁴⁰See Karl Marx, Selected Writings in Sociology and Social Philosophy, eds. and trans. T.B. Bottomore and Maximilien Rubel (New York: McGraw-Hill, 1956), 167-202; and see n. 11 above.

⁴¹David Hogan, "Education and Class Formation: The Peculiarities of the Americans," Cultural and Economic Reproduction in Education: Essays on Class, Ideology, and the State, ed. Michael W. Apple (London: Routledge and Kegan Paul, 1982), 36; but one of the actions of rulers is to obscure this awareness among the ruled. For example, rather than allow workers to discover and universalize class purposes that entail construction of an alternative order under their control, established rulers seek to channel them into organizations that pursue specific or narrow interests. The latter aim does not comprehensively challenge the ruling classes for structural control of a society; whereas "distinctive" class organizations could embody such a total intent. Agents of this totalization could embrace the view that satisfaction of their class aims depends on a complete overhaul of society. Rulers would correctly perceive that overhaul as a threat to their control. See Christine Buci-Glucksmann, "Hegemony and Consent: A Political Strategy," ed. Sassoon, 120-121; and from Thompson, Poverty of Theory and Other Essays, 284, it can be inferred that this narrowing is hegemonic if wedded to a cultural process that universalizes it and hence enables it to supersede the use of force.

⁴²On occasion, Gramsci ambiguously related this idea to concepts of "*trasformismo*" and "revolution/restoration." These have the restricted sense of elite attempts to coopt oppositional demands. Passive revolution, on the other hand, has the broader sense of total social reconstruction. See Gramsci, Selections from the Prison Notebooks, 58 n. 8; Boggs, Two Revolutions, 52-53, 176-177; Boggs, Gramsci's Marxism, 50; and Anne Showstack Sassoon, "Passive

Revolution and the Politics of Reform," ed. Sassoon, 131, 134, 143; and for further clarification of Gramsci's use of the idea, see Hoare and Smith, introduction to "Notes on Italian History," Selections from the Prison Notebooks, by Gramsci, 46.

⁴³Here radical refers to a root social reconstruction that may be conducted either popularly from the bottom-up, or unpopularity from the top-down. That is, it may or may not derive from popular initiative.

⁴⁴The strategy and purpose of such containment are discussed in Sassoon, "Passive Revolution and the Politics of Reform," 129-130, 133-134, 140; and see n. 41 above.

⁴⁵Apparently, following Migliaro and Misuraca, 74, Gramsci had in mind the wide extension of an official presence that could secure passive popular compliance with central directives -- a process of "structuring and stabilizing relations between the leaders and the led" [emphasis in original].

⁴⁶Williams, Keywords, 243, 245, notes the seventeenth-century legacy of severing "society" (a voluntary association) from "state" (an organized apparatus of coercive power or government); but Migliaro and Misuraca, 72-73, explain Gramsci's view of the latter: In its various administrative, knowledge-production, and other capacities, the state interacts with private society as "the organization of relations between leaders and led" (p. 73). It is clear, then, following Sassoon, "Hegemony, War of Position and Political Intervention," 101, 115 n. 6, that Gramsci merges the institutional activity of society and state, and does not consign the latter to a role as purveyor of coercion. For further confirmation of this point, see Paul Piccone, "Gramsci's Marxism: Beyond Lenin and Togliatti," Theory and Society 4 (Winter 1976): 506; and n. 29 above.

⁴⁷See n. 45 above; and Migliaro and Misuraca, 76.

⁴⁸Gramsci, Selections from the Prison Notebooks, 247. Again, to avoid misunderstanding, Gramsci means that state education embodies a plan to adapt the populace to the new terrain or stage of material development of "the apparatus of economic production." Further, here education signifies more than schooling. It does no violence to Gramsci's reading of the former if we view it, in Lawrence Cremin's inclusively loose but still useful terms, as "the deliberate, systematic, and sustained effort to transmit, evoke or acquire knowledge, attitudes, values, skills or sensibilities, as well as any outcome of that effort." Not only schools, but all social agencies can participate in this process. Quoted in J. Christopher Eisele, "Defining Education: A Problem for Educational History," Educational Theory 30 (Winter 1980): 26.

⁴⁹Perhaps all the above commentary on passive revolution can be summarized in the following statements: "Gramsci uses the term passive revolution to

indicate the constant reorganization of state power and its relationship to society to preserve control by the few over the many." As such, it connotes the authorship "of various reforms and in varying degrees the expansion of an element of planning in the economy on the basis of a passive relationship between the mass of the population and the state." This passivity allows for elite-instigation of "substantial changes" throughout social life. Sassoon, "Passive Revolution and the Politics of Reform," 129.

⁵⁰On Gramsci's understanding of politics, see Eric J. Hobsbawm, "Gramsci and Marxist Political Theory," ed. Sassoon, 22-23; Boggs, Gramsci's Marxism, 105; and it is well to remember the dictum in Gramsci, Selections from the Prison Notebooks, 144, which asserts "the first element [of politics] is that there really do exist rulers and ruled, leaders and led. The entire science and art of politics are based on this primordial, and . . . irreducible fact."

⁵¹Thompson's understanding of historical method is in Poverty of Theory and Other Essays, 37-50; and he is known foremost for his classic study, The Making of the English Working Class (New York: Pantheon, 1963). Weiner, 18-19, 21, gives him a prominent place in cultural Marxist tradition.

⁵²Thompson, Poverty of Theory and Other Essays, 39.

⁵³From *ibid.*, 27-50, it is clear that Thompson views facts primarily as human products which, in their creation, are infused with human intentions that are shaped by class relationships. Thus the scholar cannot stand inert before factual particulars, cannot assume that they derive from some source of objectivity or extra-human power of authorship, but, instead, must be conceptually active and interrogate them for the relational reasons that prompted their existence in the first place.

⁵⁴In *ibid.*, 10, 32-49, Thompson is willing to concede that in the past certain things happened. These cannot be conceptually wished away and made to say whatever the researcher wants. They require empirical engagement. But this is different from being an empiricist. That is, facts are immediately given to the senses, but the class relationships that conditioned their emergence are not. Therefore, it is incorrect to rely on immediate sense perception for the acquisition of all knowledge.

⁵⁵For example, a range of theorists were considered before Gramsci was given center stage; and, notable, the various meanings of ideology were discarded in favor of using a concept of culture. On the study's documentary materials, see n. 57 below.

⁵⁶Robert Jones Shafer, ed., A Guide to Historical Method, 3rd ed. (Homewood: Dorsey, 1980), chs. 6-7, pp. 128-129, notes that the appropriateness of the "external" and "internal" labeling of these methods is disputed by

historians. The referents of the labels, however, are widely accepted. Historians seldom need to engage in external criticism (the public documents in this dissertation, for example, posed no difficulty of authentication). But internal criticism usually requires much effort. One must grasp the meaning of words in their historical and documentary context; determine which contemporary witnesses were in a position to offer credible accounts of events under investigation; and ascertain the biases, intentions, and audience influences that likely shaped the contemporary reporting. On his consistency with these methods, see Thompson, Poverty of Theory and Other Essays, 29.

⁵⁷The bibliographical note at the end of this dissertation contains an evaluation of contemporary and secondary documents on the land-grant agricultural colleges. The author secured most of the study's primary material through searches of the archives in the libraries of Montana State University and the University of Montana.

⁵⁸If the researcher is not frank in this regard, his or her commitment will be at work behind the back. See Shafer, 179.

⁵⁹Thompson, Poverty of Theory and Other Essays, 42.

⁶⁰*Ibid.*, 41-42.

⁶¹*Ibid.*, 49, 48.

⁶²The author focused specifically on the agricultural colleges because of the priority placed on agriculture by the Association of American Agricultural Colleges and Experiment Stations. The Association was the principal professional gathering wherein land-grant policy was formed. Its emphasis on agriculture was evident in its name, its internal organization, presidential addresses, and committee reports. See Lawrence Robert Mann, "The National Association of State Universities and Land-Grant Colleges: A Political Interest Group and Its Congressional Relations, 1887-1958" (Ph.D. diss., University of Illinois, 1979), 66-67; and on other matters pertaining to the leadership, see n. 18 above.

⁶³The author tried to minimize references to a monolithic class of "farmers." Most of them did not belong to farm organizations. These unorganized farmers, whether landed owners or landless tenants, are referred to as a mass of farming people. Since they either did not own their farms or did the predominant share of their farm labor, they must be viewed as ambiguously located between the traditional middle and working classes. In contrast, the author adverts to organized farmers of the middle class as the fewer number who had an interest in running their farms as any proprietor would a business. These were closely associated with the bankers, merchants, implement manufacturers, and other businessmen who had a vested interest in agriculture. They could readily be found in the National Grange of the Patrons of Husbandry, in rejuvenated

cooperatives, after 1910 in the emerging farm bureaus, and in various general and special associations. They should not be confused with those in radical Populist or neoPopulist farm organizations. The latter challenged the power of businessmen. For a good discussion of farming people and the relative size and composition of various farm organizations, see David B. Dansom, The Resisted Revolution: Urban America and the Industrialization of Agriculture, 1900-1930 (Ames: Iowa State University Press, 1979), ch. 1; Robert L. Tontz, "Memberships of General Farmers' Organizations, United States, 1874-1960," Agricultural History 38 (July 1964): 143-156; and Lowell K. Dyson, Farmers' Organizations (New York: Greenwood, 1986), 14-15, 57-59, 243-244. A lucid treatment of the difficulty grasping the relationship of different farming strata (e.g. tenants, "small" and "large" landowners, etc.) to each other is presented in James Green, "Populism, Socialism and the Promise of Democracy," Radical History Review, no. 24 (Fall 1980): 7-40, particularly 26-29; and though his general inclusion of farmers (Grangers, Populists, etc.) under the umbrella of "agricultural" and "farm businessmen" is problematic, still to be recommended for its insight into agricultural class structure is William Appleman Williams, The Roots of the Modern American Empire: A Study of the Growth and Shaping of Social Consciousness in a Marketplace Society (New York: Random House, 1969).

⁶⁴The word democracy has a complicated history, but it has more or less landed on two major emphases. One stems from the liberal tradition and equates democracy with the practice of representative electoral government, the exercise of freedom of speech, and the like. The other stems from a radical populism and equates it with the popular capacity of the majority of people to determine their own destiny. The former emphasis is concerned foremost with a particular mode of government and with formal guarantees of rights. The latter is concerned with advancing equality throughout every sector of a society, i.e. with socializing it. See Williams, Keywords, 82-87. From Hartz, 75-76, 111-112, we learn that in America the liberal tradition has been fluid enough to alternately express itself in both; and Earle D. Ross, Democracy's College: The Land-Grant Movement in the Formative Stage (Ames: Iowa State College Press, 1942), argues that in the nineteenth century the land-grant colleges were a democratic expression of the Jeffersonian belief in equal educational opportunity. Given the dominance of a liberal society throughout much of that century, his argument is consistent with American political trajectory in the 1800s. Finally, the author favors the second of the above emphases and finds it eloquently presented in the treatment of farmers' Populism in Lawrence Goodwyn, Democratic Promise: The Populist Moment in America (New York: Oxford University Press, 1976).

⁶⁵On the difficulty performing the wedding, see Thompson, Poverty of Theory and Other Essays, 84.

⁶⁶On the nature of organized farmers and their difference from the mass of farming people, see n. 63 above.

⁶⁷On these principles and the New-Class belief in them, see n. 11 above.

⁶⁸On the meaning of democracy, see n. 64 above.

⁶⁹The conventional assumption that the land-grant institutions were forces for the egalitarian empowerment of all classes of Americans is described in Peter Hopkins Fitzgerald, "Democracy, Utility, and Two Land-Grant Colleges in the Nineteenth Century: The Rhetoric and the Reality of Reform" (Ph.D. diss., Stanford University, 1972), 1-34; and for a leading example of its employment, see Ross. Further, this study's far-ranging discussion of liberalism provided only a context for specifically testing land-grant democracy. For an important tenet of this democracy, see n. 64 above. Finally, as we can infer from the presentation of the provisions of the Morrill Act contained in Chapter 2, the agricultural colleges can be taken as representative of the larger land-grant institutions.

⁷⁰On such involvement in decision making, see the above discussion of Bowles and Gintis in the section on the general theme of the study. The significance of agricultural choices may be more clearly grasped by observing the mention of agriculture in n. 72 below.

⁷¹William G. Scott and David K. Hart, Organizational America (Boston: Houghton Mifflin, 1979), particularly 43-48, 207-214, describe this imperative in terms of a "totalitarian trend" toward such aggrandizement; and their work may be traced to the legacy of scholarship handed down by David Riesman et al., The Lonely Crowd (Garden City: Anchor, 1953); and William H. Whyte, Jr., The Organization Man (New York: Simon and Schuster, 1956). The imperative may be viewed as a transformative outcome of twentieth-century American history (Thompson's "praxis of eventuation") that invited the author to query for some of its possible antecedents. Moreover, the second corporatist principle -- priority of office over individual -- would seem to corroborate the thesis that the imperative exists. For further discussion of this and other matters of eventuation, see Chapter 5 below.

⁷²Willard W. Cochrane, The Development of American Agriculture: A Historical Analysis (Minneapolis: University of Minnesota Press, 1979), 105-107, 252-257, explains that, in conjunction with those of the United States Department of Agriculture, from 1897 to 1933, and formatively from 1897 to 1914, collegiate efforts helped to advance technological developments that streamlined agriculture as a system for the production, processing, marketing, and distribution of supplies that sustained an industrial society; and Eddy, ch. 5, notes that in the early years of the century the tripartite form and knowledgeable substance of collegiate contributions to agriculture were solidified.

⁷³For a polemic that maintains this control is in jeopardy, see Brett Silverstein, Fed Up: The Food Forces that Make You Fat, Sick and Poor (Boston: South End Press, 1984).

⁷⁴The celebration stems from acceptance of the conventional assumption mentioned in n. 69 above. See also the bibliographical note below. Fitzgerald, chs. 3-6, departs from convention by arguing that access to land-grant education did not always attain to announced ideals of openness; as does Grant McConnell, The Decline of Agrarian Democracy (Berkeley: University of California Press, 1953), ch. 5, by arguing that their role in establishing the farm bureaus turned college leaders away from the democratic heritage of agrarian tradition; and as do some of the essays in Lawrence Busch, ed., Science and Agricultural Development (Totowa: Allanheld, Osmun, 1981), by arguing that their support for capitalism implicated college leaders in the preferential treatment of select few farmers. But other departures essentially constitute critiques of the post-World War II development of the colleges. On these critical works, see Chapter 5 below.

⁷⁵On criticism as used in this study, see the above section on the critical departure of cultural Marxism.

⁷⁶For a skeptical appraisal of the rise of a general radicalism (read: not necessarily Marxist) in the history of education, see Diane Ravitch, The Revisionists Revised: A Critique of the Radical Attack on the Schools (New York: Basic Books, 1978); but for a favorable appraisal, see Walter Feinberg et al., Revisionists Respond to Ravitch (Washington: National Academy of Education, 1980). In the sociology of education the particular themes of cultural Marxist radicalism are taken up by Michael W. Apple, "Reproduction and Contradiction in Education: An Introduction," ed. Apple, 1-31; Michael W. Apple, Education and Power: Reproduction and Contradiction in Education (London: Routledge and Kegan Paul, 1982); and for a good overview of the many works that address these themes, see Henry A. Giroux, "Theories of Reproduction and Resistance in the New Sociology of Education: A Critical Analysis," Harvard Educational Review 53 (August 1983): 257-293. In American history the influence of Gramsci is evident in Eugene D. Genovese, Roll, Jordan, Roll: The World the Slaves Made (New York: Vintage, 1974); T.J. Jackson Lears, No Place of Grace: Antimodernism and the Transformation of American Culture, 1880-1920 (New York: Pantheon, 1981); and Robert W. Rydell, All the World's a Fair: Visions of Empire at American International Expositions, 1876-1916 (Chicago: University of Chicago Press, 1984); and, his protestations against socialism to the contrary, the influence of Thompson is clearly operating in Goodwyn.

⁷⁷The reason for focusing on agriculture is stated in n. 62 above.

⁷⁸On these documents, see n. 57 above.

CHAPTER 2

THE NINETEENTH-CENTURY CONTEXT FOR THE TURN OF THE AGRICULTURAL COLLEGES TOWARD CENTRALIZATION OF AUTHORITY

The Rupture of Liberal Society in the 1890s

During the nineteenth century numerous agencies propagated the social dominance of liberal principles. The antebellum Republican Party promised that industrialization would, in the words of one spokesman, advance manufacturing and commerce as "missionaries of freedom."¹ A growing economy would, in the Party's view, ensure material progress and equality of opportunity in a society on the move, where mobility was such that the worker of one day would become the capitalist of the next.² Echoing the Party, after the Civil War a triumphant Northern middle class employed a burgeoning array of newspapers, churches, schools, and voluntary associations, to persuade laborers that rising to become independent entrepreneurs and landed farmers was assured for those who observed the Protestant ethic. Middle-class exponents hinged such advancement on individual responsibility. They grounded it in the development of "character" as manifested in the virtues of industry, perseverance, frugality, thrift, sobriety, punctuality, honesty, and initiative. Of course, one could find the

upward path beset with hardship. But the morality of the work ethic offered the Franklinitan hope that all might, like Horatio Alger, join those who had Risen from the Ranks (1874).³

When, in the 1850s, he proclaimed, "there is no permanent class of hired laborers among us," Abraham Lincoln affirmed the liberal assumptions.

The prudent, penniless beginner in the world labors for wages awhile, saves a surplus with which to buy tools or land for himself, then labors on his own account another while, and at length hires another new beginner to help him. . . . If any continue through life in the condition of the hired laborer; it is not the fault of the system, but because of either a dependent nature which prefers it, or improvidence, folly, or singular misfortune.⁴

Here was a vision in which class divisions were a nullity. For many had "made it," and there was the promise that many more would do the same. If access to the middle class was open, then all classes could relate harmoniously as they pursued opportunity.⁵ Preoccupations with classlessness were shared, moreover, by agrarian liberals who beheld the fee-simple, 160-acre provisions of the Homestead Act of 1862 as a ratification of desires for wide diffusion of income-earning property. Farming people would thence seek lives as independent yeomen.⁶

A related and natural consequence of these aspirations for opportunity was the egalitarian idea that dignified labor by designating those who performed it as "producing classes" (including worthy farmers, mechanics, and small entrepreneurs). Idle "speculators" and their kin among bankers and lawyers were scorned for profiting from the honest pursuits of the producers.⁷ Inventors, on the other hand, were exalted for uniting useful knowledge with productive power

to liberate Americans from constraints on self-development. Widespread prosperity promised to follow inventions and secure a suffusion of comforts that overmatched older fears of luxury and its resultant moral decay.⁸

Middle-class ideals also relied on John Locke's normative dictum that explicitly limited the power of government, allowing for the free interplay of individuals in a state of nature. Largely forgotten, however, was Locke's attendant point that a liberal society, freed from feudal ties, required government as the only remaining source of legitimate coercion. However, Americans could direct their attention to an expanding frontier, a natural setting where surely the Lockian standard could be realized. What need, then, of governmental intervention?⁹

In sum, the ideal of a producer democracy was championed, befitting the nineteenth-century "producer culture" noted by one historian.¹⁰ Such a democracy could prosper in an entrepreneurial society where producers (virtually everyone) controlled capital and traded in goods and services with other producers. Without a market in wage-labor, a rough equality would follow.¹¹ Americans further learned that the ultimate meaning of their democracy resided in its individualist nature. Late in the century, educator William T. Harris of St. Louis sympathized with middle-class individualism and gave voice to it.

Education should excite in the most ready way the powers of the pupil to self-activity. Not what the teacher does for him, but what he is made to do for himself, is of value. Although this lies at the bottom of other national ideas, it is not so explicitly recognized as in our own. It is in an embryonic state in those; in ours it has unfolded and realized itself so that we are everywhere and always impelled by it to throw responsibility on the individual. . . . It is the faith of

Americans that they will be able to accomplish all that any other civilization can do, besides adding thereto a culture in free individuality to an extent hitherto unattained.¹²

The nineteenth century provided considerable economic experience in which liberal ideals received some verification. Prior to the Civil War, individuals or small partnerships commonly owned manufacturing establishments. Northern firms hired an average of 10 workers. Landowning farmers in the North were double the number of tenants and farm laborers. Such an economic landscape partially validated the producer democracy ideal. Even after the War, opportunity abounded for "the Go-Getters." Foremost among them were the self-made industrialists who seemed, in their attainment of wealth, to demonstrate that with sufficient character and heroic risk-taking, anyone could join their ranks.¹³ Broadcast in schools, newspapers, and during Sunday worship was the message epitomized in the words of one self-help advocate: "We want the histories of our self-made men spread out before us, that we may know the ways by which they came up from the ranks of the people."¹⁴ The rags-to-riches message retained plausibility in an environment where railroad tracks were freshly laid, land newly settled, and factories initially built.¹⁵

Government itself was a vehicle for getting ahead. Decentralization of authority prevailed due to passionate local partisanship. This rendered coherent national policy impossible as federal appropriations became the target of whoever could grab them first. Once grabbed, they were assigned a local purpose. There was little in the way of a federal administrative apparatus to regulate their use, or the use of public lands, or the use of much of anything else.¹⁶

After its initial stages of development, however, industrialization gradually received form that eroded the verification of liberal ideals in people's daily economic experience. Following 1867, excepting depression years, more than 2,000 miles of railroad track advanced annually. Paired with achievements in telegraphy (and later with the telephone), the conduct of business sped and broadened. An integrated national market began to take shape. Factories expanded to accommodate increased sales. The Baldwin locomotive works exemplified the expansion as it grew from 600 workers in the mid 1850s to 3,000 two decades later. The discipline of the factory clock disintegrated the more relaxed pace of older shops.

In agriculture, the final third of the century witnessed developments in canning and refrigeration that enabled perishable products to be carried beyond local markets. In the Midwest, mid-century achievements of new techniques and machinery of farm production attained wider use and raised the stakes of competitive success. With the pressure to purchase the new equipment suited to each farm enterprise, the traditional maintenance of mixed activities, the basis of the self-sufficient union of home production and consumption, became too costly for many. Specialization accelerated, as did a commercial interdependence that lent to the travail of those farmers struggling with rising tenancy, indebtedness, and other factors eroding independence. In general, Americans witnessed decreasing access to capital among tenants and a growing class of workers who were not as temporary as Lincoln had assumed.¹⁷

At the same time, business leaders gained greater control of capital. Jacksonian temper notwithstanding, earlier in the century state legislatures were quick to establish "general incorporation laws." For a nominal cost of registration and a willingness to follow easy rules, these laws allowed businessmen rapidly to expedite the formation of corporations. By the 1870s and 1880s experiments in "vertical" and "horizontal integration" expanded the scope of corporate activity. The former obtained control backward to the source of raw materials and forward through distribution of finished products. The latter set prices in a particular industry, first, through informal cartels and, later, through trusts and holding companies (the last denoted the formation of corporations into larger corporations, a practice without sanction under the earlier general incorporation laws). Effected essentially to stabilize prices and restrain "ruinous" competition, these experiments met with varying degrees of success.

Small-scale competitors apprehended them as a threat to the opportunity-based ideal of "each man his own boss."¹⁸ For example, traveling salesmen increasingly found themselves transformed into employees of corporations integrating into marketing. In retrospective observations made around the turn of the century, P.E. Dowe, a representative of one of the travelers' associations, spoke of his apprehension. "This history of this country," he ventured,

gives examples of poor boys who became great men, beginning at splitting rails, tanning hides, driving canal horses, etc., and we all know personally some illustration of self-made men; we have listened to the stories of father and grandsire, telling the younger generation of early struggles, and many instances have been cited where a few hundred or a few thousand dollars started them upon a career to fame and fortune. Trusts have come, however, as a curse

for this generation and a barrier to individual enterprise. What will be the prospects for our children? God-Almighty alone knows.¹⁹

Dowe echoed the earlier sentiments of Israel Washburn, a prominent antebellum Republican from Maine, who feared "that the money-power will be too much centralized -- that the lands and property of the country, in the course of time may come to be held or controlled by a comparatively small number of people."²⁰

Even as corporations posed this threat to opportunity, they also appeared to undermine character. Honesty, for example, confronted what Chicago journalist, Henry Demarest Lloyd, noted in 1881: "The Standard has done everything with the Pennsylvania legislature, except refine it."²¹ Indeed, Standard Oil's reported use of bribery to get Pennsylvania legislators to secure its effective monopoly over that state's pipelines was only a salient instance of widespread corporate practice.²²

By the 1890s economic experience and liberal ideals diverged more than they had in the past. The Sherman Antitrust Act of 1890 represented an attempt to preserve the latter, but in the name of another menace to liberalism: stronger regulation by national government.²³ The frontier's value for agrarian liberals, with its perpetual offer of "free land," met with Frederick Jackson Turner's announcement that "at the end of a hundred years of life under the Constitution, the frontier has gone, and with its going has closed the first period of American history." In Turner's view, this was the period during which the frontier produced a "dominant individualism," the foundation of democracy.²⁴ Further, although liberal ideals took the correctness of the principle of unlimited production and

economic growth for granted (as the underpinning of progress), the depression of 1893 resulted ironically from fruition of that assumption: "overproduction." Markets could not consume at the level necessary for profit. As a result, 642 banks and 16,000 other businesses failed. Out of a work force of 15 million, three million lost their jobs. Farm prices sunk to new lows in a 30-year pattern of decline. Wheat dropped from \$2.06 per bushel in 1866 to \$.95 in 1874 to \$.49 in 1894; corn declined from \$.66 in 1866 to \$.31 in 1878 to \$.21 in 1896.²⁵

As economic decline frustrated middle-class aspirations, farming people began to protest. In 1890 the *Farmers' Alliance* of Lincoln, Nebraska, articulated their grievance: "The great middle class, including the farmer, is gradually being undermined and destroyed."²⁶ Mass uprisings challenged corporate power. Emerging in 1890, the Populist Party drew on its roots in the National Farmers' Alliance and Industrial Union. The Alliance attempted to radicalize cooperative buying and selling by giving them a mass foundation.²⁷ Initiated at the grass roots, the Alliance claimed by the late 1880s more than 3,000 suballiances which reached into remote farming neighborhoods, particularly in Southern and Plains states.²⁸ Neither the Alliance nor its Populist offspring ever organized the majority of farming people. But other contemporary farmers' organizations attracted far fewer adherents.²⁹

Following the Populist national convention in St. Louis in 1892, a nominating convention that same year launched the Omaha Platform. Included in its comprehensive approach to the reform of American society were planks calling for government ownership of railroads, elimination of corporate land "speculation,"

and release from a financial system controlled by bankers.³⁰ The Platform aimed for an equitable distribution of resources in a "cooperative commonwealth."³¹ This goal rested on the premise of "antimonopoly," the "principle," said Populist, F.J. Ripley of Georgia, "that wealth belongs to him who creates it, rather than to those who by chicanery, legislation and fortuitous circumstances manage to get possession of it."³² As such ideas found expression in the electoral successes of Populism, corporate leaders grew nervous.³³

The Party's press explained that Populists intended to protect those who were or those who aspired to be among "the great and noble middle farming and laboring class." This class represented "the bone and sinew of the country," the guarantor of stable government and "the bulwark of any social system."³⁴ Populists upheld a Jeffersonian-Jacksonian regard for the moral primacy of the producers and feared that that pre-eminence was endangered by America's increasingly stratified division between haves and have-nots.³⁵ Hence, the Omaha Platform, fashioned as a "Second Declaration of Independence," voiced the egalitarian current long embedded in liberal republican tradition.³⁶ Meanwhile, other farm organizations of the middle class and corporate apologists turned liberalism toward Social Darwinian, self-help and "cult-of-success" defenses of inequality.³⁷ To the Populist Governor of Kansas, Lorenzo D. Lewelling, Social Darwinism produced "not the survival of the fittest, but the survival of the strongest."³⁸ Others in the Party wondered about the sufficiency of individualistic self-help on an economic landscape where, as one "People's"

newspaper put it, "the corporation has absorbed the community."³⁹ Countering this absorption surely required comprehensive social transformation.

The Populists were torn between their own liberal inheritance and the implications of reforms they advanced for meeting conditions of the emerging corporate economy. On the one hand, in keeping with the former's regard for the autonomous freedom of private enterprise and with Lockian-Jeffersonian principles of limited government, many in the Party feared the interventionism of the Omaha Platform and its overtones of Socialism. On the other hand, opposition from bankers and other businessmen had contributed to the failure of the purely business ventures of Alliance cooperatives. Populists, therefore, frequently concluded that only the active government of the Platform could accomplish the initial aims of the Alliance. Ensuing division within the Party undermined united action; by 1896 Populists were vulnerable to pressure to fuse with Democrats. But fusion eroded the comprehensive challenge of the Omaha Platform by redirecting Populist attention to the single issue of the free coinage of silver. The failure of that issue to catapult Democrats to victory in the presidential election of 1896 afforded a major reason for the subsequent decline of Populist fortunes.⁴⁰

Nonetheless, Populism left a lasting legacy as "an experiment in adult education" which, through its indigenous press, lecturers, and other means, taught masses of farming people to affirm a distributive justice that equally apportioned the money, property, and power that would enable them to take the initiative in determining their own destiny.⁴¹ Populism was an experiment in

democracy. Populist editors, moreover, provided a critical education that explored how the new relations of a corporate society rendered the tradition of self-help problematic. They were joined by Georgia's Tom Watson, one of the Party's most influential leaders, who explained that "day by day, the power of the individual sinks [while] day by day, the power of the classes, of the corporations, rises."⁴² Such teaching resonated with farming people who experienced a threat to their middle-class aspirations. As one letter to Populist leader, Ignatius Donnelly, in January 1891 stated:

I settled on this land in good Faith Built House and Barn
Broken up Part of the Land. Spent years of hard Labor in
grubing fencing and Improving are they going to drive us
out like trespassers wife and children and give us away to
the Corporations how can we support them. When we are
robed of our means.⁴³

Meanwhile, urban workers found the post-Civil War decades marked by their descent into a permanent position as wage-laborers. This station, as E.L. Godkin of the *Nation* had warned, made the worker "a person who has surrendered a certain portion of his social independence, who has become dependent . . . 'for his bread and butter,' on another person's approval."⁴⁴ Being "dependent" during the 1890s meant being vulnerable to unsafe working conditions. In 1893, for example, one of every 10 railroad employee operators was injured, and one of every 115 died on the job. Annually, throughout the decade, Pennsylvania miners suffered one injury for every 150 workers.⁴⁵ When such conditions combined with depression, laborers confronted a widening discrepancy between the liberal promise of individual independence and their actual industrial experiences. The disparity had already been identified by the *National Labor*

Tribune on the eve of the great railroad strikes of 1877: "In America we have realized the ideal of republican government at least in form." Beyond mere "form," however, this "ideal" summoned Americans to fulfill the desire to be "their own rulers." Yet, "These dreams have not been realized. . . . The working people of this country . . . suddenly find capital as rigid as an absolute monarchy."⁴⁶

As the distance between promise and experience increased, so did the number of strikes. Strikes involved 129,521 participants in 1881 and 499,489 in 1886. By 1894 an unparalleled 750,000 laborers protested through refusal to work. Two uprisings, in particular, exemplified the tumult of the 1890s. In 1892 at Homestead, Pennsylvania, strikers engaged in armed struggle with Pinkertons hired by the Carnegie Steel Company. And in 1894, led by Eugene V. Debs's American Railway Union, a strike against the Pullman Palace Car Company at Pullman, Illinois, quickly spread across the nation as other workers joined in a boycott of railroads using Pullman cars. By mid-summer of that year thousands of tons of freight ceased to move.⁴⁷ To the *New York Times* the boycott featured "the greatest battle between labor and capital that has ever been inaugurated in the United States."⁴⁸ Working people comprehended a salient fact of the decade: Increasingly they could no longer "make it."

An expanding breach opened between the ideal and the reality in America. Business leaders were caught in the gap. Among them, in the words of one of their company, select industrialists had achieved fame as "daring men."⁴⁹ They rose to leadership as the embodiment of the practical knowhow that had "tamed"

a continent. Reputedly, their Alger heroics turned that practicality not only into wealth for themselves, but into material progress and opportunity for all. A growing mass perception, however, now viewed them as corporate "plutocrats" who stole success from others.⁵⁰ Their leadership faltered. Meanwhile, the uprisings of the decade stimulated fears among many in the middle class that the nation was on the brink of social revolution and, while their fears may have been unrealistic, the possibility of revolution stirred popular imagination.⁵¹

During the Pullman boycott, President Grover Cleveland's Attorney General, Richard Olney, offered his interpretation of the new contingencies: "We have been brought to the ragged edge of anarchy and it is time to see whether the law is sufficiently strong to prevent this condition of affairs."⁵² Strength of "law," as Olney confided on another occasion, meant responding to the situation in Pullman with "a force which is overwhelming."⁵³ Disregarding the penchant of late nineteenth-century Presidents to stay on the sidelines of governmental operation (excepting exercise of their veto power), and over the objections of Governor John Altgeld of Illinois, Cleveland supported his Attorney General by sending federal troops to help break the strike. Numerous other strikes drew a similar government response.⁵⁴

With liberal society on "the ragged edge of anarchy," could any of its assumptions be truthfully related to reality? Could they any longer serve as a basis for order? Observing the violence that amounted to a negative answer, Americans might well have shared a sentiment expressed by President Rutherford Hayes in 1877. After his grudging use of troops to quash the railroad

strikes of that year, he lamented the insufficiency of force as a lasting solution for the nation's disarray. He did not consider it a "real remedy."⁵⁵

The New Class and an Expanding Administrative State

Between business leaders and their contestants among farmers and workers, a New Class rose. After 1895 such groups as engineers, government administrators, corporate managers, and academic professors found their employment opportunities waxing as their occupations became more important to an industrializing society. By 1900 they totaled a population of more than 175,000. Although still only a small fraction of the some 76 million Americans, they grew at a faster rate than proprietors, manufacturers, and other groups within the traditional middle class. They also outstripped them in knowledge of the inner workings of an increasingly complex technological society.⁵⁶ At one point, Andrew Carnegie referred to the special understanding that was necessary to manage and develop new techniques for the process of corporate production, conceding that "I am neither mechanic nor engineer, nor am I scientific. The fact is I don't amount to anything in any industrial department."⁵⁷ But New-Class personnel did and this gave them influence out of proportion to their numerical strength.

The unity which the heterogenous New Class possessed resided in their common acceptance of the principles and practices of "professionalism." On the one hand, this commonality was a tenuous basis for unity. For many sought to dignify their occupations with the label "profession." Such effort signified the

desire to attach to their work the status long attributed to the classical professions of the traditional gentry. Successful claims of this nature lent legitimacy to a group's interest in regulating the quantity of its practitioners, thus helping to boost their income and prestige. Privileged status, in other words, could be used as a defense against the competitive vicissitudes of nineteenth-century labor markets. But with numerous groups seeking its associated privilege, by the turn of the century "professionalism" acquired a slogan-like quality that obscured important distinctions between, say, professional academicians and professional nurses.⁵⁸ Depending on the criteria used to establish a profession, the most unlikely bedfellows could claim comparable rank.⁵⁹ Thus the unity of the New Class was elastic.

On the other hand, elasticity did not preclude a shared understanding that professionalism entailed a basic occupational preparation. The prospective professional reckoned on mastering a corpus of systematically organized knowledge acquired during advanced training at a degree or license-granting educational institution. This process of "professionalization" imbued the upstart both with a keen appreciation for the uniqueness of functional skills obtained from training and with regard for the principles upon which their practice rested.⁶⁰

Professionalization presumed three important principles. First, action must be grounded in specialized expertise. During the 1870s and 1880s this principle had already been solidified through the proliferation of some 200 associations organized to further particular fields of interest.⁶¹ Note, for example, the offspring

of the American Association for the Advancement of Science as outlined in Table 1:

Table 1. Offspring of the American Association for the Advancement of Science.⁶²

Year	Offspring Organizations
1876	American Chemical Society
1880	American Society of Chemical Engineers
1882	American Forestry Association
1883	American Ornithologists' Union
1883	American Society of Naturalists
1884	American Climatological Society
1885	American Institute of Electrical Engineers
1888	Geological Society of America
1888	National Statistical Association
1888	American Mathematical Society
1889	American Physical Society

So prevalent had the principle become that one medical professional worried, "There is now danger lest, all being specialists, none shall be general practitioners."⁶³

Second, expertise was attained on the basis of meritorious achievement. The Bar examination, the medical boards, and other tests and features of training, sifted for those competent to undertake a "career." This undertaking marked, in the words of the 1893 edition of the *Funk and Wagnalls Dictionary*, "a complete course . . . abounding in remarkable actions or incidents," which was

tantamount to a "professional life or employment, that offers advancement or honor."⁶⁴ Professionalization assumed that the best life was the one that proceeded in a sequential ascent to the highest accomplishment in school, and thence to comparable feats in a subsequent occupation.

A third key principle held that the practitioner's climb to the pinnacle of competence joined with the most esteemed of ideals -- service to a clientele. Irrespective of personal self-interest or partisan causes, the professional's neutral application of expert knowledge boded well for all. "Civilization," spoke Daniel Coit Gilman of Johns Hopkins, in parlance common to the New Class, required such service in order to ensure the "highest welfare of mankind."⁶⁵

Specialized expertise, meritorious achievement, and social service -- these implied a distinctive idiom and source of authority for the New Class. The expert's speech was impersonal, anchored in a quest for invariable general rules that governed practice in all situations. Others might rely on experience in piecing together a common-sense understanding of their immediate surroundings, but the professional, in the search for universal standards, countered with an unremitting examination of everything experiential. Professionalism, then, celebrated a cosmopolitan disregard for the localist assumptions of traditional liberalism. The inclusion of "National" or "American" in the name of associations evidenced the departure from localism.⁶⁶

The rising importance of science furnished authoritative justification for the fresh course. Social convulsions of the nineteenth century, according to New-Class reasoning, exposed the inadequacy of sectional and common-sense

methods of organization. As early as 1869, President William Folwell of the University of Minnesota had declared, "We are building our great national fabric according to the rule of thumb." Too many were "mere empirics and journeymen at handling the terrible social problems which the war, the migration of races, and the sudden growth of great cities are thrusting upon us." There was need for a foundation of "science not only under technical arts and learned professions but under commerce, government, and social relations."⁶⁷ To New-Class representatives, the finest service would consist of diffusing scientific training to "professionalize" or elevate the less meritorious advocates of common-sense practicality. Professional principles signified aspirations for a vertically built society -- composed of those below who needed scientific guidance and those experts above who were prepared to give it.⁶⁸

Under the leadership of important representatives of the New-Class (like university presidents and officials in charge of emerging learned societies), professional principles increasingly congealed in institutional practices in two important ways.⁶⁹ First, it was evident in attempts to construct a smoothly articulated "educational ladder" from lower levels through university graduate schools. Integral to these efforts was the desire to resolve the function of secondary schooling on the ladder, thereby enabling college and university entrance requirements to be raised and standardized. Such resolution allowed promising youth to be channeled into the meritorious vanguard of subject-matter specialties. It meant re-forming public high schools (which, in the late nineteenth century, increasingly superseded older academies as the favored form of

secondary schooling) into institutions with adequate preparatory standards. Among the reforms designed to redefine high schools in accordance with college and university admission policies, New-Class figures concentrated on developing accredited high school diplomas and uniform examinations. Newly established agencies, like the North Central Association of 1894 and, eventually, the College Entrance Examination Board, helped ensure the practicability of these reforms through standardized accrediting of high schools and through provision of competence in the development of exams. Also emerging by the mid-1890s were plans to standardize college entrance requirements on the "unit" system. Here a specific amount of "time exposure" to particular subjects promised suitability for college. After the turn of the century, the Carnegie Foundation for the Advancement of Teaching did much to promote the unit method of basing admission on the completion of courses carried for a specific number of days each week of the high school year.⁷⁰

Second, on the highest rung of the ladder, professional principles steadily jelled into the practices of university faculty. Befitting the university's growing function as the repository of science and of expertise, and, thus, as the signal source of legitimacy for New-Class aspirations, the faculty demonstrated professionalization in action. Spearheaded by Johns Hopkins University and rising graduate schools of arts and sciences, by the late 1880s and early 1890s the Ph.D. degree gained recognition as an essential stamp of professorial competence.⁷¹ Some, like William James of Harvard, might term the degree "a mere advertising resource, a manner of throwing dust in the Public's eye," but

at the century's end permanent appointments at leading universities usually depended on having one.⁷² Indeed, the degree exemplified a distinguishing characteristic of the New Class: Their credentials certified the acquisition of skills that entitled them to claim incomes proportionate both to an achieved level of schooling and to other meritorious accomplishments. Thus the higher faculty ascended the ladder of degrees, the greater was the claim. Recognition from professional associations could be transformed into remunerative appointments. Winning the race to "Publish or Perish" by writing for journals and university presses often built reputations upon which careers depended. During the 1890s, moreover, these varying credentials signified mastery of the esoteric specialties that growing university departmentalization accommodated. Such credentials also promised promotion up the newly solidified departmental hierarchy of academic ranks.⁷³

Overall, faculty professionalization and the routinization of an educational ladder marked New-Class interests in organized expertise and centralized accrediting powers. Such organization and centralization seemed to be a great distance from the individual inventor's unregulated quest for useful knowledge, from the entrepreneur's common-sense practicality, and from the general celebration of *laissez-faire* local autonomy. They also shared little in common with a persistent middle-class sentiment derived largely from memories of a classical education considered by many to be irrelevant to practical pursuits: "Book learning is something," the financier, Daniel Drew, once asserted, "but thirteen million dollars is also something, and a mighty sight more."⁷⁴

Contradiction Between the New and Middle Classes

To the old middle class, the values -- practical utility, common sense, a general Alger heroics -- of the self-made "average man" overmatched the perceived laziness of the college graduate. In this view moral character, not intellectual proclivity, was the principal source of merit. The outlook was especially pronounced during the pioneering days prior to 1890, but it persisted after that date, partly because of efforts to remind egalitarians like the Populists that economic misfortune referred to individual failure rather than social injustice.⁷⁵ Industrialists and other business leaders of the corporations, notwithstanding their moral lapses of the Gilded Years, often shared the view, particularly its emphasis on practicality. Carnegie, for example, presumed the erstwhile values when in 1889 he deprecated the product of classical collegiate training.

While the college student has been learning a little about the barbarous and petty squabbles of a far-distant past, or trying to master languages which are dead, such knowledge as seems adapted for life upon another planet than this as far as business affairs are concerned, the future captain of industry is hotly engaged in the school of experience, obtaining the very knowledge required for his future triumphs. . . . College education as it exists is fatal to success in that domain.⁷⁶

Such disapproval fell on more than classical schooling; it extended into a general anti-intellectualism.⁷⁷

New-Class leaders countered middle-class opposition by defending a meritocratic order that would be under their leadership. Already, in 1869, Charles Eliot, the president of Harvard, had warned of the "national danger"

represented by assumptions that gave rise to "but a halting faith in special training for high professional employments." He continued:

The vulgar conceit that a Yankee can turn his hand to anything we insensibly carry into high places, where it is preposterous and criminal. We are accustomed to seeing men leap from farm or shop to court-room or pulpit, and we half believe that common men can safely use the seven-league boots of genius. What amount of knowledge and experience do we habitually demand of our lawgivers? What special training do we ordinarily think necessary for our diplomatists?⁷⁸

This type of retaliation did not evince a New-Class divorce from liberalism. It indicated instead their devotion (particularly on the part of German-inspired scientific researchers) to eighteenth-century Enlightenment rationality, to liberalism as expressed in the Jeffersonian emphasis on a "natural aristocracy" of the meritorious. Opposed to deriving one's station in life from inherited wealth, caste, and a host of unnatural privileges, New-Class representatives shared the liberal yearning for opportunity to advance on the basis of individual character.⁷⁹

But New-Class experts ascribed more to character than the moral-practical attributes of thrift, industry, and the rest. They added the seasoning of intellectual training. To be trained in science, to grasp the conceptual foundation underlying a special activity, signified the expert's possession of a greater fortitude, a sturdier perseverance, the enduring attributes of mental initiative and intellectual self-reliance. By sustaining the investigation that could isolate and control relevant natural and social factors, these attributes furthered the effort to extend the frontiers of knowledge.⁸⁰ They lent themselves to the quest to

discover permanent laws governing the world's operation -- Jefferson's "crusade against ignorance."⁸¹

To professionals, this crusade formed the bulwark of national progress. Whereas to business leaders and many others in the middle class, it was in the main necessary to turn Jacksonian practicality toward Alger's pursuit of "thirteen million dollars." To the latter, nothing quite matched money as an incentive for stimulating productivity and progress.⁸²

Thus a contradictory rift opened in liberal society, not only between business leaders and their adversaries among workers and farming people, but between those leaders and New-Class professionals as well. Of course, while liberalism had never spoken with one homogeneous voice,⁸³ Americans nevertheless had bonded across class lines by presuming the normative principle of individual freedom. Faith in this freedom had long provided ideological glue that held liberal society together.⁸⁴

Consequently it was of considerable moment when various academicians, particularly social scientists, availed themselves of their version of the faith -- academic freedom -- and took pro-labor and pro-Populist positions on sundry issues during the 1890s. Increasingly prominent as college and university trustees since the Civil War, business leaders found such positions intolerable. They exerted pressure for the trial or dismissal of the rebels. Even an incomplete roll call of those squelched is impressive: Dr. George M. Steele, president of Lawrence College, dismissed (1892); H.E. Stockbridge, president of North Dakota Agricultural College, dismissed (1893); Richard T. Ely, professor of

economics at the University of Wisconsin, tried (1894); I.A. Hourwich, docent at the University of Chicago, dismissed (1894); Edward W. Bemis, economist at the University of Chicago, dismissed (1895); John R. Commons, economist at Indiana University, dismissed (1896); and James Allen Smith, political scientist at Marietta College, dismissed (1897). The decade's characteristic breach between liberal ideal and actual experience extended to university faculty as well.⁸⁵

Duly chastened by the punishment that could follow gestures of alliance with farm and labor movements, presidents and their professors were subsequently more willing to hinge academic freedom to the professional norms of nonpartisan neutrality and the refusal to speak on matters outside the sphere of specialized competence. In other words, as one commentator noted, a "cautious liberalism" came to prevail in universities, where fear of controversies that would offend wealthy donors coupled with tolerance for a faculty's autonomous inquiry into esoteric specialties.⁸⁶ Confronted with contradictory relations to business leaders, professionals sought individual freedom within the confines of a politically safe area of expertise.

Still it was a contradiction that contained the seeds of a happy resolution. The New Class needed business leaders: Between 1878 and 1898 businessmen gave \$140 million to emerging universities. Philanthropy was a traditional source of sustenance for colleges and universities; but after 1890 it became something of a vogue. A celebrated instance of this fashion was John D. Rockefeller's contribution between 1889 and 1892 of \$2 million to further the endowment of the new University of Chicago. Business leaders, in turn, needed New-Class

professionals: Corporations required both the scientific production of new knowledge relevant to industrial activities, and the technical expertise attending to the management of their far-flung operations.

Moreover, the university movement, unlike the classical colleges with their affirmations of the cultured gentleman and pious devotee of the disciplined mind, had already represented an accommodation to middle-class norms. For example, among the movement's accomplishments was the peculiar genius of the elective system. Beginning in the 1870s, it allowed students to select their courses of study, thereby satisfying both New and middle-class interests. On the one hand, it opened the curriculum to practical subjects the middle class could utilize in adapting to the requirements of an industrializing division of labor. On the other hand, it fueled the specialization that culminated in the research emphasis of the New Class's emerging graduate schools. The elective system thus crystallized the incipient achievement of America's complex array of universities. In broad outline, the researchers at Johns Hopkins could stand for a Jeffersonian natural aristocracy; the professional's middle-class-accommodating tilt toward practical service could find ample expression in the more Jacksonian land-grant institutions; and the state universities could combine these emphases in one comprehensive structure. Such was the path to resolution of the class contradiction.⁸⁷

While retaining their distinctive identity, many in the New Class prepared to work harmoniously with business leaders. Though some professionals, like one social scientist, remained wary of the "soulless mechanism of modern Mammon,

that Frankenstein of the laboratory of Belial, the syndicate-trust," nonetheless an accelerated corporate expansion after 1896 attracted an increasing number of university graduates into managerial positions in the rising bureaucracies.⁸⁸

Elsewhere, however much they might lament it, business leaders increasingly understood that the tide was turning on Horatio Alger. Frederick D. Underwood, president of the Erie Railroad, remarked: "The demand for technical skill and commercial ability has lessened the promotion of men from the ranks, and must . . . continue to do so."⁸⁹ And Carnegie, once awakened to the difference between classical and scientific training, affirmed as early as 1890 that "we have begun to realize that a knowledge of chemistry . . . is worth a knowledge of all the dead languages that ever were spoken upon the earth."⁹⁰ A shared interest in adjusting to a new corporate economic landscape motivated the growing concord between business leaders and professionals.⁹¹

Expressing the developing merger of New and upper middle-class action, in 1899 businessmen of the Chicago Civic Federation spearheaded a drive to hold the Chicago Conference on Trusts. The Conference afforded an occasion for both leading academicians and captains of industry to discuss the social impact of corporations. In his keynote comments to the Conference, Professor J.W. Jenks of Cornell University raised questions that not long before any Populist would have happily engaged.

Are we to consider the new form of organization [trusts] a means of saving energy comparable with a new invention like the steam engine or the railroad, so that we may be fairly sure that, although temporary suffering occurs, there will be enough savings to lower prices and to increase the demand for goods to so great an extent that the total

demand for labor will in the long run be increased and the public benefited? Or, on the other hand, is the new form of organization a conspiracy of the few rich and powerful to oppress the many?⁹²

Across the nation many New-Class professionals effectively issued affirmative answers to the first of these queries. It was a question about the economic efficiency of the corporation. If the "trust" measured favorably on that yardstick, then it received justification from its "public benefits." More difficult questions of its relation to social equality and distribution of power could be transposed to the language of "lower prices" and "total demand for labor."⁹³ Future expansion of the economic pie promised to dissolve class divisions. Or, according to William H. Maxwell, superintendent of the New York City public schools, "in a community in which every man had been trained to his highest efficiency the evils of monopoly and poverty would be alike impossible."⁹⁴

An Expanding Administrative State

Whether preoccupied with reform of production sites or bent on overhauling the entire social order,⁹⁵ professionals often equated the "highest efficiency" with expanding administrative activity. They sought, in particular, to staff and manage a federal attempt to build a state that could reintegrate the torn social fabric of the 1890s into a perfectly coordinated whole.⁹⁶

The endeavor was exemplified by the efforts of the Interstate Commerce Commission (ICC) in business regulation and by the conservation movement's scientifically guided proposals to regulate the public domain. Both aimed to maintain an Olympian supervision over railroads, shippers, and the various users

of natural resources. By securing this comprehensive oversight, professionals believed they could ameliorate the impact of the corporation on the nation. They would be able to efficiently adjust its relations to nature and society.⁹⁷

This policy of centralization promised a practical fulfillment of the vertically oriented principles of professionalism. Experts commissioned from the top could best serve society by impartially regulating the shortsighted aims of those below. The policy signalled what one historian has called a prescription for a "technocratic collectivism," a planned approach to countering social disarray.⁹⁸ And growing numbers of corporate leaders, in spite of their propensity to label even the first hints of regulation as "socialistic," became receptive to planning that might check the competition that adversely affected prices and which might undercut radical challenges to their power.⁹⁹

But designs to expand the administrative state stumbled in the face of opposition from traditional practices. Americans took pride in their historic commitment to the decentralized authority spread among the various state governments. Coordination of these (such as it was) depended on locally-based political parties and on courts determined to protect time-honored devotion to *laissez-faire*. Notably, the Supreme Court utilized both the Interstate Commerce Act's (1887) ambiguity regarding extension of administrative supervision and its location of enforcement powers in the judiciary to invalidate ICC rulings that sought to prescribe future railway rates.¹⁰⁰ The influence of the parties, meanwhile, provided additional frustration of centralizing efforts. In 1898, a year before assuming his duties as president of Yale, Arthur Hadley delivered the

presidential address to the American Economic Association. Speaking on "The Relation between Politics and Economics," he drew attention to this frustration.

The economist shows how the largely independent action of the parts may be made to conduce to the collective good of the whole. The practical workings of representative government, making each member primarily responsible to his district -- or one might better say the members of his own party in his district -- means that the collective action of the whole is made to fulfill the separate wants of the parts -- even though the satisfaction of those wants may antagonize the general interests of the nation.¹⁰¹

There remained, then, the professional task of persuading Americans to accede to an order conducive "to the collective good of the whole." Professionals understood that that order could not be shaped to fit the aspirations stimulated by an earlier propagation of the virtues of an entrepreneurial society. The economic landscape had changed too drastically, pressuring for a new social adjustment. As Stanford University's Ellwood Cubberley later asserted: Small entrepreneurs increasingly lost ground "to large mercantile and industrial concerns." He continued:

No longer can a man save up a thousand dollars and start in business for himself with much chance of success. The employee tends to remain an employee . . . the worker tends more and more to become a cog in the machine and to lose sight of his place in the industrial process.¹⁰²

The disappointment of older aspirations raised questions of how best to adapt the populace to the new landscape and of how to do so without resorting to the force that President Hayes found so displeasing in 1877. Perhaps a few answers resided in the particular varieties of education advanced by some educators.

The Liberalism of the Land-Grant Institutions
and the Case of Kansas State

An Overview of Land-Grant Beginnings
and Development

The nationalization of the land-grant colleges and universities occurred in 1862. The Morrill Act of that year provided for grants of public land and land scrip to the states and territories. The magnitude of each bestowal corresponded to the size of a state's congressional representation. Sale of land and scrip furthered

the endowment, support, and maintenance of 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 such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.¹⁰³

For at least 25 years following the Act's passage the leaders of the new institutions encountered various obstacles as they struggled to implement these provisions. The Act was a vaguely worded compromise among competing interests. Left in confusion was the question of how leading should be the "leading object" of instruction in agriculture and mechanic arts. Classical educators in the various colleges and universities exploited the confusion by redirecting agricultural funds toward traditional uses. Initially, many organized farmers of the middle class opposed the new colleges. In their view, knowledge of practical farming could only be gained from common-sense experience, from

rules of thumb passed by one generation to the next. Other farming people felt indifferent toward the upstart schools since they were barely aware of land-grant activity. Perhaps the most important hindrance was the lack of trained experts in agriculture. Without opportunities for professional development and instructional materials for the applications of science, early professors of agriculture found themselves frustrated in their efforts to promote the growth of agricultural faculties.¹⁰⁴

As the grants of land failed to provide expected capital, as states refused to offer extensive financial support, and as enrollments (particularly in agriculture) remained low, the Morrill Act's venture did not seem promising. At first it appeared that businessmen would be among the few actually to benefit from the Act. Between 1864 and 1873 they used its land provisions to acquire large holdings of both timber land in the lake states of Michigan, Wisconsin, and Minnesota, and grassland in California's San Joaquin Valley.¹⁰⁵

Yet by the 1880s leaders of the fledgling institutions welcomed new legislation that helped them overcome obstacles. As agricultural industrialization accelerated, organized farmers increasingly awakened to the practical and profitable results that could flow from scientific investigations. In the forefront of such research were the chemists who explored the food and fertilizer requirements of animals and crops. Thus, with the waxing support of farm organizations and with the assistance of the Commissioner of Agriculture, Norman J. Colman, several years of agitation enabled leaders to rejoice in the passage of the Hatch Act of 1887. The Act nationalized agricultural experiment stations as

departments within the land-grant institutions. It stimulated the production of scientific textbooks, erection of laboratory facilities, and strides toward graduate study. By 1898, 54 main experiment stations operated in all the states and territories.¹⁰⁶

Organized farmers soon received returns for their support of the law. For example, in 1890 Stephen Babcock of the Wisconsin station developed an easy means of determining the butterfat in milk. In part the test allowed dairy farmers to gauge the kind of husbandry that suited higher butterfat production.¹⁰⁷ "The Babcock test," declared Dean William A. Henry of the Wisconsin College of Agriculture, "was to associated [cooperative] dairying what the Morse electric telegraph was to railroad operation."¹⁰⁸

Further financial help facilitated land-grant development. Drawing on support comparable to that which yielded the Hatch Act, the "Second Morrill Act" achieved passage in 1890. It provided each institution with an additional endowment of \$15,000. This amount would be obtained from the sale of public land; appended to it would be payments of \$1,000 each year until the installments reached a total of \$25,000. The Act spurred state legislatures to lend greater assistance. By 1892 contributions from state sources accounted for two-thirds of the \$4 million land-grant budget.¹⁰⁹

The land-grant institutions as a whole, and the agricultural colleges within them, benefited from a growing appreciation of their significance for an industrializing society. This importance attached especially to the divisions of mechanic arts in the institutions. As early disputes regarding the interpretation of the name

"mechanic arts" increasingly resolved in favor of defining it to mean engineering, those divisions captured greater enrollments than their agricultural counterparts. Though both were increasing in absolute numbers from the mid-1890s to the end of the decade, engineering attracted almost twice as many students as agriculture.¹¹⁰

Following years of successive increases in both figures, by 1898 the land-grant colleges and universities enrolled 31,658 students under the instruction of 1,722 faculty members. When students arrived on campus that year, they attended one of basically three types of institution. In 27 states and territories they went to a separately organized agricultural and mechanical college; in 20 others to a university with an agricultural division attached to it; and in Massachusetts to the only institution devoted exclusively to agriculture.¹¹¹

Land-Grant Liberalism

Liberalism grounded all land-grant educational institutions. In subsequent decades the literature on these institutions mounted a refrain: The Morrill Act, with its provision for instruction in agriculture and the mechanic arts, aimed to raise "practical education" to parity with its classical predecessor. By establishing colleges for the "industrial classes" (American producers), their "several pursuits" would be lifted to a position of dignity that rivalled that of physicians and clergy. Equality of subject matter signified equal opportunity to partake of advancing economic growth and material progress. Individuals of all occupations would learn the skills they needed to prosper amid the competition and mobility of nineteenth-century America.¹¹² Deeply Jacksonian, the land-grant institutions

promoted the ideal of an "open door" to a schooling where, as expressed in the famous saying of Ezra Cornell, "any person can find instruction in any study."¹¹³ This promotion was a special instance of that wider educational effort of numerous agencies to practice liberal persuasion after the Civil War.

Land-grant leaders had considerable persuading to do. For prior to the War the earliest major influence on the development of the new dispensation in higher education came from eastern agricultural societies. Initially these were associations of the very prominent -- influential politicians, wealthy businessmen, agricultural editors, and "gentleman farmers." Predominantly located in urban centers, their purpose entailed meetings to discuss means of enhancing the productivity of farming and of furthering agricultural schools. But they had no mass base of support. Members of the societies typically viewed the farming masses as ignorant, superstitious, and unproductive. Such unpopular beginnings help explain the low enrollments in land-grant institutions before the 1890s.¹¹⁴ Eugene Davenport of the Illinois institution recollected the influence generated by the societies: "In no case, by any stretch of the imagination, could it have been called a popular movement."¹¹⁵ Nor was it a popularly enticing motion.

Thus land-grant popularization depended on the articulation of principles with an egalitarian flavor. These assumptions received their foremost expression from Jonathan Baldwin Turner (1805-1899) of Illinois. From him land-grant leaders inherited the unparalleled statement of their liberalism. Farm bred, graduate of Yale, by the late 1840s and the 1850s Turner rebelled against the classical tradition.¹¹⁶ Later he told Davenport that in his youth he and Lincoln

had "dreamed out together the hope for a new education in the practical things of life."¹¹⁷ Although not wedded solely to practicality, his strong appeal to emerging industrialists rested on their sympathy with the Jacksonian ideals that radiated from his public pronouncements.¹¹⁸

These ideals shone in his famous address, "A Plan for a State University for the Industrial Classes," delivered before Illinois teachers and farmers in the early 1850s.¹¹⁹ In it he expounded:

All civilized society is, necessarily, divided into two distinct coöperative, not antagonistic, classes: a small class, whose proper business it is to teach the true principles of religion, law, medicine, science, art, and literature; and a much larger class, who are engaged in some form of labor in agriculture, commerce, and the arts.¹²⁰

The latter was "the industrial class"; and Turner asked

where are the universities, the apparatus, the professors, and the literature specifically adapted to any one of the industrial classes? Echo answers, Where? In other words, society has become, long since, wise enough to know that its teachers need to be educated; but it has not yet become wise enough to know that its workers need education just as much.¹²¹

The aim of the university should "be to apply existing knowledge directly and efficiently to all practical pursuits and professions in life, and to extend the boundaries of our present knowledge in all possible practical directions." On the assumption "that work alone is honorable, and indolence certain disgrace," Turner pleaded for opportunity for the producing classes, for expanding access to the middle class. This plea grew from his belief that interclass harmony depended on disallowing any stratum to "wield their power more or less for their own exclusive interests, and the interests of their friends."¹²²

Turner's ideas became a major force in the eventual passage of the Morrill Act. Organized farmers in Illinois rallied to the educator's plan and in 1853 induced the state's legislature to petition Congress on the proposition's behalf.¹²³ In the words of the entreaty, Turner's proposals contained "too many popular elements not to find favor with a land-giving Congress, if pressed forward in season." The legislature requested that federal representatives consider those components "adapted to the manifold wants of a practical and enterprising people."¹²⁴ And, though Justin Morrill insisted on his accomplished authorship, Turner's intellectual rationale infused the Act.¹²⁵

Aside from the influence of Turner, in the final third of the century land-grant leaders lived on an economic landscape that generated faith in the correctness of unfettered production. They accepted the creed that the government's function in a frontier society involved assisting the protagonists of self-help in learning scientific applications that would enable them to be more productive. The leaders appreciated both the risk-taking that developed the nation and its reliance on practical inventiveness and ingenuity. Most of them decided to adapt their colleges and universities to such principles and practices.¹²⁶

President W.J. Kerr of Oregon took the truth of these assumptions for granted. After the turn of the century he delivered a retrospective account of the "new spirit" of the land-grant mission. He found its unquestionable verity distilled in four major characteristics. These consisted of "the spirit of initiative" exemplified in the pioneering applications of science that antedated the formation of a trained body of experts; "the spirit of growth" as based on the progressive

achievements of applied science; "the spirit of equal opportunity" as expressed in devotion to an anti-aristocratic equality of subject matter; and "the spirit of helpfulness" as revealed in land-grant efforts both to diffuse new practices of production and to spread the fresh psyche "into the thought and ideals of the people."¹²⁷

Leaders also recognized that the Morrill Act, like the Homestead Act, drew on the agrarian legacy of Jefferson. The Virginian's estimation of farmers as "the chosen people of God," as those whose distance from urban corruption and proximity to nature made them bulwarks of republican stability, filtered into the Republican Party's "free-soil" commitment to upholding the independent yeoman.¹²⁸ The college Act was of a piece with that promise.¹²⁹

None verbalized affirmation of the yeoman more eloquently than Seaman Knapp, president of the Iowa institution in the mid-1880s and later a representative of the United States Department of Agriculture. Early in the twentieth century he spoke as if he belonged in the late eighteenth. He held

that the ownership of land is a mark of honor, that a patent to land is a title to nobility, a right to sovereignty. The ownership must be absolute and subject only to the state, so that each proprietor is the independent sovereign of a portion of the United States, with the final authority through the ballot to control the local, county, and National governments -- a position of great dignity and power. . . . [E]ach citizen must own and control something. In a sense he must be lord of a certain territory. This territory is called a farm, but legally it is a subdivision of the state, to which the farmer receives perpetual title in order that he may have the means to support his position as an independent sovereign with dignity and by absolutely governing a small portion of the United States learn to assist wisely in governing the whole.¹³⁰

When writing the charter of the University of Virginia in 1818, Jefferson declared the purpose of a state university to be that of fostering "a sound spirit of legislation, which banishing all unnecessary restraint on individual action, shall leave us free to do whatever does not violate the equal rights of another."¹³¹ The charge was the advancement of individual freedom. Similarly, when looking back on land-grant development from a twentieth-century vantage point, E.A. Bryan of the institution in Washington state viewed the Morrill Act as a realization of this principle. In its protest against retaining the higher learning for an "aristocratic organization of society," the Act gave rise to schools that were "permeated by the very spirit of freedom which is of the essence of democracy." It unfettered the individual. Correspondingly, upon examination of the meaning of its provisions, Bryan discovered in the Act that "escape from subservience to authority is also there."¹³²

Yet an individual's actualization of liberal ideals presupposed open access to upward class mobility. Especially by the 1890s varying strata saw such entry as a diminishing possibility. To some of them, liberal land-grant orthodoxy accordingly became increasingly untenable.

The Case of Kansas State

After influential leaders of the local Bluemont Central College Association secured the benefits of the Morrill Act, Kansas State Agricultural College opened for instruction on September 2, 1863. It formed as a separate agricultural and mechanical college and eventually concentrated predominately on agriculture. Its location at Manhattan placed it amid the Flint Hills grasslands, some 150 miles

eastward of the 20-inch rainfall line. Put under way by the early 1870s were its modest experimental beginnings in helping prairie farmers on the frontier of western Kansas adapt their husbandry to a climate that featured severe weather in summer and winter. During the administration of President George T. Fairchild (1879-1897), enrollment for the institution as a whole rose from 214 to 734. The agricultural division -- consisting primarily of the departments of agriculture, horticulture and entomology, and the experiment station -- advanced as well. This progress evidenced foremost when passage of the Hatch Act led to the establishment of the station in 1887 and 1888. Agricultural investigations thereafter expanded to include a broad range of topics.¹³³

In the final decades of the century the College was decisively shaped by a political atmosphere charged, as one historian of the institution has noted, with "individualistic, *laissez-faire* notions" that appealed to "local Republican politicians who championed the Gilded Age crowd and the principles of the Gospel of Wealth -- that is, if you can pile up a large amount of money, you deserve it."¹³⁴ Already having faced the rigors of the frontier and concerned with their individual success in this political economy of self-aggrandizement, farmers belonging to organizations such as the Grange continuously demanded that College personnel provide them with improved production techniques. Farmers believed these would bolster self-help in the struggle to cope with competition. Agriculturists at the College responded favorably to the demands. Thus, for example, at an increasing rate from the late 1870s to the early 1890s they initiated test plots of

corn, alfalfa, and wheat. By 1887 the "Early May" variety of winter wheat was conclusively recommended as excellent for conditions in Kansas.¹³⁵

But in this period of "overproduction" and sharply declining farm prices, the Republican commitment to self-help clashed with the experience of economic reality. Early in the 1890s Populists enlarged their influence in the state. Under the banner of "social reform," a slogan that distilled the failure of individualism, the "People's" stalwarts, Lorenzo Lewelling and John W. Leedy, won the governorship in 1892 and 1896, respectively. For much of the time from 1892 to 1898 Populists supplied considerable direction of the state government in Topeka. Lewelling, Leedy, and their supporters in the legislature wrested control of the Board of Regents of Kansas State from the Republican Party. By 1897 five Populists outnumbered the two Republicans on the Board. That same year the Regents compelled President Fairchild to resign from office, and in April further demanded a wholesale overhaul of the faculty that culminated in five dismissals and three resignations. Fourteen faculty managed to retain their positions. A Populist sympathizer, Thomas E. Will, who had served the institution as professor of political economy since 1894, assumed the presidency. He remained in office until 1899.¹³⁶ Strong sentiment roused from all sides of these events at Manhattan. One historical account of the College noted that "the excitement on the campus and in Manhattan, among citizens, faculty members, students, and alumni, reached a height never attained before nor since."¹³⁷

Earlier, the rise of Populism in 1890 had prompted Fairchild to use the faculty periodical, the *Industrialist*, to express the hope that farming people would

avoid a sweeping approach to reform. He called for a narrowing of farmers' aims and a willingness to focus their attention on practical possibilities of concrete solutions for their hardship. Yet he scarcely detailed the nature of those remedies.¹³⁸

During his term as president, Will, on the other hand, recognized that Populist control of Kansas State opened an area of American society to views that challenged pragmatic prescriptions. In 1898 he delivered a commencement address that emphasized the breach "between the existing civilization" of industrial society and "the new conscience" of comprehensive social reform.¹³⁹

His words reinforced the desire of the Populist Regents to utilize the resources of Kansas State to examine economic laws "which govern the distribution of wealth," a task that they believed would develop a "healthy inquiry among the people into the causes that depress industry and paralyze agriculture."¹⁴⁰ They reasoned that the College should not be limited to a focus on production techniques that enhanced self-help. Instead, in 1897 C.B. Hoffman, a leading light of the Board, wanted the producing classes to receive knowledge of the power relations that shaped the economic factors of finance, marketing, taxation, and transportation.¹⁴¹

Such calls for economic instruction reflected the characteristic Populist concern for distributive justice and their belief that education could lead people to initiate an egalitarian democracy. In a July 1898 supplement to the *Industrialist*, Will defended the emphasis on economic studies by writing, "Because nowadays one may work hard and skillfully and produce abundantly and yet

remain poor in a rich country. Economic science teaches why this is true and how to improve upon such conditions."¹⁴²

Though later versions of the Populist takeover have viewed it as an unfortunate instance of political partisanship prevailing over a sounder policy of professional neutrality,¹⁴³ in the 1890s the conduct of the Will administration demonstrated achievements with which most New-Class members could agree. Successful efforts were made, for example, to upgrade the faculty through the addition of four holders of the Ph.D. (Previously, just one faculty member had acquired that degree.) Further, enrollments for graduate study climbed from 46 in the first year of the administration to 57 in the second. Each of these figures exceeded those of both the two years prior to Will's term and the two that came directly after.¹⁴⁴ In the words of one historian, although the Populist renovation of the faculty dealt "a severe blow to such tradition of academic tenure as may have existed," nevertheless "the new professors that were hired were the best obtainable for the salary that was offered. Immediately, that [Kansas State] college began to emerge from the high school ranks."¹⁴⁵

Populism at the institution signalled the attempt of a portion of the New Class to ally themselves with farming people in an effort to eliminate the conditions that produced hardship for the latter. The popular radicalism of the former distinguished them from others in the New Class.¹⁴⁶ Not surprisingly, this radical departure incurred the enmity of New and middle-class opponents. Presidents Nicholas Murray Butler of Columbia University and David Starr Jordan of Stanford, following misleading press accounts, decried the partisanship that

supposedly had transformed Kansas State into an outpost of socialism. Bankers and other Republicans in Manhattan and around the state were similarly agitated.¹⁴⁷ But the *Manhattan Republic*, reflecting its frequent sympathy with the Will administration, replied that attacks against the Populist institution were often engineered by the "First National Bank crowd," a group in the community who held "the contemptible view that the College exists for the direct benefit of such citizens of the town as can get at its treasury or the pocketbook of its students."¹⁴⁸

Most of the nation's land-grant leaders refused to allow their inherited liberalism to turn in the direction charted at Kansas State. Instead, they embraced the cautious posture enunciated by Lotus D. Coffman of Minnesota. He explained that higher institutions must not succumb to being "arenas for the promotion of any particular social theories."¹⁴⁹ Beyond affirmations of professional neutrality, after 1900 E.A. Bryan joined other leaders in recounting the uprising at "a western agricultural college," an occasion whereupon "many of us laughed; but, while, perhaps, we might have criticized the detail, the idea underlying was correct." Populists had erred, that is, in their approach to reform. Yet they had rightly pointed to problems associated with an integrating national market. It was important to heed their directive, because "in these economic questions which are so intimately connected with the agricultural development of the country, we are far behindhand."¹⁵⁰ Land-grant leaders, then, like the Populists, began to recognize that the liberal faith in the sufficiency of self-help techniques no longer matched the reality of economic experience. But, unlike them, they linked this

recognition to a completely different pattern of class alliances, and they expressed it in the name of contrary principles regarding the way the world should work.

In Kansas, as internal division and external opposition eroded Populist strength,¹⁵¹ by 1898 Republicans increasingly reasserted their control of the state government. In 1899 they again captured a majority of the Regents. The dismissal of Will and his principal supporters soon followed, thus ending the Populist experiment in educational democracy.¹⁵²

The New Class and the Vertical Turn of the Agricultural Colleges¹⁵³

Jonathan Turner never intended entirely to relinquish his university to the middle-class champions of extreme practicality.¹⁵⁴ His remarks of the 1850s elaborated his full intention.

In our country we have no aristocracy, with the inalienable wealth of the ages and constant leisure and means to perform all manner of useful experiments for their own amusement; but we must create our nobility for this purpose, as we elect our rulers, from our own ranks, to aid and serve, not to domineer over and control us.¹⁵⁵

This creation of an intellectual "nobility" would improve on common sense.

As things now are, our best farmers and mechanics, by their own native force of mind, by the slow process of individual experience, come to know, at forty, what they might have been taught in six months at twenty; while a still greater number of the less fortunate, or less gifted, stumble on through life almost as ignorant of every true principle of their art as when they began. A man of real skill is amazed at the slovenly ignorance and waste he everywhere discovers on all parts of their premises, and still more to hear them boast of their ignorance of all 'book farming,' and maintain

that 'their children can do as well as they have done'; and it certainly would be a great pity if they could not.¹⁵⁶

In these words Turner united the land-grant mission with a Jeffersonian quest for a meritocratic aristocracy. He, like the man from Monticello, sought leaders with a scientific grasp of laws that governed practical exercise of the experiential arts. Such leadership could eradicate "slovenly ignorance" from social life. In the final third of the nineteenth century, such intellectuals began to assemble in land-grant settings. As they did so, they espoused the characteristic principles of the Enlightenment -- faith in progress premised on the use of scientific rationality to transform society and nature into a perfect order of things.¹⁵⁷

Agricultural college leaders wanted a trained nobility to be in charge of the complex practices that emerged on the changing economic landscape of American agriculture. Throughout much of the nineteenth century farmers raised production primarily by bringing new land under cultivation. The availability of abundant westward territory also dampened land prices, making it comparatively easy to occupy particular areas. With ready access to cheap yet fertile land, numerous farmers needed to maintain only a minimum investment in animals and machines in order to generate increased output and a modest profit for themselves -- all the while avoiding strict attention to questions of fertility. After the Civil War and especially after 1880, however, rich soils became scarce. Their price increased and the competitive struggle in farming intensified. To remain financially solvent, farmers needed to achieve greater returns on land and labor. Thus farm mechanization accelerated, as evidenced during the 1890s when

steam tractors replaced horses to propel the giant grain combines used in the Far West.

To assure a permanent source of food in a nation with a diminishing base of loamy soils, college scientists worked late in the century to develop higher-producing plant varieties, means of limiting animal and plant diseases, better feeding rations for livestock, and methods of sustaining soil fertility.¹⁵⁸ In 1895 Alfred True of the United States Department of Agriculture (USDA) observed the changing landscape. He noted that if its new machinery and techniques were to be handled properly, then farming would demand the exercise of considerable intelligence. He stressed that "greater technical knowledge will be required to be a successful farmer in the twentieth century than has hitherto been needful." The requirement was unavoidable when "every year it becomes more difficult for the ignorant farmer to secure even the necessities of life."¹⁵⁹ Such observations fortified collegiate determination to bring husbandry under the guidance of empyrean science and its empyreal scientists.¹⁶⁰

The New Class in the Colleges

College leaders used the principles of professionalism to anchor the formation of a scientific leadership in agriculture.¹⁶¹ They advocated meritorious achievement and equality of opportunity as doctrines that supported the Jeffersonian quest to tailor higher schooling to the aspirations of the best and brightest. In the final years of the century they struggled to raise collegiate entrance requirements above a common school preparation. And they held that only science itself, the neutral arbiter of who and what standards qualified as

meritorious, could be trusted to derive examination procedures that sifted for the best entrants.¹⁶²

The agricultural faculties followed a direction that often received its first clear utterances from land-grant presidents. As early as 1867 Daniel Read, head of the University of Missouri, celebrated his institution as a meritocratic order made possible because science "has come down from heaven to dwell among men." Having so descended, it met "the demands of the age" by surpassing experiential learning and by imparting a grasp of natural laws that ruled the practice of an art.¹⁶³ In later historical reflections on the purpose of the Morrill Act, President William Oxley Thompson of Ohio State University observed that the law's mission in a "democracy" was to "level up" the masses and not to "level down" the superior people.¹⁶⁴ Other presidents closed the nineteenth century with the expression of similar convictions.¹⁶⁵

Meritorious achievement marked the attainment of specialized expertise. In 1869 William Folwell of Minnesota traced the development of professional education from its classical beginnings to its preparation for multifarious occupations of an industrial society. He deemed one of its greatest benefits to be the production of an expert for each line, and then commented on how the possession of advanced training demonstrated a distinction from capitalistic owners who did not have comparable occupational grounding.¹⁶⁶ By the 1890s collegiate praise of the value of expertise had grown so common that in 1897 committee members of the Association of American Agricultural Colleges and Experiment Stations (AAACES) worried about "the pernicious influence of

a narrow specialism."¹⁶⁷ But not long after the concern was voiced, few leaders could be found who disputed the kind of conclusion that Dean Eugene Davenport reached when he hinged satisfaction of the nation's food requirements on meeting the "need for well-trained men and for intense specialization in agriculture -- a degree of specialization hardly yet dreamed of and certainly not yet attempted in any of our institutions." Nor would many quarrel with the type of recommendation that Davenport highlighted when he called for greater departmental subdivision as the principal "machinery for dealing with the technique of the [agricultural] profession."¹⁶⁸

To justify the creation of an aristocracy of intelligence, especially after the mid-1880s, college leaders pointed to the expert's usefulness as a social servant.¹⁶⁹ A twentieth-century retrospect provided Davenport with the occasion to proclaim that "the Spirit of the Land-Grant Institution is the Spirit of Service through the application of exact knowledge to the ordinary affairs of life." He recounted that once legislators of the late nineteenth century saw the employment bear fruit in the form of farmers who became "intelligent operatives," they started opening purse strings to agricultural instruction. This generosity, Davenport continued, reinforced the penchant of professional agriculturists for maintaining that their highest ideal consisted in "a service in which the student and the individual is always a means to an end and that end an ever-advancing civilization."¹⁷⁰

Other leaders affirmed that industrial progress depended on a diffusion of science sufficient to professionalize growing numbers of farmers.¹⁷¹ In 1895, for

example, True suggested what was involved in this professionalization. He noted that the experiment stations served farmers by teaching them to upgrade their husbandry in accord with scientific specifications. Then he made the following remark: "In a number of lines their [the stations] work has shown that to be thoroughly successful the farmer must himself be an experimenter."¹⁷² Increasingly, then, scientists served farmers the notice that knowledge was capital, that it could translate into a "successful" claim on income.¹⁷³

Several significant developments allowed college leaders to begin congealing professional principles into institutional practices. The Hatch Act of 1887 and the Morrill Act of 1890 fueled the expansion of agricultural research and instruction. The former, in particular, sped the pace of specialization by stimulating increased graduate work. It also formed one part of a three-piece accomplishment that included the establishment of the AAACES as the main organ of collegiate professionalism, and which involved the erection of the Office of Experiment Stations (OES) as the branch of the national Department of Agriculture that regulated college activity.

Beginning with the Convention of Friends of Agricultural Education held in Chicago in 1876 and at a series of subsequent meetings, collegiate figures and Commissioners of the Department discussed ways to cohere a national direction for the colleges regarding issues of research and administrative organization. The meetings helped shape efforts that resulted in the Hatch Act. Moreover, under Commissioner Norman Colman's guidance, a gathering in 1885 produced the birth of the AAACES.¹⁷⁴ Formally established in 1887, its constitution called

for "the consideration and discussion of all questions pertaining to the successful progress and administration of the colleges and stations included in the association."¹⁷⁵ Its membership policy enrolled institutions -- notably each college, each station, and the Department.¹⁷⁶

Association attention initially focused on the specialized concerns of scientists. By 1892 this allocation evidenced in the completed formation of sections on Agriculture and Chemistry, Horticulture and Botany, and Entomology. Association scope gradually shifted, however, to the original constitutional mandate to consider matters of organization. Station scientists responded by increasingly turning their special interests to the American Society of Agronomy, the Society for the Promotion of Agricultural Science, the National Association of Official Agricultural Chemists, the American Association of Economic Entomologists, and the Experiment Station Veterinarians.¹⁷⁷

Ultimately the AAACES constituted a vehicle for cosmopolitan transcendence of localist views on organization. Rather than confine their thought to the isolated perimeter of their respective institutions, college leaders used the Association as a forum for the nationalization of their consciousness.¹⁷⁸

In this capacity the AAACES operated as a launch pad for the OES. At the 1885 meeting the newly forming Association passed a resolution calling for the erection of an agency in the national Department that would coordinate federal and state activities in agricultural research and instruction. Commissioner Colman rallied to the resolution and called for cooperation among the colleges,

stations, and the Department.¹⁷⁹ He noted that all needed a "central head through which to report and compare results with each other."¹⁸⁰

The official establishment of the OES on October 1, 1888 satisfied the mutual need.¹⁸¹ The Office afforded means to implement the provision in Section 3 of the Hatch Act, requiring the Commissioner of Agriculture occasionally to inform station leaders of "such lines of inquiry as to him shall seem most important; and, in general, to furnish such advice and assistance as will best promote the purpose of this act."¹⁸² Following from this minimal sanction, the OES developed into a central clearing house for agricultural information bearing on issues not only in research, but in graduate instruction, extension, elementary and secondary schooling, and in a host of other areas as well. Office personnel also exercised voting membership of the USDA in the Association.¹⁸³

Under the successive leadership of Wilbur O. Atwater until 1891, Abram W. Harris until 1893, and Alfred C. True until well into the twentieth century, the OES vigorously defended and extended the stations as semi-autonomous divisions for the development of scientific expertise. In one respect, this defense required a strategy that attempted to satisfy both the demands of organized farmers for research with an immediate payoff, and those of scientists for the freedom to undertake long-term investigation.¹⁸⁴ In 1888 Commissioner Colman had already outlined the strategy. He maintained the OES could "serve as an exchange or distribution point for information in two ways, negotiating between the stations and the agricultural public on the one side and between the stations and the world of science on the other." In order to execute his plan to "mediate between

the stations and the agricultural public," the Office in 1889 presented the first issue of the *Farmers' Bulletin*. (Eventually it changed to a general series of the USDA.) And in the attempt to act as his "mediator between the stations and the world of science," in the same year the OES circulated the first volume of the *Experiment Station Record*.¹⁸⁵

The *Record* provided scientists with an opportunity to display their research and build their professional reputations. It also brought them into contact with the latest national and international developments in scientific agriculture. It evinced the cosmopolitanism of the Office.¹⁸⁶

The three-piece accomplishment of the Hatch Act, the AAACES, and the OES confirmed professional principles in institutional practices. One historian has noted that the attainment gave meritorious experts in agriculture the means to advance "the forces of enlightenment."¹⁸⁷ In a historical address on station development, Henry C. White of Georgia complimented the Office for trying to secure the research institutions as scientific laboratories "in the fullest and purest sense." In that capacity they could set professionals free to control the "mighty processes of Nature."¹⁸⁸

Yet perhaps growing departmental specialization signified the greatest confirmation of professionalism in collegiate practice. In 1893 Liberty Bailey of Cornell University insisted that agricultural teaching could not (as it had especially in the 1860s and 1870s) be handled effectively by single, undifferentiated professors of agriculture. He indicated the desirability of appointing a multiplicity of professors to conduct instruction in a range of new specialties. Apart from

individual institutional variations, particularly from 1895 onward, college leaders heeded motions of this nature and began establishing a pattern of specialization that included chairs in agricultural chemistry, dairy chemistry, animal husbandry, dairy husbandry, agricultural physics, horticulture, entomology, botany, bacteriology, and mycology.¹⁸⁹

Class Contradiction

The Morrill Act of 1862, with its provision refusing to exclude "other scientific and classical studies," seemed to sanction the highest intellectual endeavor. Having struggled for years to overcome obstacles that hindered the development of agricultural science, college agriculturists seized every available opportunity to give their fields the scholarly repute of a Johns Hopkins. But their institutions retained the strong impression of Jacksonian birthmarks, as many in the middle class were quick to remind them.¹⁹⁰ The prodding echoed advice like that issued in the 1860s by a Philadelphia agricultural newspaper.

Instead of introducing the student of agriculture to a laboratory and chemical and philosophical apparatus, we would introduce him to a pair of heavy neat's leather boots and corduroy pants, and learn [*sic*] him how to load manure and drive oxen. We would put him through a course of really practical farming, and we would select as professors such men as the Cornells of Bucks county, and the Conrads of Chester county, who could not perhaps make critical analyses of soils but who could raise good crops of corn and potatoes, and wheat and barley.¹⁹¹

Such calls disdained collegiate service that proposed to professionalize farmers through trickle-down diffusion of scientific understanding. Instead, the summons demanded both a straightforward, utilitarian training for husbandmen

and a comparable fitness for farmers' children. The young could acquire this preparation from a higher schooling that leveled down to the point where it was easily accessible to those who represented the hardworking "average."¹⁹² In 1873, in scarcely an exceptional piece of counsel, the *Maryland Farmer* said, "The student must enter college as young men do the accounting room or machine shop -- to learn a trade."¹⁹³ Hence, with some gusto in the early years of the land-grant dispensation but with decreasing vigor as the century wore on, college leaders accommodated the work ethic by giving a curricular emphasis to manual labor. Increasingly they hoped to secure the curriculum for the training of an advanced technical leadership who could steer the course of agricultural industrialization.¹⁹⁴

Organized farmers, however, faced competitive pressures that threatened them with financial failure and loss of their independence in the marketplace. To protect themselves, they turned to college personnel for immediate answers regarding questions of the best yielding varieties and the most profitable breeds. They received the response that lasting solutions depended on the patient biological, physiological, and geological investigation that could discover the laws governing plant, animal, and soil development.¹⁹⁵ The farmers rebutted with the sentiment expressed by one of their fold at an 1882 meeting of the Wisconsin State Agricultural Society: "We do not want science floating in the skies," he proclaimed to those assembled, "we want to bring it down and hitch it to our plows."¹⁹⁶ They proceeded to lower it by requiring that the instructional provisions in the 1890 Morrill Act make direct "reference to their applications in the

industries of life."¹⁹⁷ And even the Hatch Act, which tendered the enlightened call "to conduct original researches," simultaneously met farmers' demands for diffusion of "useful and practical information on subjects connected with agriculture."¹⁹⁸

To college leaders, this "lowering" of science threatened their interest in forming a renowned leadership because it undermined their autonomy to advance the fundamental inquiry that grounded that formation. At the turn of the century two representatives of the USDA explained that "after the passage of the Hatch Act there was a large and sudden expansion of the amount of scientific and practical investigation along agricultural lines," but "it was soon found that the time was not ripe for the exclusive devotion of this fund to original research." Before it would be ready, much needed to be done "to diffuse among the farmers a large amount of compiled information" that would put them "in a position to understand and utilize the more scientific work of the stations."¹⁹⁹ Farmers, in other words, needed to be sufficiently professionalized to facilitate their respect for New-Class ideals of building an autonomous and enlightened agricultural vanguard.²⁰⁰ In sum, although emissaries of both classes shared a high estimation of individual freedom, a contradictory breach opened between the market-oriented and laboratory-centered ways they proposed to exercise it.

During the 1880s and 1890s the contradiction mounted in struggles over whether to unite agriculture with state universities or to separate it in agricultural and mechanical colleges. On one side, organized farmers feared the former path would result in a centralization of instruction that would strip them of the power

to ensure that the land-grant mission focused on practical husbandry. On the other side, many collegiate agriculturists insisted that centralizing agriculture in universities promised to bring students in contact with first-rate intellectuals who could transform them into an equally first-rate leadership. Notably, farmers created political strength that removed agriculture from universities in South and North Carolina; and they raised serious yet unsuccessful attempts to do the same in California, Wisconsin, and Missouri.²⁰¹

Developments at the University of Minnesota afforded a principal example of how the struggle over separation could be resolved without jeopardizing institutional cohesion. By 1887 Grangers, members of the State Horticultural Society, and others besieged the legislature with appeals to divorce agriculture from the University -- for the reason, in their view, that agricultural appropriations frittered away in aimless theorizing. University leaders countered with their chief argument that in the event of separation the departing students would be deprived of access to the best facilities of curriculum, laboratory, and library. Apparently finding both positions convincing, at first legislators deferred any final action. Before legislators acted, University officials, with the assistance of prominent Grangers, orchestrated a brilliant maneuver to defuse the discontent of farmers.²⁰²

The officers, in the husbandmen's parlance uttered by a contemporary, proposed establishing a "right-down-regular-regular-regular" School of Agriculture.²⁰³ Distinguishing it from the College of Agriculture which offered a four-year program, they conceived of the School as offering a two-year course that

emphasized practical study on the secondary level. The shorter program would accommodate farmers' seasonal pressures by opening in mid-October and closing in mid-April. It would also feature manual labor. Legislators eventually embraced the secondary idea. For their part, though not entirely happy with the arrangement, in following years farmers never protested loudly for separation as they had prior to the School's initiation. In a word, the School of Agriculture represented an ingenious plan to allow New-Class instruction to proceed in the College while simultaneously meeting middle-class demands with a detached secondary unit. This dual pursuit signalled preservation of the unity of the University organization.²⁰⁴

The Minnesota resolution stood out as a reconciliation of class tensions that college leaders almost universally admired, and it sent them searching for a comparable design, a generally applicable prescription, that could be adapted across the country. None of the helmsmen experienced exemption from the class contradiction that conditioned the need to make each agricultural division a "dual-purpose cow" -- able to further the cause of practicality as well as that of scholarship.²⁰⁵ A nationwide solution awaited the twentieth century.

The Vertical Turn

By the 1890s the college leadership brooded over a nation of "Go-Getters," a place where virtually anyone could raise an individual obsession to the plateau of social virtue. Among the dangerous consequences that they deduced from this individualistic fervor, leaders pointed to a reckless dissipation of soil fertility as the care of the earth was sacrificed to the aim for immediate profits.²⁰⁶

Speaking for many of them in 1895, Alfred True expanded on their concern about "a period of perpetual change and motion" in which "'hustle' seems to be the highest virtue, and it is well-nigh impossible to make men see that 'haste makes waste.'" He added that "one might imagine from current newspaper talk that many among us believe that our nation's fate is trembling in the balance all the time and that total destruction may come with any passing strike." In this climate, he concluded, too many Americans felt compelled to give their lives to transient, impermanent purposes: "'Act in the living present' is the only motto that seems worth regarding."²⁰⁷

In the search for a path out of the turbulent 1890s, leaders seized on a "progressive" solution for disorder. In 1893 Charles Kendall Adams, president of the University of Wisconsin, called for efficient administrative regulation of the decade's contending groups. He maintained that such service would ameliorate the tribulations of "advancing civilization." If given comprehensive regulatory oversight, nonpartisan experts might well resolve difficulties by treating them as a "business crisis where prudence requires a careful examination of the securities and title deeds."²⁰⁸ A year later, President Andrew Draper of Illinois intoned that centralizing efforts met the needs of people "all over the land" who "are thirsting for a management which is rational."²⁰⁹ These proclamations sought social stability in a policy that centralized authority and rationally ordered competing interests. They expressed the vertical or hierarchical principles of professionalism.²¹⁰

Although the leadership jealously guarded their own institutions from excessive intrusions of federal authority,²¹¹ they shared the New-Class determination to surpass America's historic localism. After the turn of the twentieth century, for example, Bailey of Cornell sounded against the farmers' individualism that "conduces to isolation of ideas." This exclusion of the wider society produced a "centrifugal" pattern of behavior during an age when the country required a coordinated, "centripetal" policy to address such national concerns as the retention of soil fertility.²¹²

Bailey hoped, as he would throughout the early decades of the new century, to unite agrarian independence with centralizing tendencies. The union involved "questions of adjustment between the self-help and the state-help forces as expressed in the complex terms of present society." He continued: "One force works from the inside outward, the other from the outside inward. Both are essential." But he observed the ascent of "nationalism" to higher priority. It represented "a new type of mind," and farmers needed to accommodate its irresistible momentum.²¹³

The mid-1890s provided an occasion for leaders to signal collegiate adjustment. In 1893 the Secretary of Agriculture, Julius Morton, reported to Congress that the Hatch Act did not sufficiently enable him "to direct, limit, control, or audit its itemized expenditure." He claimed he should "have the power to direct and to restrain the disbursements of the Government moneys in each of the experiment stations of the United States."²¹⁴ Congress conceded the point, and in the USDA appropriation act for 1895 the Secretary received

authorization to prescribe the form called for in the Hatch mandate that "each of said stations annually . . . make . . . a full and detailed report of its operations, including a statement of receipts and expenditures."²¹⁵ The Secretary also acquired the accompanying authority to use administrative visitation as a device for ensuring station compliance with Hatch provisions regarding permissible expenses. The OES assumed responsibility for executing the new policy.²¹⁶

Observers in the USDA noted that the expanded audit powers "led to much closer relations between the Department and the stations than had hitherto existed."²¹⁷ College leaders, meanwhile, issued an AAACES resolution "heartily" favoring the expansion and eagerly embracing "the closest scrutiny of the work of the stations."²¹⁸ Favor came from both Association and Departmental leadership because each viewed increased national supervision as the way to sanction the bend of Hatch expenditures toward "original researches," and away from lower-grade investigations demanded by local constituents.²¹⁹

Later comments by E.A. Bryan pointed to the fortification that stemmed from collegiate disassociation from localism. He spoke of how leaders drew strength through being "tied together" by national laws that imbued them with a "national spirit" and "solidarity of interest" that transcended differences originating out of the peculiar conditions of particular states.²²⁰

That mutual dependence extended to concord with a growing USDA. Under the guidance of James Wilson, the Secretary of Agriculture from 1897 to 1913, the Department marked enlarging regulatory and research capacities through the formation of new bureaus devoted to plant industry, soils, chemistry, forestry,

entomology, and the like. Its number of employees grew from 2,444 in 1897 to 13,858 in 1912, while its budget increased from \$3.6 million to \$21.1 million.²²¹ In 1896, as these developments began to take hold, Charles W. Dabney, the Assistant Secretary of Agriculture, spoke to those assembled at the annual meeting of the AAACES. Noting that increasing numbers of scientists enrolled in the USDA, which now formed "primarily a scientific and technical institution," he assured college leaders that in time it would represent "a national university in fact, if not in name." He added a promising note for his collegiate listeners:

The relations between the Association . . . and the . . . Department . . . have always been quite intimate, and it is expected that this intimacy will increase from year to year. Through your agricultural experiment stations you are closely connected with the Department, whose scientific divisions constitute, in fact, a great central experiment station to assist and supplement your stations in many ways, while the Office of Experiment Stations acts as a clearing house for the results of their investigations. Hence our community of interest must be recognized by all.²²²

These words announced preparation for a large governmental extension of an administrative state that would act as an educator.

Looking Ahead

As the new century dawned, college leaders began to articulate the principles of a fresh order. Henry Prentiss Armsby of the Pennsylvania station used his 1899 presidential address to the AAACES to sound Enlightenment themes and the purpose of professionalizing farmers. It was "the function of the experiment station," he said, "to enlarge his [the farmer's] knowledge of the natural forces which drive his farm, as the steam drives the engine" and "to teach

him to control them instead of being controlled by them."²²³ Shortly afterward, W.J. Beal of Michigan echoed that farmers needed to be taught techniques for mastering particular enterprises -- orchards, truck crops, and livestock to name but some. He called attention to the skills and cost entailed in managing each and emphasized the corresponding necessity for specialization in one or the other. The age of the "general farmer," whose mixed activities served the cause of family independence, was not that of contemporary economic reality. Instead, "agriculture is destined in most neighborhoods to be divided and to be conducted by numerous experts in definite lines, after the manner of merchants and manufacturers."²²⁴

Others counselled a departure from the kind of entrepreneurial pattern which in 1876 led Lawson Valentine, a New York merchant, to establish a privately run experiment station at Houghton Farm in Orange County, New York. When Valentine died in 1888, his station (wholly dependent on his individual support) passed with him.²²⁵ Counter to such individualistic enterprise, True took a number of opportunities in the 1890s to appeal for "permanency in institutions."²²⁶ He especially desired this for agricultural research, because brief institutional duration undermined the long-term effort required for thorough investigations. As an example of the ideal residence for sustained inquiry, True referred to the corporations where manufacturers employed scientists. Corporate leaders, he insisted, perceived advantage in staying with a project until the day when it might "pay a thousand times over for all the expense which the chemist has caused."²²⁷

But was it possible to side both with the corporation and with the land-grant heritage of middle-class democracy? Further, in reference to the New-Class roots in that legacy, was it possible, as Turner had believed it was, to create an intellectual "nobility" who would not "domineer over and control us"? What, indeed, was democracy? Did it mean establishing ease of admission in the effort to level down to Jacksonian society's common or average person? Or did it signify a levelling up of entrance requirements in order that a meritorious few might govern a redirected liberalism? Or did it imply the distinctly Populist surge of popular self-determination? Seeking guidance through the thicket of difficult questions, at the turn of the century Whitman H. Jordan of the New York Agricultural Experiment Station invoked the wisdom of "the great clock of the universe."²²⁸ His invocation would turn out to be anything but exceptional.

Endnotes

¹Indiana Republican Congressman quoted in Eric Foner, Free Soil, Free Labor, Free Men: The Ideology of the Republican Party Before the Civil War (New York: Oxford University Press, 1970), 39.

²See *Ibid.*, ch. 1, p. 13.

³The triumph of the Northern middle class is discussed in Barrington Moore, Jr., Social Origins of Dictatorship and Democracy: Lord and Peasant in the Making of the Modern World (Boston: Beacon, 1966), ch. 3; while Lawrence A. Cremin, American Education: The National Experience, 1783-1876 (New York: Harper Colophon, 1980), ch. 11, pp. 311-318, explores the array of agencies that advanced a Protestant "*paideia*"; and Irvin G. Wyllie, The Self-Made Man in America: The Myth of Rags to Riches (New Brunswick: Rutgers University Press, 1954), ch. 3, pp. 22-23, describes the commitment to character and individual responsibility. For an extended treatment of variations both in the Alger stories and the work ethic, see Daniel T. Rodgers, The Work Ethic in Industrial America, 1850-1920 (Chicago: University of Chicago Press, 1978), 8-14, 140-141.

⁴Quoted in Rodgers, 35.

⁵Themes of classlessness are treated in Foner, 15-16, 19-20.

⁶Agrarian ideals are elaborated in Fred A. Shannon, The Farmers' Last Frontier: Agriculture, 1860-1897 (New York: Farrar and Rinehart, 1945), 52; Henry Nash Smith, Virgin Land: The American West as Symbol and Myth (Cambridge: Harvard University Press, 1950), ch. 15; and Richard Hofstadter, The Age of Reform: From Bryan to F.D.R. (New York: Vintage, 1955), 23-36.

⁷On producers versus speculators, see Foner, 11-12, 19-20.

⁸Wyllie, ch. 6; Daniel J. Boorstin, The Americans: The Democratic Experience (New York: Vintage, 1973), 534-537; and Hugo A. Meier, "Thomas Jefferson and a Democratic Technology," Technology in America: A History of Individuals and Ideas, ed. Carroll W. Pursell, Jr. (Cambridge: MIT Press, 1981), 17-33, discuss the celebration of inventors and useful knowledge. Fears of luxury were grounded in an erstwhile Puritanism. See John F. Kasson, Civilizing the Machine: Technology and Republican Values in America, 1776-1900 (New York: Penguin, 1976), 37-38.

⁹On the American use of Locke, see Louis Hartz, The Liberal Tradition in America: An Interpretation of American Political Thought Since the Revolution (New York: Harcourt Brace Jovanovich, 1955), 60-61.

¹⁰The values of a "producer culture" that expressed the "hegemonic role of liberal Protestantism" in an entrepreneurial society are described by T.J. Jackson Lears, No Place of Grace: Antimodernism and the Transformation of American Culture, 1880-1920 (New York: Pantheon, 1981), xiv, 4-26, particularly 24.

¹¹Here American entrepreneurial ideals were analogous to those delineated in C.B. Macpherson, The Political Theory of Possessive Individualism: Hobbes to Locke (New York: Oxford University Press, Clarendon, 1962), 51-53.

¹²Quoted in Cremin, 520-521.

¹³Antebellum data are from Foner, 31-33. The "Go-Getters" were those who discovered, invented, or profited amid the material development of the continent, as exemplified in the acquisition, transport, and marketing of oil by John D. Rockefeller ("a Go-Getter of heroic" dimensions). See Boorstin, 3-4, 49-52, particularly 49.

¹⁴Timothy Shay Arthur quoted in Wyllie, 19. Broadcast agencies that celebrated the self-made industrialists are discussed in Anthony F.C. Wallace, "The Industrialist as Hero: An Emerging Educational Theme in Nineteenth Century America," Educational Studies 12 (Spring 1981): 69-83.

¹⁵Good discussions of the import of efforts of industrialization and settlement are in Boorstin, 120-121; Rodgers, 19-24; and Robert Higgs, The Transformation of the American Economy, 1865-1914: An Essay in Interpretation (New York: Wiley, 1971), 80-81.

¹⁶Nineteenth-century localism receives classic treatment in Robert H. Wiebe, The Search for Order, 1877-1920 (New York: Hill and Wang, 1967), chs. 1-3 *passim*. The unregulated use of public lands in the 1870s and 1880s is detailed in Boorstin, chs. 1-3, p. 19; and the scramble to bend government to one's own purposes is noted in Ray Ginger, Age of Excess: The United States from 1877 to 1914 (New York: Macmillan, 1965), 20, 31.

¹⁷Sources for the last two paragraphs are detailed as follows: Willard W. Cochrane, The Development of American Agriculture: A Historical Analysis (Minneapolis: University of Minnesota Press, 1979), 201-202, 220, details the expansion of railroad track and the impact of other mechanization on agriculture; while Wiebe, 20-21; and Rodgers, 24-25, discuss the growth of factories. The influence of biochemical techniques and mechanical developments (especially reaping and binding machinery) on agriculture and farming is treated in John T. Schlebecker, Whereby We Thrive: A History of American Farming, 1607-1972

(Ames: Iowa State University Press, 1975), chs. 14-16, pp. 170-172, 186; and Siegfried Giedion, Mechanization Takes Command: A Contribution to Anonymous History (New York: Oxford University Press, 1948), 130-162. Farmers' experience with commercial interdependence receives classic treatment in Theodore Soloutos, "The Agricultural Problem and Nineteenth-Century Industrialism," Agricultural History 22 (July 1948): 156-174; but Higgs, 99, explains that this experience was most difficult for farmers in "newly settled areas."

¹⁸Sources for this sentence and the preceding paragraph are detailed as follows: Jacksonian temper, general incorporation laws, and formation of combinations of corporations are dealt with in Boorstin, 414-419; and a good discussion of corporate integration and the opportunity-based ideal is Glenn Porter, The Rise of Big Business, 1860-1910 (Arlington Heights: AHM, 1973), 43-71, 89-90. Distinction between horizontal experiments is drawn clearly by Wiebe, 24n.

¹⁹Speaking before the U.S. Industrial Commission (1898-1901) and quoted in Porter, 89-90.

²⁰Quoted in Foner, 22.

²¹Quoted in Ginger, 32.

²²On the extent of corporate corruption, see *ibid.*, 33-34; and Howard Zinn, A People's History of the United States (New York: Harper Colophon, 1980), 248-251.

²³The irony of the Sherman Act's centralized defense of "decentralized values" is noted by Hofstadter, Age of Reform, 233.

²⁴Frederick Jackson Turner, The Frontier in American History (1920; rpt., New York: Holt, Rinehart and Winston, 1947), 38, 37.

²⁵On overproduction, see Ginger, 157-159. Business failures and unemployment figures are recorded in Zinn, 271-272; and the path of farm prices (as related to overproduction) is available in Cochrane, 93-95.

²⁶Quoted in Ginger, 126.

²⁷On the origin of Populism and the Alliance's break from the practice of confining cooperative buying and selling to relatively advantaged middle-class strata, see Lawrence Goodwyn, Democratic Promise: The Populist Moment in America (New York: Oxford University Press, 1976), ch. 7, pp. 120-121, 138-139.

²⁸The initiation of the Alliance and number and spread of suballiances are detailed in *ibid.*, 25, 33-40, 86, 122. It should be noted, however, that the

suballiances -- the basic local units of the National Alliance -- contained teachers, preachers, and others besides farmers. See Lowell K. Dyson, Farmers' Organizations (New York: Greenwood, 1986), 201.

²⁹An excellent presentation of comparative data is in Robert L. Tontz, "Memberships of General Farmers' Organizations, United States, 1874-1960," Agricultural History 38 (July 1964): 145-150.

³⁰The emergence and substance of the Omaha Platform are treated at length in Goodwyn, Democratic Promise, 230, 264-267, 270-272; and Bruce Palmer, "Man Over Money": The Southern Populist Critique of American Capitalism (Chapel Hill: University of North Carolina Press, 1980), 69-125 *passim*. Populists contended that valid relations to land involved the use of it, not the speculative trading of it.

³¹Christopher Lasch, The New Radicalism in America, 1889-1963: The Intellectual as a Social Type (New York: Vintage, 1965), 88, notes that "cooperative commonwealth" was a designation with currency among all American radicals. In particular, James Green, "Populism, Socialism and the Promise of Democracy," Radical History Review, no. 24 (Fall 1980): 19, 21-22, explains that Socialists associated it with cooperative control of the means of production, but Populists usually limited its applicability to the means of distribution.

³²Quoted in Palmer, 23.

³³See Goodwyn, Democratic Promise, chs. 7, 11, pp. 323-343, particularly 325-326.

³⁴Atlanta People's Party Paper and Gracewood (Ga.) Wool Hat quoted in Palmer, 21, and see 234-235n. Populists thought of the middle class as "producers of tangible wealth" (p. 21).

³⁵See *Ibid.*, 21.

³⁶Quoted phrase in *Ibid.*, xiii. On liberal egalitarianism, see Kasson, 94; and Hartz, 119-128.

³⁷Goodwyn, Democratic Promise, 46, notes that the National Grange of the Patrons of Husbandry (hereafter referred to as Grange) exemplified faith in self-help. On corporate apologists and the cult of success, see Richard Hofstadter, Social Darwinism in American Thought, rev. ed. (Boston: Beacon, 1955), ch. 2; and Hofstadter, Age of Reform, 39-47. Wyllie, 3-4, observes that success meant many things to contemporaries, but no view of it enjoyed "such universal favor in America as that which equates success with making money" (p. 4).

³⁸Quoted in Norman Pollack, The Populist Response to Industrial America: Midwestern Populist Thought (Cambridge: Harvard University Press, 1962), 20.

³⁹Lincoln (Neb.) Farmers' Alliance quoted in *Ibid.*, 19.

⁴⁰Palmer, ch. 4, pp. 31-32, discusses Lockian-Jeffersonian principles in Populism; and Goodwyn, Democratic Promise, chs. 8, 13-16, pp. 142-172 *passim*, details the tear in Populism, the opposition of businessmen, and the decline resulting from reliance on the silver issue. For other factors that contributed to declining Populist fortunes, see n. 136 below.

⁴¹See Homer Clevenger, "The Teaching Techniques of the Farmers' Alliance: An Experiment in Adult Education," The Journal of Southern History 11 (November 1945): 504-518; and Goodwyn, Democratic Promise, ch. 12.

⁴²Quoted in Goodwyn, Democratic Promise, 381; and the democratic movement of Populism is neatly summarized in the abbreviated work by Lawrence Goodwyn, The Populist Moment: A Short History of the Agrarian Revolt in America (New York: Oxford University Press, 1978).

⁴³Halvor Harris quoted in Goodwyn, Democratic Promise, 360.

⁴⁴Quoted in Rodgers, 43.

⁴⁵Data on working conditions are recorded in Henry Pelling, American Labor (Chicago: University of Chicago Press, 1960), 81.

⁴⁶Quoted in Herbert G. Gutman, Work, Culture, and Society in Industrializing America: Essays in American Working-Class and Social History (New York: Vintage, 1976), 51, 52.

⁴⁷Strike details are in Jeremy Brecher, Strike! (Boston: South End Press, 1972), 31, 53-63, 69, 78-96.

⁴⁸Quoted in *Ibid.*, 82.

⁴⁹Enoch McGinness, one of the nineteenth century's noted manufacturers of steam engines, quoted in Wallace, 80.

⁵⁰On the popular embrace and then rejection of the industrialists, see Wyllie, 153-154; Wiebe, 110; and Hofstadter, Age of Reform, 65.

⁵¹On prospects and fears of revolution, see Ginger, ch. 8, particularly pp. 158, 169. Farm and working people were unable to mount a sustained revolutionary course. Internecine divisions along racial, ethnic, and other lines, helped to undermine the unity needed to complete a change of such magnitude. See

Goodwyn, Democratic Promise, chs. 10-11; and Gabriel Kolko, Main Currents in Modern American History (1976; rpt., New York: Pantheon, 1984), ch. 3.

⁵²Quoted in Brecher, 85.

⁵³Quoted in Wiebe, 92.

⁵⁴*Ibid.*, 35-36, 91-94, discusses late nineteenth-century presidential behavior; and Brecher, 63-78, 85-89, details the use of force to break strikes.

⁵⁵Quoted in Ginger, 57.

⁵⁶Wiebe, 112-113, 127, dates the takeoff of a "new middle class" whose distinctive training and skills marked their divergence from the old middle class, but his retention of the designation "middle" underplays the full extent of the former's departure (involving their capitalization of credentials) from the latter. Alvin W. Gouldner, The Future of Intellectuals and the Rise of the New Class (New York: Oxford University Press, 1979), 15-16, cites data on the New-Class population and does not understate their departure; and Donald Stabile, Prophets of Order: The Rise of the New Class, Technocracy and Socialism in America (Boston: South End Press, 1984), 7-10, 23-27, notes population figures, growth rates, New-Class importance in an industrializing society, and concurs with Gouldner on the extent of their distinction from the old middle class.

⁵⁷Quoted in Stabile, 22.

⁵⁸The struggle for professional protection from competitive vicissitudes is summarized in Eliot Freidson, "The Theory of Professions: State of the Art," The Sociology of the Professions: Lawyers, Doctors and Others, eds. Robert Dingwall and Philip Lewis (New York: St. Martins, 1983), 24. Burton J. Bledstein, The Culture of Professionalism: The Middle Class and the Development of Higher Education in America (New York: W.W. Norton, 1976), ch. 1, pp. 96, 106, notes the same theme and does not engage the subject of an economically distinct New Class, but instead refers to professionals as "middle class" because they shared a widespread consciousness that celebrated individualistic advancement. Gouldner, 19, 42, however, argues that professionalism legitimized the acquisition of a new form of capital (income derived from the capitalization of credentials), and hence fortified the emergence of a new economic class ("cultural bourgeoisie"). See the remainder of this section below. Laurence R. Veysey, The Emergence of the American University (Chicago: University of Chicago Press, 1965), 355-356, observes the slogan-like quality of professionalism.

⁵⁹If one considered a profession to be a licensed, full-time undertaking in a technical field, then plumbing could become a profession. The tendency, however, was to so restrict professionalism to the acquisition of advanced, specialized, and esoteric knowledge that such inclusiveness would be difficult to

sustain. See Walter P. Metzger, "What Is a Profession?" College and University 52 (Fall 1976): 46-54, particularly 46-47.

⁶⁰This paragraph's description of professional training and skills is adapted from Bledstein, 86-87; and Wiebe, 112-113. Freidson, 36, notes that any discussion of professionalization must specify what distinguishes it from other attempts to enhance an occupation. Since efforts to increase income, job security, and the like, are characteristic of any occupation, the author refers the reader to the professional principles mentioned in the text below. These give professions their distinctive stamp.

⁶¹On the number of associations, see Bledstein, 86.

⁶²*Ibid.*

⁶³Quoted in *Ibid.*, 85.

⁶⁴Quoted in *Ibid.*, 171-172; and tests of achievement are detailed on p. 94.

⁶⁵Quoted in *Ibid.*, 292; and service is highlighted on pp. 87-92, particularly 92.

⁶⁶Gouldner, 3, 28-29, speaks of New-Class idiom in terms of a "culture of critical discourse" that raises context-free generalizations above "context-limited meanings" (p. 28). Impersonality flows from detachment from the discourse of any particular locality. Bledstein, 86, 88-90, 195-196, notes the significance of association names and the nineteenth-century rise of the professional's divorce from the experiential.

⁶⁷Quoted in Bledstein, 284.

⁶⁸See *Ibid.*, 105-120, for discussion of the professional's "vertical vision" of American society as an escalator for those with ambition and scientific training, a vision that implied centralized control of knowledge and corresponding condescension toward those with fewer credentials, i.e. the less meritorious.

⁶⁹On the various kinds of representatives, see *Ibid.*, 138, 273; and Wiebe, 118.

⁷⁰The discussion of the educational ladder is adapted from John S. Brubacher and Willis Rudy, Higher Education in Transition: A History of American Colleges and Universities, 1636-1976, 3rd ed. (New York: Harper, 1976), 241-256.

⁷¹Wiebe, 121, notes the function of the universities; while Veysey, 173; and Frederick Rudolph, The American College and University: A History (New York:

Vintage, 1962), 334-336, observe the rise of graduate schools and the Ph.D. degree.

⁷²Quoted in Rudolph, 397; and Veysey, 176, notes the role of the Ph.D. in securing permanent appointments.

⁷³Gouldner, 21-27, addresses the issue of New-Class claims on income, i.e. their "cultural capital." See nn. 56 and 58 above. Faculty credentials and university departmentalization are explicated in Bledstein, 277; Rudolph, 395-408; and Veysey, 176-177, 302, 319.

⁷⁴Quoted in Wyllie, 103.

⁷⁵*Ibid.*, 35-36, 94-101, 155-157, discusses the "average man's" moral-practical outlook and the reminder against egalitarianism.

⁷⁶Quoted in Veysey, 13-14.

⁷⁷See Richard Hofstadter, Anti-Intellectualism in American Life (New York: Knopf, 1963).

⁷⁸Quoted in Bledstein, 323.

⁷⁹German-inspired researchers are discussed in Veysey, ch. 3; and Jefferson's natural aristocracy is described in Clarence J. Karier, ed., Shaping the American Educational State: 1900 to the Present (New York: Free Press, 1975), 127-129.

⁸⁰Intellectual seasoning is suggested in Bledstein, 87-89, 134-182 *passim*.

⁸¹Quoted in Karier, 127.

⁸²The primacy of money is noted in Wyllie, 3-6.

⁸³See ch. 1, n. 4 above.

⁸⁴See ch. 1, sec. 1 above.

⁸⁵The prominence of business leaders as trustees is noted in Brubacher and Rudy, 363-364; and the academic freedom cases are mentioned in Walter P. Metzger, Academic Freedom in the Age of the University (New York: Columbia University Press, 1955), 145-147. The cases are addressed from the vantage point of social scientists in Edward T. Silva and Sheila Slaughter, "Prometheus Bound: The Limits of Social Science Professionalization in the Progressive Period," Theory and Society 9 (November 1980): 788-789.

⁸⁶Joseph Ben-David, American Higher Education: Directions Old and New (New York: McGraw-Hill, 1972), 26-29, particularly 27. Silva and Slaughter, 789, explain that the academic freedom cases showed "the sticks available for social control." The subsequent development of this freedom is treated by Metzger, Academic Freedom, 123-138.

⁸⁷Sources for the last two paragraphs are detailed as follows: Philanthropic data and the reciprocal need of the classes for each other are given and suggested in David N. Smith, Who Rules the Universities? An Essay in Class Analysis (New York: Monthly Review Press, 1974), 73, 80-81; Brubacher and Rudy, 185; and Veysey, 3. Veysey, pt. 1, captures the variation of the university movement from its classical predecessor; while D.N. Smith, 74-78; and Rudolph, 281, provide excellent commentary on the elective system and the array of American universities. Further, accommodation to the middle class might be expected in a society characterized by the determining pressure of "market and market-related forces" noted in Martin Trow, "American Higher Education: Past, Present, and Future," Educational Researcher 17 (April 1988): 15.

⁸⁸Franklin B. Sanborn quoted in Silva and Slaughter, 797; and the corporate employment of graduates is noted in Wyllie, 108-109.

⁸⁹Quoted in Wyllie, 108.

⁹⁰Quoted in *Ibid.*, 112.

⁹¹See Silva and Slaughter, 795-799.

⁹²Quoted in *Ibid.*, 796.

⁹³Compare this language to the "bureaucratic ideas" explored by Wiebe, 145-146, 153.

⁹⁴Quoted in Merle Curti, The Social Ideas of American Educators: With New Chapter on the Last Twenty-Five Years (1935; rpt., Totowa: Littlefield, Adams, 1959), 231.

⁹⁵Stabile, 11, 25, explains that "technical" professionals such as engineers emphasized rationalization of the organizations they worked for; while "social" professionals such as journalists stressed broader societal reform. Both groups, however, shared a desire for new ventures in administrative planning. See the related distinction between humane and parsimonious reformers in Wiebe, 154-155.

⁹⁶See the related discussion of "bureaucratic professionalism," an approach to government that emphasized federally and otherwise centralized solutions for social discord, in Wiebe, 152, 160-163.

⁹⁷Stephen Skowronek, Building a New American State: The Expansion of National Administrative Capacities, 1877-1920 (Cambridge: Cambridge University Press, 1982), ch. 5, particularly pp. 124-134, 150-162, explains that professionals on the ICC struggled mightily to sufficiently detach themselves from private parties, so that they could adjust railroad interest in "monopolistic" pricing to that of some shippers who delighted in rate wars; while Samuel P. Hays, Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920 (1959; rpt., New York: Atheneum, 1980), ch. 3, pp. 271-272, 275, details the educational efforts of federal forestry experts to get lumber companies to practice sustained-yield forest management (keeping a year's harvest in balance with a year's growth). Those professionals believed in a "rational and scientific method of making basic technological decisions through a single, central authority" (p. 271).

⁹⁸Stabile, 12.

⁹⁹Hartz, 217, notes the label. Skowronek, 129, points, in particular, to railroad leaders who desired regulatory relief from ruinous competition; and Silva and Slaughter, 796-798, imply that corporate leaders found regulation that might occasionally work against them preferable to challenges that would entirely disestablish them.

¹⁰⁰Under the Commerce Act, carriers could at first set a rate; but if ICC review found it unreasonable, then the Commission acted on the assumption that it was authorized to establish a reasonable rate for the future. Late in the 1890s the Court reversed this ICC power. The reversal, traditional government, and the provisions of the Act are discussed in Skowronek, ch. 2, pp. 126-160, particularly 137-139, 156-157.

¹⁰¹Quoted in *Ibid.*, 160-161.

¹⁰²His retrospective comments of 1909, quoted in David Tyack and Elisabeth Hansot, Managers of Virtue: Public School Leadership in America, 1820-1980 (New York: Basic Books, 1962), 109.

¹⁰³The text of the Morrill Act can be found in numerous documents. Here it is quoted in OES, Report (1902), 225. In the quotation the word liberal connotes a general broadening of the mind as against narrow professional specialization. This meaning should be distinguished from that defined in ch. 1, sec. 1 above.

¹⁰⁴Vernon Carstensen, "A Century of the Land-Grant Colleges," Journal of Higher Education 33 (1962): 33, 35, provides a general survey and periodization of the struggle with the obstacles; while Earle D. Ross, "The Land-Grant College: A Democratic Adaptation," Agricultural History 15 (January 1941): 29-30; and Earle D. Ross, Democracy's College: The Land-Grant Movement in the Formative

Stage (Ames: Iowa State College Press, 1942), 96-112, detail the vagueness of the Morrill Act, its classical misuse, the opposition of farmers' organizations, and the insufficiency of trained experts.

¹⁰⁵On financial difficulties and low enrollments, see Whitney H. Shepardson, Agricultural Education in the United States (New York: Macmillan, 1929), 25-30. On business use of the land provisions, see Robert A. Sauder and Rose M. Sauder, "Regional Variations in Land Alienation: The Agricultural College Act of 1862," Journal of Historical Geography 12 (1986): 365-378; but, respecting that use, one should not overlook the classic investigation by Paul W. Gates, The Wisconsin Pine Lands of Cornell University (Ithaca: Cornell University Press, 1943).

¹⁰⁶Carstensen, "A Century of the Land-Grant Colleges," 34, notes the response of organized farmers to industrialization; while Eugene Davenport, "Scientific Farming," The Annals of the American Academy of Political and Social Science 40 (March 1912): 46-47, stresses the role of chemists. Edward Danforth Eddy, Jr., Colleges for Our Land and Time: The Land-Grant Idea in American Education (New York: Harper, 1956), 96, highlights Colman's contribution to the push for station legislation; and Ross, Democracy's College, 141-144, offers an excellent description of the import of the Hatch Act. The author treats stations attached to the land-grant institutions and those organized separately in various states as main stations. The latter antedated the Hatch Act, provided its framers with important examples of successful research agencies, and in some instances remained as separate state organizations after the Act's passage. Though distinct from their land-grant counterparts, they were related to them as components of the same general effort in agricultural investigation. Both were distinct from outlying "branch stations." See L.H. Bailey, ed., Farm and Community, vol. 4 of Cyclopedia of American Agriculture, 5th ed. (New York: Macmillan, 1917), 422-424. The 1898 datum (exclusive of branch stations) is from Charles W. Dabney, Agricultural Education, ed. Nicholas Murray Butler, Monographs on Education in the United States, no. 12 (Albany: J.B. Lyon, 1904), 51.

¹⁰⁷The Babcock test is described in Schlebecker, 184.

¹⁰⁸Quoted in Allan Nevins, The State Universities and Democracy (Urbana: University of Illinois Press, 1962), 87-88.

¹⁰⁹On the Act of 1890 and its spur to increased involvement by state legislatures, see Eddy, 101-104; and Shepardson, 32-33.

¹¹⁰On the importance of engineering to industry and on the struggle to surpass restrictions of the name mechanic arts to farm mechanics and trade skills, see Earl F. Cheit, The Useful Arts and the Liberal Tradition (New York: McGraw-Hill, 1975), 60-61. The pattern of respective enrollment is detailed in I.L.

Kandel, Federal Aid for Vocational Education: A Report to the Carnegie Foundation for the Advancement of Teaching, no. 10 (Boston: Merrymount Press, 1917), 101-103.

¹¹¹Increases in students and faculty are noted in Eddy, 85-86; and the stated figures are from Dabney, 45. The typology of the institutions is constructed in A.C. True, "Some Types of American Agricultural Colleges," USDA, Year (1899): 63-64. True explains that in Massachusetts "two-thirds of the land-grant fund of 1862 and of the annual appropriation made to Massachusetts by Congress under the Morrill Act of 1890 are given to this [Massachusetts Agricultural] college, the remaining third going to the Massachusetts Institute of Technology" (p. 64).

¹¹²An excellent summary of the literature is in Peter Hopkins Fitzgerald, "Democracy, Utility, and Two Land-Grant Colleges in the Nineteenth Century: The Rhetoric and the Reality of Reform" (Ph.D. diss. Stanford University, 1972), ch. 2.

¹¹³Quoted in *Ibid.*, 8; and see Herman R. Allen, Open Door to Learning: The Land-Grant System Enters Its Second Century (Urbana: University of Illinois Press, 1963), 1-5.

¹¹⁴On the agricultural societies, see Lowell K. Dyson, Farmers' Organizations (New York: Greenwood, 1986), 1-2; and Wayne D. Rasmussen, ed., Readings in the History of American Agriculture (Urbana: University of Illinois Press, 1960), 41-45, 51-52, 54-55. Low enrollments are treated in Eldon L. Johnson, "Misconceptions About the Early Land-Grant Colleges," Journal of Higher Education 52 (1981): 336-342.

¹¹⁵Eugene Davenport, "History of Collegiate Education in Agriculture," SPAS, Proc. (1907), 45.

¹¹⁶An incisive summary of Turner's background, ideology, and influence is in Charles Burgess and Merle L. Borrowman, What Doctrines to Embrace: Studies in the History of American Education (Glenview: Scott, Foresman, 1969), 51, 53-56, particularly 56. Milton Schwebel, "Pluralism and Diversity in American Higher Education," The Annals of the American Academy of Political and Social Science 404 (November 1972): 90-91, considers Turner's role in land-grant popularization to have been a retreat from collegiate and university autonomy.

¹¹⁷Jonathan Baldwin Turner, interview with Eugene Davenport, ed. Bailey, Farm and Community, 409.

¹¹⁸See Burgess and Borrowman, 52, 53-54, 56.

¹¹⁹The Illinois locations of the address are mentioned in Mary Turner Carriel, The Life of Jonathan Baldwin Turner (1911; rpt., Urbana: University of Illinois Press, 1961), 68-69.

¹²⁰Quoted in *Ibid.*, 69.

¹²¹Quoted in *Ibid.*, 69, 70 [emphasis in original].

¹²²Quoted in *Ibid.*, 72-73, 76, 78 [emphasis in original].

¹²³See Rasmussen, 110.

¹²⁴Quoted in *Ibid.*, 111.

¹²⁵Disagreement reigns regarding whether Morrill or Turner originated the "land-grant idea." Partisans of one or the other tend to make claims based on whom they most admire. See American Association of Land-Grant Colleges and State Universities, Land-Grant Fact Book: Centennial Edition (Washington: Centennial Office of the Association, 1962), 6. For a partisan of Turner, see Edmund J. James, The Origin of the Land-Grant Act of 1862 (the So-Called Morrill Act) and Some Account of Its Author, Jonathan B. Turner (Urbana: University of Illinois Press, 1910), 8. Davenport, "History of Collegiate Education," 50-52, reports that the issue is probably moot -- owing to the loss of much of Turner's correspondence with Morrill.

¹²⁶Land-grant adaptation to the creed of productive self-help is discussed in Mary Jean Bowman, "The Land-Grant Colleges and Universities in Human-Resource Development," The Journal of Economic History 22 (December 1962): 523-546, particularly 544-546; and Ross, Democracy's College, 17-18, 148.

¹²⁷W.J. Kerr, "The Spirit of the Land-Grant Institutions," Kerr et al., The Spirit of the Land-Grant Institutions: Addresses Delivered at the Forty-Fifth Annual Convention of the Association of Land-Grant Colleges and Universities Held at Chicago, Illinois, 16 Nov. to 18 Nov. 1931 (N.p.: The Association, n.d.), 12-18, 19.

¹²⁸Jefferson quoted in Kasson, 16. On the Party's commitment to the yeoman, see H.N. Smith, 166-168; and Foner, 27-29.

¹²⁹See Rudolph, 265; and Ross, "Land-Grant College," 29.

¹³⁰S.A. Knapp, "Causes of Southern Rural Conditions and the Small Farm as an Important Remedy," USDA, Year (1909): 314-315. On Knapp's biographical background, see ch. 3, sec. 4 below.

¹³¹Quoted in Malcolm Moos, "The Future of the Land Grant University: The University of Maryland Report," Change, May/June 1982: 32.

¹³²E.A. Bryan, "The Spirit of the Land-Grant Institutions," Kerr et al., 39, 36, 47.

¹³³The location of the College, Kansas climate, and experimental beginnings are detailed in C. Clyde Jones, "An Agricultural College's Response to a Changing World," Agricultural History 42 (October 1968): 284-285; and the remainder of the points in the paragraph are from Julius Terrass Willard, History of the Kansas State College of Agriculture and Applied Science (Manhattan: Kansas State College Press, 1940), chs. 3-4, pp. 6-17, 59-80, 543 *passim*.

¹³⁴James C. Carey, Kansas State University: The Quest for Identity (Lawrence: Regents Press of Kansas, 1977), 77.

¹³⁵Farmers' demands and the collegiate response are described in Jones, 283-285, 288-289. On the Grange-manner of emphasis on self-help, see n. 37 above.

¹³⁶Details on the rise of Populists and their influence at Kansas State are presented most thoroughly in Carey, 69-74, 77. More abbreviated but still useful are Willard, 93-98; and Jones, 287-288. Kansas Populists did not achieve governmental power on their own, nor did they enjoy internal harmony while in control. Fusion with Democrats aided their rise but it also estranged their "radical" faction who disdained compromise with one of the major parties. Further division within Populist ranks stemmed from disagreement over the issues of free silver, women's suffrage, and temperance. See Scott G. McNall, The Road to Rebellion: Class Formation and Kansas Populism, 1865-1900 (Chicago: University of Chicago Press, 1988), chs. 5, 8, p. 256.

¹³⁷Willard, 101.

¹³⁸Fairchild's counsel is reported in Carey, 69.

¹³⁹Quoted in *Ibid.*, 78.

¹⁴⁰Quoted in *Ibid.*, 70.

¹⁴¹Hoffman's position is recorded in *Ibid.*, 73.

¹⁴²Quoted in *Ibid.*, 76.

¹⁴³See, for example, Metzger, Academic Freedom, 150-151.

¹⁴⁴On the upgrading of the faculty, see Carey, 75-76, 85; and data on graduate enrollments are from Willard, 112.

¹⁴⁵Shannon, 276.

¹⁴⁶For the conception of the word radical that is in play here, see ch. 1, n. 43 above. Generally, the New Class favored efforts of radical reconstruction that moved in a top-down fashion, and that relied on their own elite expertise. See nn. 95, 97, and 98 above.

¹⁴⁷On the opponents of Populism, see Carey, 70-71, 78-79. Actually, Socialists emphasized cooperative control of the means of production. Populists, on the other hand, focused on distribution. The happenings at Kansas State, then, did not constitute socialism. See n. 31 above.

¹⁴⁸Quoted in Carey, 78.

¹⁴⁹Quoted in Nevins, 72.

¹⁵⁰E.A. Bryan, Discussion, AAACES, Proc. (1910), 60.

¹⁵¹See n. 136 above for reference to internal division as a source of Populist weakness.

¹⁵²On the end of Populism at Kansas State, see Carey, 79-83.

¹⁵³The idea of a vertical orientation is borrowed from Bledstein. See n. 68 above.

¹⁵⁴Wilson Smith, "'Cow College' Mythology and Social History: A View of Some Centennial Literature," Agricultural History 44 (July 1970): 306-307, explains that Turner allied with businessmen out of respect for utilitarian pursuits. At the same time, however, he wished to infuse those undertakings with the highest intellectual capability.

¹⁵⁵Quoted in Carriel, 77.

¹⁵⁶Quoted in *Ibid.*, 78.

¹⁵⁷William C. Havard, "Political Education: Who Gets What, When, How and Why," The Journal of Politics 42 (November 1980): 940-941, notes that the land-grant divisions of agriculture and the mechanic arts were true children of the Enlightenment. This inheritance inclined them toward a politics that emphasized "the exploitation of techniques of social control" (p. 940). The aim to perfect the world depended, that is, on ever exaggerated attempts, first, to conquer nature

and, second, to regulate the conquerors. Havard's political point assumes greater significance as the narrative proceeds.

¹⁵⁸Sources for this sentence and the preceding paragraph are detailed as follows: The consequences of availability and then of depletion of new land, the development of steam tractors, and the work of college scientists are discussed in Cochrane, 92, 196, 201-202, 341-342; and Schlebecker, ch. 15, observes competitive pressures and ways of getting greater returns from land and labor. Davenport, "Scientific Farming," 45-49, is particularly instructive on the issues of minimum capital investment and soil fertility.

¹⁵⁹A.C. True, Agricultural Experiment Stations: Their Objects and Work, OES, Bulletin no. 26 (1895), 8.

¹⁶⁰This statement might be read as an embroidery. It is not. See the following discussion of the New Class in the agricultural colleges.

¹⁶¹Perhaps the best treatment of professionalism in land-grant history is Joland Ethel Mohr, "Higher Education and the Development of Professionalism in Post-Civil War America: A Content Analysis of Inaugural Addresses Given by Selected Land-Grant College and University Presidents, 1867-1911," 2 vols. (Ph.D. diss., University of Minnesota, 1984).

¹⁶²The collegiate relationship to Jeffersonian aspirations is considered in W. Smith, 304; and trust in science in the general -- including agricultural -- efforts to raise standards is treated in Mohr, 1: pp. 99-106; and 2: pp. 203-315 *passim*.

¹⁶³Quoted in Mohr, 2: p. 200.

¹⁶⁴W.O. Thompson, "The Mission of the Land-Grant Colleges," AAACES, Proc. (1904), 93.

¹⁶⁵See Mohr, 2: pp. 231-239.

¹⁶⁶Folwell's trace is described in *Ibid.*, p. 205.

¹⁶⁷Quoted in Frederick B. Mumford, The Land Grant College Movement, University of Missouri, College of Agriculture, Agricultural Experiment Station, Bulletin no. 419 (Columbia: University of Missouri, 1940), 46.

¹⁶⁸Eugene Davenport, "Subdivision of Agriculture for Purposes of Instruction and Research," SPAS, Proc. (1901), 161, 160. Mohr, 2: pp. 277-278, 352-353, explains that presidents often favored further specialization. Cautionary opposition, however, came from President J.K. Patterson, "General Drift of Education at the Land-Grant Colleges," AAACES, Proc. (1901), 102.

¹⁶⁹See Mohr, 2: pp. 323-324, 350.

¹⁷⁰Eugene Davenport, "The Spirit of the Land-Grant Institutions," Kerr et al., 34, 31.

¹⁷¹See the still useful Joseph Schafer, The Social History of American Agriculture (New York: Macmillan, 1936), ch. 5.

¹⁷²True, Agricultural Experiment Stations, 14.

¹⁷³Gouldner, 26, notes that "increased income reflects the capital value of increased education."

¹⁷⁴On the meetings, see Richard A. Hatch, ed., An Early View of the Land-Grant Colleges: Convention of Friends of Agricultural Education in 1871 (Urbana: University of Illinois Press, 1967), vii-xv; and Milton Conover, The Office of Experiment Stations: Its History, Activities, and Organization, U.S. Institute for Government Research, Service Monograph no. 32 (Baltimore: Johns Hopkins Press, 1924), 34.

¹⁷⁵Quoted in Mumford, 79.

¹⁷⁶See Alfred Charles True, A History of Agricultural Education in the United States, 1785-1925, U.S. Department of Agriculture, Miscellaneous Publication no. 36 (Washington: GPO, 1929), 210.

¹⁷⁷Eddy, 109-111, captures the changing emphasis of the Association. A.C. True, "Agricultural Experiment Stations in the United States," USDA, Year (1900): 531; and Thomas F. Hunt, "Organized Effort for the Promotion of Agriculture," SPAS, Proc. (1908), 29-31, note the associations populated by station scientists.

¹⁷⁸The nationalizing purpose of the Association is indicated in Hatch, xiv.

¹⁷⁹For the details on the formation of the Office, see Conover, 45, 47-48, 71.

¹⁸⁰Quoted in *Ibid.*, 46.

¹⁸¹See *Ibid.*, 52.

¹⁸²The text of the Hatch Act can be found in numerous documents. Here it is quoted in OES, Report (1902), 227.

¹⁸³The scope of the Office is described in Conover, 59-85; and True, History of Agricultural Education, 210, notes its voting role.

¹⁸⁴The successive leadership of the OES is discussed in Conover, 43, 52-58.

¹⁸⁵Quoted in Editorial, ESR 33 (1916): 4. The Farmers' Bulletin and Experiment Station Record are characterized in True, "Agricultural Experiment Stations in the United States," 527-528.

¹⁸⁶This cosmopolitanism can be inferred from True, "Agricultural Experiment Stations in the United States," 527-528.

¹⁸⁷Shannon, 280.

¹⁸⁸H.C. White, "The Experiment Stations," AAACES, Proc. (1913), 85, 86.

¹⁸⁹Bailey's insistence is in Nevins, 86-87; and Eddy, 88, discusses the pattern of specialization.

¹⁹⁰The Morrill Act and efforts to achieve scholarly repute in the face of pressures for the reverse are discussed in Dabney, 22-24; Mumford, 27-30; and George H. Callcott, A History of the University of Maryland (Baltimore: Maryland Historical Society, 1966), 174.

¹⁹¹Philadelphia (Penn.) Rural Advertiser quoted in Ross, Democracy's College, 90-91.

¹⁹²On the opposing positions involved here, cf. both the distinction between "broad gauge" scientists and "narrow gauge" pragmatists in *Ibid.*, 87-91; and the slippery demarcation between "scientific agriculturists" who encouraged laboratory experimentation and the "systematic farming advocates" who stressed experience, in Alan I. Marcus, Agricultural Science and the Quest for Legitimacy: Farmers, Agricultural Colleges, and Experiment Stations, 1870-1890 (Ames: Iowa State University Press, 1985), 25-26. Notably, the admixture of physiocratic agrarianism (the view that independent farmers are the basis of civilized life) in the liberal tradition fueled the division by maintaining that relation to the land was more important than relation to science. For suggestions to this effect, see Richard S. Kirkendall, "The Agricultural Colleges: Between Tradition and Modernization," Agricultural History 60 (Spring 1986): 4-7.

¹⁹³Quoted in Callcott, 174 [emphasis in original].

¹⁹⁴Manual labor stressed a schooling that approximated actual working environments. It conformed to the middle-class emphasis on industry, punctuality, and the rest of the individualistic character traits embedded in the work ethic. On these features and the timing of its declining support among college leaders, see Mumford, 54-57; Bailey, Farm and Community, 442; and Arthur G. Wirth, Education in the Technological Society: The Vocational-Liberal Studies Controversy in the Early Twentieth Century (Scranton: Intext Educational Publishers, 1972), 7-8. Wirth, 8, notes that college helmsmen aimed to shift "from

narrowly practical programs for the 'industrial classes' to a new emphasis on programs for technically competent leaders."

¹⁹⁵On these contrasting aims for research, see Mumford, 93; and Vernon Carstensen, "The Genesis of an Agricultural Experiment Station," Agricultural History 34 (January 1960): 18.

¹⁹⁶Quoted in Carstensen, "Genesis of an Agricultural Experiment Station," 18.

¹⁹⁷The text of the Morrill Act of 1890 can be found in numerous documents. Here it is quoted in OES, Report (1902), 228. The influence of organized farmers on the law is noted in Eddy, 101.

¹⁹⁸Quoted in OES, Report (1902), 226. The role of organized farmers in shaping the Act can be inferred from Eddy, 95, 97. For a discussion of what may be called this dual purpose in the Act, see Thomas F. Hunt, "What Is Research?" SPAS, Proc. (1906), 22-25.

¹⁹⁹A.C. True and V.A. Clark, The Agricultural Experiment Stations in the United States, OES, Bulletin no. 80 (1900), 53.

²⁰⁰We can infer from Earle D. Ross, "The Great Triumvirate of Land-Grant Educators," Journal of Higher Education 32 (1961): 480-482, 488, that such ideals prevailed foremost at agricultural colleges attached to universities. Moreover, following Alan I. Marcus, "The Ivory Silo: Farmer-Agricultural College Tensions in the 1870s and 1880s," Agricultural History 60 (Spring 1986): 28-29, it is apparent that college leaders grasped their superior professionalization -- the capacity to produce rather than merely consume specialized knowledge -- as an opportunity to relate to farmers as "a dependent caste" (p. 29).

²⁰¹The respective positions involved in the separation issue are treated in Ross, "Land-Grant College," 32; and Bailey, Farm and Community, 399-402. Developments in particular states are noted in Ross, Democracy's College, 81-82.

²⁰²On the events in Minnesota, see James Gray, The University of Minnesota, 1851-1951 (Minneapolis: University of Minnesota Press, 1951), 94-97.

²⁰³W.S. Gilbert quoted in *Ibid.*, 97.

²⁰⁴Details on the School of Agriculture are in *Ibid.*, 97-99.

²⁰⁵The notion of a "dual-purpose cow" is developed in Shepardson, 63-65; and Cheit, ch. 3. Gray, 97, notes admiration for the Minnesota achievement. Further, it might be thought that leaders of agriculture in the separate institutions exempted themselves from the contradiction through a focus on practicality that exceeded that of their university counterparts. But as Bailey, Farm and

Community, 430, stresses, nineteenth-century agricultural colleges universally faced disrepute in academic circles, a condition that disinclined their personnel to meet farm constituents on the latter's own terms. Instead, all leaders sought "to advance their entrance requirements, to attain the same academic rank as higher institutions of learning, and to confer equivalent degrees."

²⁰⁶See, in particular, the approving references to Ray Stannard Baker contained in a historical consideration of the legacy of overstocking by W.J. Beal, "The Farmer and His Education, or the Farmer as an Educated Specialist," SPAS, Proc. (1901), 19-21.

²⁰⁷A.C. True, Permanent Elements in Experiment Station Work, OES, Circular no. 30 (1896), 1.

²⁰⁸Quoted in Mohr, 2: p. 232.

²⁰⁹Quoted in *Ibid.*, p. 236.

²¹⁰On the vertical assumptions of professionalism, see n. 68 above.

²¹¹Note, for example, that the 1890 Morrill Act and the Hatch Act contained provisions for expanded federal oversight; but in each instance they also satisfied collegiate concerns by providing for relative state autonomy. See Mumford, 91; Eddy, 102; and Ross, Democracy's College, 179-180. For an old but indispensable overview of state-federal relations in the land-grant sphere, see V.O. Key, Jr., The Administration of Federal Grants to States (Chicago: Public Administration Service, 1937), 184-185, 189, 193, 201.

²¹²L.H. Bailey, The State and the Farmer, 2nd ed. (New York: Macmillan, 1911), 1. Bailey, 57-60, 74-77, discusses centrifugal versus centripetal patterns.

²¹³*Ibid.*, 3, 2.

²¹⁴Quoted in Conover, 57.

²¹⁵Quoted in OES, Report (1902), 227; and for details on the authorization, see Conover, 57.

²¹⁶See Conover, 57-58.

²¹⁷True and Clark, 39.

²¹⁸Quoted in Key, 184.

²¹⁹This assignment of causation can be inferred from the commentary in True and Clark, 39-46. See also ch. 3, sec. 3 below.

²²⁰Bryan, Discussion, 58.

²²¹On the growth of the Department, see Wayne D. Rasmussen and Gladys L. Baker, The Department of Agriculture (New York: Praeger, 1972), 13-14.

²²²Charles W. Dabney, Jr., Civil Service in the Department of Agriculture, OES, Circular no. 33 (1897), 10, 1.

²²³Quoted in Editorial, ESR 11 (1900): 402.

²²⁴Beal, 22, 23.

²²⁵See Bailey, Farm and Community, 422; and True, "Agricultural Experiment Stations in the United States," 517-518.

²²⁶True, Permanent Elements, 1. See also n. 227 below.

²²⁷True, Agricultural Experiment Stations, 6.

²²⁸W.H. Jordan, "American Agricultural Experiment Stations," AAACES, Proc. (1901), 51.

CHAPTER 3

ORGANIZING A CORPORATIST BOND,

1900-1916

The Social Context of the Early
Twentieth Century

After 1896 Populism gradually declined as a force affecting public policy. Business people grasped the relaxation of mass initiative as an opportunity to propel their own kind of "organizational revolution."¹ They populated the landscape with a surge of trade associations, chambers of commerce, civic associations, antiunion leagues, and groups specializing in matters of foreign trade.² "We are living in an age of organization," proclaimed John Kirby, Jr., a prominent antiunion official within the National Association of Manufacturers, "an age when but little can be accomplished except through organization."³ Ironically, these words epitomized the understanding of people who, by and large, still affirmed an American individualism that frowned on extensive organizational scale and activity.⁴

Business leaders of the upper middle class spearheaded the revolution by accelerating the movement for corporate consolidation. A billow of mergers from 1897 to 1903 produced 40 industrial companies possessing more than \$50 million in capital. At the earlier date there had been merely eight. Each year

between 1895 and 1905, larger entities swallowed some 300 independent enterprises. By 1919 concerns with over \$1 million of annual output constituted just 3.6 percent of all firms but they employed 56.9 percent of the nation's workers and generated 67.8 percent of the nation's manufacturing production.⁵

This trend toward concentrated control of capital meant greater corporate charge of the technical achievements of industrialization -- particularly with respect to the use of chemicals for petroleum, fertilizer, and other products, and with regard to the manifold applications of electricity.⁶ It also augured a corresponding upper middle-class acquisition of riches. "There are going to be more great fortunes in this country," the *New York Times* predicted in January of 1900. "Millionaires," it continued, "will be commonplace and the country will be the better for them, better for their wealth, better for the good they will do in giving employment to labor in the industries which produce their fortunes."⁷

Although the depression of the previous decade abated in 1897, thence lending some support to such Alger rhetoric and other proclamations of prosperity, the fact remained that between 1896 and 1903 workers generally confronted rising costs for a range of commodities. As late as 1914 these costs could barely be met with real wages that rivalled the earnings of 20 years earlier. Many laborers knew the difference between rhetoric and the reality they experienced: 1,779 strikes occurred in 1900, followed by 2,924 in 1901, and 3,944 in 1903. The numbers exceeded those of the mid-1890s. American society remained fractured.⁸

Mechanistic Imagining

In 1900 leading lights among captains of industry established the National Civic Federation (NCF) as the means to cohere unity from national breakage. Relying on alliances with New-Class academics and with officials in the American Federation of Labor, and hoping to obviate the need for armed force to resolve labor disputes, the NCF supported welfare measures and federal regulation of corporations. Its regulatory ideas subsequently were embodied in the Federal Trade Commission Act of 1914. NCF businessmen wished to establish interclass harmony by demonstrating that corporate leaders could act with social responsibility and that their organizations could be harnessed to the beneficent supervision of impartial experts. Corporations would thus represent a positive social good in an order where professionals engineered a reciprocal adjustment between the companies and the mass of citizens. If, the captains reasoned, the corporation was the finest example of economic efficiency, it logically followed that a world adapted to its operation would also engender the greatest social efficiency -- the maximum capacity to work as coordinated parts of an administrative design originating in the central office of an expert. By 1907 the 1,500 members of the NCF (over 5,000 in 1912) used numerous conferences to educate scholars about this conception of the route to efficient interclass accord.⁹

The NCF vision resonated with academics who came independently to a comparable viewpoint. As late as 1914, D.H. Hill, the president of North Carolina's land-grant institution, spoke in the past tense when referring to "the

single-handed individual who accelerated social and industrial progress." He found that "progress is now largely made by the united efforts of individuals organized for special service." This was preeminently true in "vast corporations" where "the individual is virtually lost sight of in the corporate combination." Hill concluded that no schooling completed the training of its students unless it adapted them to such an organization by making them "efficient men among forcible workers."¹⁰

Hill's comments had been presaged in 1904 by those of his colleague from Ohio, William Thompson. The Ohioan noted that nineteenth-century heritage disposed land-grant leaders "to look upon education from a purely individualistic point of view." This led to "forgetting oftentimes that what it does for the individual is but the beginning of its real service." Thompson wanted this forgetfulness to be remedied by a wider adoption of "the collective point of view." The true end of education was then evident.

It is when the pursuits of life have been made more efficient, and through the efficiency of these pursuits men are made more efficient, and through the greater efficiency of men society itself is more efficient and stable, that government finds its beneficent purposes realized and its investments [in land-grant education] justified. I regard it as of the highest importance that these ideals shall become the common property of our people. . . . Our banner must float in full view of the civilization which we encourage.¹¹

Beginning on the basis of enhanced technical and economic efficiency, it logically followed (if popular assent obliged) that the accompanying social efficiency would restore collective stability.

Like the business leaders in the NCF, Hill and Thompson spoke for those who embraced the "age of organization" by arguing that the world must work in a decisively altered fashion: Society's first requisite consisted in coordinating a group's individual specialties rather than in accentuating individual independence apart from group activity. Owing to a common acceptance of the ideal of centralized social efficiency, and to the willingness of businessmen to trade employment opportunities in a corporate future to professionals for a return in managerial expertise, leaders of both classes proceeded with establishing a mutual accord for the advancement of the new pattern.¹²

Rhetoric in favor of efficiency bespoke a positive appraisal for the technologies of transportation and communication that crisscrossed the landscape and increasingly bound the populace to an expanding marketplace. It also suggested a high regard for the corporation as a means to integrate the expansion.¹³ With such integrative capacities in mind, and with a penchant for subsuming everything in the nation under corporate reach, the railroad baron, James J. Hill, took the imaginative flight of declaring that the country's President and governors should be viewed as a board of directors presiding over the "great economic corporation known as the United States of America."¹⁴ For the sake of national efficiency, he might have added, could governmental and social structures be seen in any other way?¹⁵

Many in the New Class maintained that elected officials governed during the occurrence of a pivotal development: America was an increasingly complex industrial apparatus of interrelated and moving parts. And if a machine could be

understood as a systematic arrangement of parts for the transmission of power, then this unfoldment was best grasped as a social equivalent.¹⁶ Not surprisingly, in 1906 Frederick W. Taylor, engineer and principal figure in the period's mushrooming infatuation with "scientific management," blended esteem for the corporation with that for systematized social machinery. He merged them into a single imaginative stream that projected the essence of a new order:

True cooperation, cooperation upon the broadest scale, is that feature which distinguishes our present commercial and industrial development from that of one hundred years ago. . . . [it is] that [concert] of a well-organized manufacturing establishment, which is typified by the cooperation of the various parts of a watch, each member of which performs and is supreme in its own function, and yet is controlled by and must work harmoniously with many other members.¹⁷

Of course, there was nothing new about appeals to Newtonian harmony. The Constitution itself embodied such an interplay of checks and balances. But it relied on natural law as an extra-societal coordinating mechanism that (if not tampered with) would operate to protect the unity that derived from sharing individual freedom. In Taylor's imagination, however, the coordination followed a corporate pattern. Thus it entered society as a function of managerial expertise.¹⁸ While campaigning for President in 1912, Woodrow Wilson, the former chief executive of Princeton University, elucidated the difference between the respective origins of social union. "What is liberty?" he queried imminent voters, and then answered:

Suppose that I were building a great piece of powerful machinery. . . . Liberty for the several parts would consist in the best possible assembling and adjusting of them all, would it not? . . . The piston of an engine [will] run with

absolute freedom . . . not because it is left alone or isolated, but because it has been associated most skillfully and carefully with the other parts of the great structure.¹⁹

Less sanguine voices were raised against this mechanistic vision,²⁰ but many in the New and upper middle classes embraced it as an ideal expression of a harmonized order, as mental guidance toward a regulatory grip on a fractured nation. It suffused important efforts in the period's movement to establish administrative control of a range of social practices.²¹

Persistent Contradiction

In his autobiographical reminiscences, the muckraker, Ray Stannard Baker, described the "progressive" years in words that captured much of their discontent.

What a different world I knew from that of my ancestors! They had wilderness, I had crowds. I found teeming, jostling, restless cities; I found a labyrinth of tangled communications. I found hugeness and disorder. . . . While we were not without evil enough there on the frontier, it was not concentrated and complex and overpowering.²²

Numerous reformers struggled over how best to humanize industrialization in the age of organization. Some advocated social welfare measures, muckraking attacks on corporate malfeasance, and other methods of preventing the obliteration of communal affections. Some thought it sufficient to supply the rule of efficiency -- maximum output for minimum cost -- to the interworkings of the entire society, or at least to its individual plants and firms; the resulting productivity would somehow cure all social ills. But while these reformers found

concentrated organization unavoidable (and often desirable), at the same time a lingering liberalism called for its rejection.²³

Ironically, among the very businessmen who initiated the organizational revolution, there remained, especially for those who owned relatively small and mid-level concerns, a traditional middle-class view articulated by one who gave his estimation of the role of the financial community: "In an era of . . . great combinations aiming at the restriction if not the entire removal of competition . . . the banks have gone on in the old way . . . wedded to the idea of individuality and independence as a cherished tradition."²⁴ Other businessmen, particularly large property holders of the upper middle class, equated organizational expansion with progress.²⁵ The contradiction riddled not only the business community but many individual minds as well.²⁶

In 1905 Peter S. Grosscup, a judge for the United States Circuit Court of Appeals, used the pages of *McClure's* to sympathize with proprietary heritage. He claimed that corporate centralization was a disturbing trend because

the soul of republican America . . . is individual opportunity. . . . The loss that republican America now confronts is the loss of individual hope and prospect -- the suppression of the instinct that . . . has made us a nation of individually independent and prosperous people. [Corporate concentration bodes that] the acquisition of property, by the individuals who constitute the bulk of the people, will cease to be one of the opening and controlling purposes of their lives. This means that, as a republican political institution, America will have lost the spirit which alone promises its life.²⁷

This impassioned defense of proprietorship negated the period's equally strong desire to build organizations that transformed independent owners into

employees, operatives, or functionaries who executed but did not control the plan that governed their lives.

To New-Class authors of planning, it was important to counter-assert that "democracy does not dispense with leaders," as Elmer Ellsworth Brown, the United States Commissioner of Education, termed it in 1907. He stressed that people must follow the guidance of "scientific experts" and learn to "act intelligently upon . . . directions and regulations."²⁸ As late as 1916 the *Experiment Station Record* expressed frustration with the residual influence of a common sense that grounded its assessments of the world in "self-reliance" and "business instinct." Farm proprietors, in particular, too often rejected science as ill suited to "guide . . . the practical man," failed to grasp that "scientific facts are derived more accurately than personal impressions," and hence could not see the limitations of conclusions drawn from the peculiar experience of "purely local conditions."²⁹

In the 1890s, and even after the turn of the century, Frederick Taylor discovered that not all corporate leaders were prepared to substitute professional wisdom for practical acumen in the organization of factory labor. They sometimes opposed his proposals to place the arrangement of production under the control of engineers who would inhabit scientifically authored planning departments.³⁰ Taylor concluded that "employers derive their knowledge of how much of a given class of work can be done in a day from their own experience, which has frequently grown hazy with age."³¹

America's changing economic landscape furnished built-in pressure, however, to resolve the class contradiction in favor of accelerating the trend toward large-scale organization. In 1905 Montana's land-grant president, James Hamilton, affirmed a primary liberal principle when he said "educational values are subject to the same laws as commercial values." He knew "some will claim that there is a residue in education that escapes the tapeline of the practical man and refuses to be measured in terms of money." But, in keeping with an important current in land-grant heritage, Hamilton posed the irrefutability of the following determination: "There is an educational market just as surely as there is a grain market."³² Across classes, many intoned that the irresistible market operated with an extra-human will of its own. Once this irresistibility was conceded, Alger's individualist aspirations had no recourse from being drawn into a larger structure. For the market worked primarily to benefit those competitors who could avail themselves of concentrated corporate power.³³

Moreover, evolutionary theories provided means to rationalize the belief that such concentration resulted from economic decree beyond human control.³⁴ For example, a less fashionable but still admissible Social Darwinism focused the mind, first, on a jungle-like law of individual competition, and then on the transmutation of that law into a higher one: the harmonious operation of society as a large, complex, and functionally differentiated organism.³⁵ On one occasion a land-grant figure from Maryland voiced this manner of thinking:

The oneness of all nature, the grandeur of the whole, the correlation of all of its parts, the interdependence of one upon the other, and the appreciation of the fact that in all the realm of nature not one discordant note is found, save

as man modifies the operation of law in the great symphony of the universe -- I say that we have found that this can only be taught by directing attention to the individual law, and from this leading up to collective law.³⁶

Others blended the organic imagery of evolutionary thought with that of the machine, a move accompanying the felt necessity to accommodate the mixture's tangible institutional embodiments -- notably the highly differentiated business corporation. As individual atoms concentrated into bigger organizational collections of atoms, all contradictions might dissolve into the organic-mechanistic whole.³⁷

The Mass of Farming People and the Rural Problem

At the beginning of the century most of America's 5,737,372 farms were populated by people who lived without inclination to be incorporated into big organizations. At the century's turn at least three out of every five inhabitants of the United States lived in a rural setting. Of these, probably two-thirds actually resided on farmsteads. In the some 2,800 counties of the nation, while working the average of 2,500 farms included in each, the vast majority of the people who tilled the soil tried to live as if the organizational revolution was not occurring.³⁸

Many did so, in part, by seeking to uphold the autonomy of the family in their affairs. Although self-sufficient production had long before yielded to a greater emphasis on cash crops, farming people still clung tenaciously to such mixed ventures as vegetable gardens, poultry yards, and smokehouses. These activities helped sustain semi-autonomous homes. The farming masses also gathered their families together in neighborhoods of only a few miles in diameter.

Smaller than formal jurisdictions of counties and townships, these districts constituted the effective seat of school and local government pursuits. Farming people accepted the need of some county governance for purposes like taxation and elections. They wished, however, to restrain the reach of any regency beyond that level.³⁹ One observer noted that at the turn of the century the farming multitude behaved as if "the end of the neighborhood was almost the end of the world."⁴⁰

Lack of communication with outside regions reinforced such behavior. Telephones and good roads were rarities in the country hinterlands. The Federal Aid Road Act of 1916 authorized over \$75 million for initial construction of a national highway system, but by the 1920s pavement and gravel still failed to supersede the quagmires of mud that made travel difficult. In addition, following its start in the late 1890s, rural-free delivery of mail struggled to get under way while the implementation of parcel post awaited the end of the century's first decade.⁴¹ In 1914, T.N. Carver of the national Department of Agriculture commented that farming masses exceeded others in their remoteness from "long-distance" developments in transportation and communication. He concluded that since it blocked adaptation to a technologically interconnected society, this kind of "isolation means stagnation."⁴²

To many farming people, however, sequestered location afforded the protective distance for them to realize the radical decentralization of neighborhood authority that a contemporary and later commentator have termed "practical anarchy."⁴³ Such localism signified both a determination to approximate the

agrarian ideal of an independent yeomanry, and a decision to keep government within reach of everyone affected by it. With utter seriousness, these outlying inhabitants embraced the promise of republican egalitarianism.⁴⁴ They shared the assumption expressed by one Pennsylvania farmer: "We are too thoroughly American to allow any one to boss us."⁴⁵

On the one hand, the economic landscape in agriculture provided a setting conducive to the persistence of traditional patterns of neighborhood and family self-reliance. In the first decade the rate of increase in the nation's population surpassed that of farm production by two and one-half times. This furnished substantial reason for commodity prices to rise continuously until they hit peaks during the famous "Golden Age of American Agriculture" that lasted from about 1910 to 1914. The resulting prosperity exerted a breaking influence on economic pressure to change customary practices. Farmers could make a living without introducing costly innovations. On average, then, as the century opened, farms operated with machinery valued at less than \$131, and most farmers labored with draft animals and rudimentary tools.⁴⁶ Ten years later the periodical, *The World's Work*, contained an author's estimate that elementary implements commonly remained in operation.⁴⁷ Most farming people desired to live as self-reliant separatists and their prosperity allowed them to do so.⁴⁸

On the other hand, in keeping with long-term trends, the landscape offered a decrease of rich and productive soil. Agricultural productivity increasingly depended on capital-intensive mechanization and science-based practices. After 1902 the growing adoption of the gasoline tractor epitomized this dependence.

Although its use would not become widespread until the 1920s, the new machine signalled the onset of investment expenses that many farming people could not meet. The ensuing hardship served as one reason for an accelerating exodus from farms, a departure that weakened neighborhoods.⁴⁹ With perhaps the exception of the automobile, no machine surpassed the tractor as a symbol of a technological age that foretold of the erosion of localist autonomy in the countryside.⁵⁰ In sum, though the Golden Age provided a hiatus that slowed this corrosion, it did not stop tendencies that attenuated the viability of insulated farming neighborhoods.

Meanwhile, New and middle-class contemporaries pointed to that insulation as a source of a "rural problem" that imperiled the nation. In their view, it sheltered practices that led to frightening shortfalls in production.⁵¹ In 1912 *Hoard's Dairyman* complained that "the great body of farmers" went their own way and clung to "methods that prevailed fifty years ago."⁵² Others maintained that this inefficiency was inexcusable during a period of growing population, and in the century's first decade they found it responsible for a rate of increase in the wholesale price of farm goods almost three times that of the general price level. Calls for "cheap food" received extensive urban publicity.⁵³

In 1908, J.L. Snyder, president of Michigan State Agricultural College, used his presidential address to the national land-grant association to focus attention on the urgency of the rural problem. Sympathizing with middle-class assumptions, he observed that agriculture was fundamental to the nation's well-being, that "the city cannot exist without [the natural resources of] the country."⁵⁴ Here

he upheld the "agricultural fundamentalism" rooted in agrarian liberal tradition.⁵⁵ He went on to affirm the belief that interclass harmony derived from efforts to realize the principle that "the working man of today may be an employer of labor tomorrow and a capitalist next week or next month." Indeed, "So common is it in this country for the poor boy to rise to a high position, that we give it no notice." But the rural problem threatened to undermine mobility-based accord. That is, signifying the basic importance of agriculture, "if our agricultural output does not increase as rapidly as our population increases," then high food costs could lead to diminished opportunity for the "working classes," and to their consequent willingness to "get into the same political party and perhaps gain control of the national government." To avoid this, Snyder recommended the governmental construction of a state that could "assume the responsibility of directing" and coordinating an increase in farm productivity.⁵⁶

While Snyder hoped to save the interclass claim on Alger's self-help by establishing its antipode in the form of expanded state-help that could overcome the remoteness of farming people, the Country Life Movement arose from a comparable aim to integrate the masses into a cohesive national order. Extending the compass of the rural problem to include more than economic issues of production,⁵⁷ the Movement represented a microcosm of the period's larger amalgamation of "progressive" reformers. Like them, its educators, journalists, ministers, businessmen, and others groped for the optimum way to adapt Americans to the era of organization; but, unlike them, they concentrated the search in rural areas.⁵⁸

"Efficiency is the demand of the age," declared two Country Lifers.⁵⁹ Some in the Movement worried, however, that the isolation of farming neighborhoods prevented this "demand" from being met. Moreover, they perceived a level of tenancy in 1900 that had renters operating in excess of one-third of the nation's farms, and they feared that mass seclusion from mainstream socializing influences would combine with frustration of the aspiration to climb the "agricultural ladder" to independent ownership. The mix might provoke a widespread turn toward neo-Populist rebellion.⁶⁰ During the period there was enough popular radicalism in the countryside to substantiate the fear.⁶¹

Keeping with one reformer's counsel regarding economic issues, many in the Movement sought to organize the masses on principles that would "Henry Fordize agriculture in the whole sense."⁶² Such organization would obtain order that resembled the cohesive interrelation of mechanical parts. "The farm and the factory must go side by side," explained B.T. Galloway of the United States Department of Agriculture (USDA) in 1907, "in order to bring about the greatest progressive, intellectual, and industrial development."⁶³ Country Lifers found mass association in the name of Henry Ford to be a less fearful proposition than that in the name of Lorenzo Lewelling.

In a similar vein, Kenyon L. Butterfield, president of Massachusetts Agricultural College and a key figure in the Movement, wrote that Populist militancy had rested on "delusions" that encouraged farming people to attempt global reforms that were beyond their capacity to sustain. Instead of fomenting "a farmers' party" of protest, Butterfield implied that time would be better spent

building organizations with functions -- exclusive pursuit of higher prices and specific work to develop productive breeds of livestock -- that could be coordinated in a way which did not endanger harmonious "social efficiency" on behalf of "the general good." The farming masses, he believed, needed a realistic "administrative leadership" who could unite their particular interests with "the national welfare."⁶⁴

The Social Context and the Readiness
of Agricultural College Leaders to Meet
Its Class Oppositions

The attempt to "Henry Fordize" societal practices depended on the ability to counter the centrifugal disintegration of liberalism. It hinged on the power to instill a universal regard for the necessity, if not the desirability, of constructing finely tuned social machinery. Lest class tensions explode this project, it also required that middle-class practicality be welded to New-Class expertise, and that farming people be brought to order. In the words of one reformer, farmers must be taught "to cooperate and to obey."⁶⁵ Social engineering might succeed in binding what American individualism had failed to hold together.

In their sphere, the leadership of the agricultural colleges and the USDA acquired increased resources and duties that marked their readiness to face the difficulties of the new century. The colleges shared both in a jump in land-grant income from \$5,178,580 in 1897 to \$14,560,537 in 1907, and in a rise in land-grant enrollment from 22,565 in 1895 to 73,536 in 1910. The Office of Experiment Stations (OES) exemplified Departmental expansion through the exercise of a gamut of functions related to agricultural research and schooling -- notably, those

involving studies of nutrition, irrigation, and drainage, and that concerning support for graduate training in the colleges. In 1908 President Theodore Roosevelt tendered the national government's confidence in both agencies by turning to the land-grant institutions and the USDA for three of the seven appointees that composed his famous Commission on Country Life.⁶⁶

An observer wrote in 1909 in the periodical, *The Independent*, that the USDA's rising prominence as an educator and researcher, along with its intimate ties to the colleges, made it a "superintending power which should be recognized as the National Industrial University, rather than as a branch of the Executive Department." Thus, "Secretary [of Agriculture James] Wilson might or might not hold his place in the Cabinet; it is far more important for agriculture that he be considered the chancellor of a great industrial educational system, that touches every State." He understood that the USDA linked with the colleges in an expanding state apparatus. As a countermeasure to the "danger today" arising from "the breeding of anarchy" in society, this expansion boded well for a more peaceful "time when every farm in America . . . will constitute, in fact, a branch of the agricultural college."⁶⁷

The collegiate leadership focused their attention on the furtherance of integral components of the apparatus. In 1904 Kenyon Butterfield summoned the leaders in each state to

develop as rapidly as possible a definite tripartite organization that will reveal the college in its three-fold function -- as an organ of research, as an educator of students, and as a distributor of information to those who cannot come to the college. These are really coordinate functions and should

be so recognized. The colleges should unify them into one comprehensive scheme.⁶⁸

The tripartite arrangement of investigation, resident instruction, and extension would eventually be considered the most remarkable of land-grant achievements.⁶⁹ In the meantime, in the sphere of collegiate influence, it promised a way systematically to resolve the antagonism between the New and middle classes. It also raised the prospect of providing means to address the disassociation of farming people from the age of organization.

Resident Instruction

In 1905 Andrew Carnegie gave \$20 million for the establishment of the Carnegie Foundation for the Advancement of Teaching (CFAT). He wanted the Foundation to reward selected academic professors with retirement pensions. Under the guidance of Henry Smith Pritchett, the former chief executive of the Massachusetts Institute of Technology and the first president of the CFAT, the industrialist's gift went far beyond care for professorial superannuation.⁷⁰

Pritchett came to the Foundation with an understanding that "the problem of organization is the problem of the civilized world today, and particularly of our own country."⁷¹ He saw the solution as a task for engineers who, in his broad conception, included all professionals. Wedded thoroughly to the principles of meritorious achievement and specialized expertise, Pritchett viewed the CFAT as an agency that would foster the scholarship and leadership required for effective social engineering. He reasoned that their disinterested competence, scientific

autonomy, and cosmopolitan vision would enable such leaders to provide effective national coordination.⁷²

By 1906 Pritchett wrote in the *Outlook* that the CFAT's board of trustees comprised "a central agency in educational administration," one "which represents not a locality or a single institution, but which aims to take into account the educational needs of all sections." Therefore, the Foundation's scope "as a centralizing and standardizing influence in American education promises to outweigh in importance the primary purpose of the fund [i.e. pensioning], great as that primary purpose is."⁷³ Foundation leaders aimed to raise and standardize college entrance requirements to include four years of high school with 15 "Carnegie Units."⁷⁴ They withheld pension benefits from institutions that did not comply with the admission standard. (CFAT officials later shifted their emphasis from units to standardized tests.) Their central idea involved creating a smoothly articulated educational ladder that would culminate both in greater expansion of graduate education and in a corresponding reliance upon the Ph.D. degree as the basic prerequisite for faculty appointments. This vertical structure might produce the engineering leadership that Pritchett so esteemed.⁷⁵ Not surprisingly, the Foundation's president doubted the value of a democracy that catered to the aspirations of "the average member of society."⁷⁶

Meanwhile, agricultural college leaders rallied to the same ideals as those of the CFAT. During the period they pressed for the establishment of graduate programs that would take once provincial students and supply them with a

cosmopolitan vision, and that would begin developing doctoral study as the capstone of training for the leadership of American agriculture.⁷⁷ In 1910, W.M. Hays of the USDA noted that successful development of the top course depended on the maturation of the lower ones. These needed to be shaped in a particular fashion: "In this country we have standardized the parts of our farm machinery, so that they are interchangeable." Now it was imperative to do something comparable with "all parts of the [agricultural] school ladder."⁷⁸ A year later, at the meeting of the Association of American Agricultural Colleges and Experiment Stations (AAACES), J.C. Hardy of Mississippi motioned with pride when he drew the attention of his colleagues to a notice published in the *Southern Commercial Appeal*. According to Hardy, the newspaper had commented that in his state his "college had established a new order of society, based on the aristocracy of efficiency, as distinguished from the old aristocracy of blood or the parvenu one of wealth."⁷⁹

College leaders had an immediate interest in sharing Foundation ideals. The early twentieth century witnessed a rising demand for trained agriculturists that the colleges struggled to satisfy. Pensions constituted a major way to attract and retain capable teachers who could meet the entreaties for graduates able to fill the increasingly science-based occupations of agriculture. Hence, beginning in 1905 the AAACES Executive Committee requested that CFAT officials accept the land-grant institutions as beneficiaries of the Carnegie fund.⁸⁰

But organized farmers constrained collegiate freedom to move in the direction of the Foundation. Framing science as a means to secure an instant

payoff, as a method for getting two blades of grass to grow where one grew before, they mustered little patience with efforts to cultivate an elite scientific leadership. One apologist for their position complained that the colleges already contained too many professors who were "mainly theoretical," and lamented "the teachers being simply theorists." Such faculty constituted "the fifth wheel to the farmer's wagon." He wondered about the paying prospects of the farm future if academic inclinations led to putting "little or no value on the agricultural college as a place where boys may be taught practical farming."⁸¹ The farmers wanted their children to have access to instruction that embodied downright pragmatism.

In keeping with historic land-grant responsibility, Dean Eugene Davenport of Illinois took occasions to remind college leaders of the importance of heeding the concerns of those "middle-class men and women" who formed the collegiate constituency. He noted the egalitarian principle of admission that "obliged" the leadership "to 'take everybody' without much regard to scholastic preparation, because all men could claim equal rights."⁸² Since college helmsmen confronted the need to accommodate this middle-class principle, and since the development of rural high schools lagged behind that of their urban counterparts, it was understandable why until about 1913 a majority of colleges did not require a complete secondary course as a condition of admittance to programs that were often severely practical in character. Lax standards prevailed particularly in the West and South. But across the country students frequently came directly from the common schools -- though this practice predominated more in separate mechanical colleges than it did in agricultural divisions attached to universities.⁸³

In 1908 Henry Pritchett delivered an address to the AAACES convention. He explained that before it could be determined whether the agricultural colleges should receive CFAT pension benefits, the Foundation would require a clear understanding of their educational purpose. He noted the different types of land-grant institutions and remarked that the question of aim posed an especially problematic issue in the separate colleges. He asked if these were "institutions of higher learning" that intended to enforce entrance requirements that included "the standard four-year high school" course. Or were they secondary schools that aimed to teach practical farming only to please local constituencies? Pritchett stressed that the answer to these questions would be the decisive factor in determining if the colleges might share in the Carnegie fund. He concluded by saying that land-grant figures could not expect their case to be treated with the application of "special standards" of entitlement.⁸⁴

After a period of deliberation, in 1909 the Foundation's *Fourth Annual Report* issued the CFAT decision to deny the colleges access to the retirement fund. Holding the separate institutions particularly liable to reproof, the *Report* charged that the colleges failed to have "a consistent educational ideal." They were especially "open to the gravest criticism on the ground of low standards." The college leadership did not adequately "differentiate between" a collegiate education that trained "the leaders in agriculture," and a "trade" schooling that prepared for the vocation of farming. The *Report* called for a moment of reckoning:

We have now come . . . to a point where the agricultural college ought clearly to define its own mission. That mission seems . . . to be the work of a true college, with its experts and experiment station and its means of distribution. . . . [U]nder such a conception the agricultural and mechanical college should hold to college standards and drop secondary education altogether.⁸⁵

CFAT officials wanted to see land-grant contributions to a functionally differentiated educational ladder. Thus the *Report* emphasized that if the collegiate leadership refused to dispense with secondary training, then at least they should consider emulating examples like that being set at the University of Minnesota. There "the necessity to distinguish between the agricultural college and the agricultural trade school has been met by establishing two distinct schools," one a four-year institution "upon a college basis," and the other a two-year "school of agriculture upon practically a trade school basis."⁸⁶

In the first flush of the CFAT's rejection, college leaders defended themselves on the ground of their most deeply rooted liberal inheritance. W.J. Kerr of Oregon announced in his 1910 presidential address to the AAACES that the Foundation's *Report* represented "perhaps the most unwarranted disparagement and criticism to which the land-grant institutions have ever been subjected." In his rebuttal Kerr insisted that Jonathan Turner had left the colleges with a legacy of clear educational purpose: They "should meet the needs of the industrial classes" by training them to apply "science to all practical pursuits and professions in life."⁸⁷ W.O. Thompson of Ohio later intoned that the colleges must remain close to their constituency, close to farmers, for their roots bound them to "the industrial classes, that is to say, the common people." He was

convinced, accordingly, that the "standards of these [land-grant] institutions will be approved by the people and will not be subjected to the formal requirements of any outside organization." He believed "it to be a humiliation for any state institution . . . to accept the beneficence of the Carnegie Foundation . . . upon the condition that the standard or methods . . . shall be measured by the Foundation."⁸⁸

Faced with the judgment of New-Class gatekeepers that their schools were not the peer of the nation's elite universities, the leadership bristled at what seemed to them to be an unfair CFAT ruling. And for a moment they sought to revitalize a heritage that Albert Storms of Iowa had already praised. In 1905 he affirmed the land-grant rejection of the aristocratic idea of a "scholarly class" and embraced the "democratic ideal of equality." Storms maintained that, in tandem with all applied courses, agricultural schooling must enhance the opportunities of the "thrifty industrial classes." Agricultural instruction would then represent "the average" people who embodied the American repudiation of aristocracy.⁸⁹

Storms, however, quickly summoned his colleagues to "bear in mind that we live in a quite different age from that of the founders of these colleges." He then sided with a liberal current that barred egalitarianism from taking a levelling turn.

Equalitarianism did

not mean that all men are alike capable of higher education and efficiency, but it does mean that the line of division between classes shall not be artificial and arbitrary, but natural and spiritual. The educational ideal of democracy is that the privileges of education and of higher education shall be open to all who have the initial ambition, the perseverance, and the talents to improve such opportunities.⁹⁰

This kind of ratification of a Jeffersonian "natural" aristocracy of the meritorious signalled that college leaders shared a pronounced desire to move in the same direction as the CFAT. Indeed, after their initial hurt subsided, they came to view the Foundation's decision as a spur to raise the academic standing of agriculture.⁹¹ Some may have remembered that in 1901 Abram W. Harris, president of the institution in Maine and former chief of the OES, advised them to distinguish between "industrial" instruction for farmers and "technical education" for that "class of citizens" who constitute the "thinkers and leaders" of the nation.⁹² Amid the heat of his colleagues' anger, Storms in 1909 asked that they not take "a sort of critical and uppish attitude toward the Carnegie Foundation." He added that the CFAT "is undertaking a great public service in trying to standardize educational institutions." Thus, "I believe we ought not to yield too easily to the complacent notion that we can not and ought not to establish a regular standard for admission. This talk about getting nearer to the people is most of it bosh."⁹³ They did not surrender to such complacency. At the end of the period, C.E. Thorne of Ohio thanked his fellow agriculturists for striving to make agriculture a field with "opportunity for the exercise of the highest intellectual faculties at least equal to that offered by any other profession."⁹⁴

The leadership infused much of the agricultural curriculum with meritocratic assumptions. Aside from a customary emphasis on specialized expertise in fields devoted to agricultural production, around 1910 leaders made tentative starts at establishing rural economics and rural sociology as subjects that could

address the societal ramifications of the rural problem. Notably, while Populists had raised the urgency of social study as a way to help eliminate a maldistribution of power that injured life in the countryside, college helmsmen grasped this study as a means to cultivate a leadership with sufficient knowledge wisely to manage the resultant conflict.⁹⁵ President C.A. Duniway of Wyoming observed the era's "real danger that class consciousness and class interests may produce chronic struggles for supremacy." Professionals, he concluded, could effectively moderate among contending classes only if they understood "the relations of their special work" to the totality of economic factors of "production, distribution and consumption."⁹⁶ But no leader exceeded Kenyon Butterfield in concern to establish the professional's managerial role in socio-economic relations. He often argued that social subjects would round out the agricultural curriculum and ensure that the "worker in scientific agriculture will have a thoroness [*sic*] and breadth of preparation possessed only by the elect." The elite with such training would be able to secure "efficient rural progress" by bringing expert coordination to factional efforts in country reform.⁹⁷

Throughout the period, then, college personnel aimed to make their instruction a source of meritocratic respectability. Noting in 1912 that the CFAT "continues to deny the agricultural colleges and agricultural departments of the state universities, as a class, the benefits of the retiring allowance," President Winthrop E. Stone of Purdue University suspected that the Foundation "clings to the view that there is something inherently crude and unintellectual in agriculture as a subject of study."⁹⁸ With OES assistance, however, the collegiate leadership

had already busied themselves with the effort to prove the fallacy of this manner of seeing. As early as 1894 and 1895 the AAACES formed a Committee on Entrance Requirements and one on Instruction in Agriculture. These pointed the way toward higher standards for college admission and graduation. When he became chairman of the latter body in 1902, Alfred True parlayed his position as director of the OES into the requisition of information that would help to guide a cosmopolitan equalization of college requirements across state boundaries.⁹⁹

In addition to developments at the undergraduate level, at the AAACES convention in 1899 Thomas F. Hunt, dean at Ohio State University, proposed the idea of establishing an interstate graduate school of agriculture. The proposal received a warm response from his colleagues. Thus, under the control of officials of Ohio State, in the summer of 1902 the first session of the school unfolded at that institution. After the AAACES Committee on Graduate Study secured charge of the school, from 1906 to 1916 leaders conducted a biennial summer session in a different state each time. Teachers and researchers from the colleges, USDA scientists, and promising students attended the convocations. True repeatedly served as dean of the exercises, promoting training for a leadership in agriculture that would be second to none produced by any other profession.¹⁰⁰ In 1906 the Committee on Graduate Study drew special attention to this purpose when its members said that the school "expresses the conviction of the association that agricultural subjects are as capable as any others of advanced study."¹⁰¹

Along with the interstate effort, intrastate activity also propelled the rise of graduate education. Deans like Hunt, Davenport of Illinois, Liberty Bailey of New York, Harry Russell of Wisconsin, and presidents such as Raymond Pearson of Iowa subdivided departments to facilitate advanced specialization and lobbied for resources to sustain the expansionary logic of subdivision. By 1918, 10 colleges conferred doctorates in various agricultural fields. Moreover, sensing the opportunity to build their professional reputations by publishing in official experiment station bulletins, many students experienced apprenticeship in the laboratories not only as a mark of graduate distinction, but as a stepping stone to a future career as well.¹⁰²

OES officials consulted with rural school administrators regarding ways in which the latter could obtain appropriate equipment, qualified teachers, and effective curricular designs. And this consultation redounded to the assistance of college leaders who wanted an educational ladder to collegiate work in agriculture.¹⁰³ But in 1908 Howard Edwards of Rhode Island wondered if it is "true that these students of ours, beginning at the lower grades, are anxious to accept our nicely arranged programmes and to go through from the kindergarten to the university; is that true?" Fearing that such a ladder would concentrate resources at the top, he asked, "Is it democracy of education that provides for the favored few, favored either in will power or favored in money?"¹⁰⁴

Liberty Bailey previously had written about the increasing determination of college leaders to raise entrance requirements. This resolve meant that the colleges

tended to grow away from the 'plain people,' and they have in some measure made themselves incapable of serving the very ends for which they were established. In the early days of the agricultural colleges the field for work of a distinctly collegiate or university grade was not foreseen. It was expected that the agricultural college should stand in intimate relation with the plain farmer. For the most part the agricultural college has left what was designed to be its constituency.¹⁰⁵

Bailey told his colleagues that "we have been training leaders: we need also to train followers." After all, "degrees necessarily must be the hope of the few." He called, therefore, for a wider recognition of the college's "two co-ordinate functions as an organ of civilization," one to cultivate leadership, and the other to provide practical instruction that would please constituents.¹⁰⁶ As one of the main constituencies, organized farmers might object to being viewed as "followers," but few questioned their aspiration for practicality.

College helmsmen gave them "short courses." Like the "Practical Working Boys' Course" that J.C. Hardy advanced in Mississippi, these expressed the ideal of self-help through pulling one's self up by one's bootstraps. Their ambiguous line of development stemmed from two principal sources. Following the precedent of the School of Agriculture at the University of Minnesota, programs usually of two years duration could be offered. Or, in the pattern of classes established at the University of Wisconsin in 1885 and thereafter, winter courses might last anywhere from a few days to a number of weeks. Although the former served perchance as preparatory training for four-year undertakings, the prevailing effort involved differentiating them as non-degree schools that de-emphasized preparation for advanced study. The latter proved less susceptible to preparative

construction and fully exemplified the short-course practice of admitting all who came. Both resonated with the workaday realities of farm life. By 1907 college leaders increasingly viewed the most "abbreviated" courses as kindred to off-campus extension teaching. As late as 1917, the two-year schools operated in 41 colleges, while the shorter "shorts" functioned in 38 institutions.¹⁰⁷

As a whole, and without damaging the New-Class integrity of regular four-year degree programs, the short courses constituted a differentiated attempt to satisfy the utilitarian desires of college clientele. Thus, perhaps without knowing it, when Pritchett and company advised professional agriculturists to more adequately demarcate between collegiate and trade school instruction, they preached, as it were, to those already saved.

In sum, the *Report* of the CFAT provided an extra stimulus for college leaders to resolve the contradiction bearing on agricultural resident instruction. Viewing the resolution as something to be secured with correct administrative organization, the AAACES Committee on College Organization and Policy reported in 1911 that it was necessary for each college to loosen its secondary work from its collegiate teaching. Such partitioning, the Committee continued, expressed a "machinery of organization" that could meet the "popular interest" of constituent farmers which "expects to be satisfied in a popular way." This differentiation could also respond effectively to "the appeal of scholarship, of eminence in research, of measuring up with other institutions in the aristocracy of education."¹⁰⁸

The leadership welcomed middle-class interests and ideals into the college organization, but on the principle that they be removed to the detached practice of short courses. Simultaneously, the helmsmen advanced New-Class aspirations on the principle that they be centralized in the practice of four-year and graduate degree programs. During these years, progress toward this differentiated resolution was sufficient to mark the threshold of a class unity based on the routinized practice of principles that allowed each class to go their own way, but under central authority that carefully held them together in one organization.

Agricultural Research

From the middle decades of the nineteenth century, many agricultural researchers found their highest ideals inscribed in Charles Darwin's *The Origin of Species* (1859) and in Justus Liebig's *Organic Chemistry in Its Applications to Agriculture and Physiology* (1840). The former pointed to biological laws that governed plant and animal breeding while the latter explored the chemical foundations of soil fertility. Growing numbers of American scientists hoped to embody such intellectual monuments in laboratories that conformed to European examples. These models, notably the Moeckern station established in Germany in 1851, emphasized research in a profession undisturbed by pressures to diffuse practical results to farmers. Samuel W. Johnson and Wilbur O. Atwater incorporated this emphasis into the founding of the Connecticut State Agricultural Experiment Station in 1875 -- the first state supported institution of its kind in the United States. To varying degrees in the years before the passage of the Hatch

Act of 1887, the Connecticut venture was echoed in the establishment of several independent, extra-collegiate state stations. Their directors aimed these at the emulation of Darwin and Liebig, at an exploration of natural laws that relied on effort to realize the ideal of autonomous scientific expertise. Directors of college stations eventually tried to match that imitation.¹⁰⁹

Early in the first decade of the new century, however, most land-grant scientists devoted themselves to research that appeased the demands of business and farm organizations.¹¹⁰ Appeasement meant responding to lay interest in investigations for profit. It involved forfeiting uninterrupted freedom for fundamental investigation and entailed sacrificing long-term inquiry on the altar of impatience for immediately useful findings that determined the cheapest method of fertilizing crops, or that proved the value of different feeding stuffs. Scientists made the sacrifice largely because it was an important way to garner constituent support for legislative action that sent resources to the stations.¹¹¹

In 1906 the *Experiment Station Record* editorialized against the "false ideals" of subordination to utilitarian objectives. The *Record* warned scientists that this subservience endangered the integrity of agricultural research.

The earlier years of the stations' existence were given to winning the farmers' confidence and support by doing work which would appeal directly to his practical sense, and since then we have been busy trying to answer, usually in the quickest way, the questions he has showered upon us. There has been an increasing demand for such work, and there has grown up a too prevalent idea that, as the stations belong to the farmers, their duty is to serve the farmer in his own way. In our desire to recognize him we have gone to the extreme in some respects, and it has affected our progress as scientific institutions. It has done more; it has

affected our standards of ourselves and of our own requirements.¹¹²

An increasingly conspicuous and vocal minority of station personnel defended research grounded in professional principles. Often sympathetic to German influences and frequently possessing graduate training in the basic sciences, they found prominent spokesmen in Whitman Jordan, director of the independent New York Agricultural Experiment Station at Geneva, and in Henry Armsby, director of the college station in Pennsylvania. Inspired by Johnson and Atwater, both Jordan and Armsby wished to make the stations organs of professionalism.¹¹³

This desire was articulated in Armsby's 1907 presidential address to the Society for the Promotion of Agricultural Science. Speaking on the subject of "Research as a Career," Armsby concerned himself primarily with the kind of preparation needed for investigative work, and with the requisite conditions for attracting capable scientists to the stations. The first, he reasoned, included graduate instruction that would teach the prospective researcher to seek more than "the immediate application of his results to an increase of the profits of farming." As important as such relevance was, it should not be allowed to take priority over learning "the causes of phenomena, the hidden relationships which bind them together." The search for this fundamental causation would imbue the trainee with an appetite to be a leader of agriculture, one who relished the acquisition of "special training in addition to that which may suffice for the practical farmer."¹¹⁴

Second, among the conditions that attracted competent scientists, Armsby held none to be more vital than the academic freedom that sustained unfettered inquiry into specialized subject areas. The true scientist insisted on a "large degree of independence" from intrusions on time, from distractions that impaired concentration, and from efforts to suppress autonomous judgment. But Armsby implied that in the stations this autonomy could not equal that of erstwhile inventors. For the public laboratories needed "to develop that *esprit de corps*" which derived from teamwork, from the cooperation of specialists pursuing a common end -- a practice "as requisite in research as in athletics."¹¹⁵ Here individual freedom signified "independence" within a field of specialized expertise. It connoted liberty within the perimeter of one's position on the team: Group, not self, ultimately received the higher value.

Jordan echoed Armsby's remove from concern for the applications of science. At one point the Geneva director offered his evaluation of the scientist's proper proximity to everyday realities:

It is not necessary that you take a man out on the soil in order that he may work out a truth tremendously important to agriculture. And sometimes the very best things are worked out by men who are shut up by themselves and stay there.¹¹⁶

But none of the station investigators who esteemed Jordan and Armsby ever took paeans to the seclusion of the laboratory as far in the direction of "pure research" as did, say, Thorstein Veblen in his homage to "idle curiosity."¹¹⁷

When in 1899 he likened the operation of nature to that of machinery, Armsby embraced scientific relevance by pinning expertise to the service that

professionalized farming through teaching the farmer "knowledge of the natural forces which drive his farm, as the steam drives the engine."¹¹⁸ Similarly, Jordan stressed on repeated occasions that "pure" and "applied" research should not be severed from each other. Cultivation of the former, he explained, impelled the agricultural scientist toward "the advancement of his professional standing," while attention to the latter reminded of "the higher ideals of labor and of service." Some experts might aim for total detachment from worldly usefulness, but agriculturists needed to recognize that "if we measure the worth and dignity of knowledge by its utility in . . . industrial life," by "its relation to man's physical welfare in giving him increased control over his environment," then "it is clear that applied science is in this respect the all-important and triumphant factor of the twentieth century civilization."¹¹⁹

Simultaneously, Jordan retreated from a service that, in his judgment, rested on an inferior mode of inquiry: "Experiments of a mere local significance and those of a business nature, touching merely questions of profit, may well be regarded with suspicion as a means of progress." For these experiments sought immediate results; while the greatest long-term payoff ensued from "truths . . . which are most slowly and laboriously revealed." In sum, Jordan determined that if station leaders were to realize the highest ideals of "pure" inquiry, then necessarily they had to couple this quest with a high idea of service that could still legitimize their claim on public resources.

If we cultivate this [long-term] conception of experiment station usefulness, and if legislative and administrative powers will grant autonomy, time and means to those who feel themselves called to the labor of research, the scientific

future of this masterful [American] people will be the most brilliant and beneficent that the world has ever known.¹²⁰

Jordan appealed for the governmental support that would enable completion of the Enlightenment project of perfecting control over the environment -- both natural and social.

To the extent that this grand plan penetrated station practice, it might be expected to fuel an inegalitarian penchant for concentrating authority in the hands of the perfecters. In 1907 Jordan used Enlightenment heritage as a source of legitimacy for dividing the world into scientific experts and those who passively relied on them for direction.

In all ages man has been prone to seek the guidance of authority. He listened in faith to the prophets, sought the counsel of the ancient oracles, accepted the dogmas of the church as arbitrating all truth, both temporal and spiritual, and has been the dupe of the necromancer and the fakir. But now we have turned to science, and, excepting in things spiritual, it utters the final word. . . . Comparatively few use knowledge in a discriminating way. Indeed, few are qualified to do so, for in this, as in many other weighty matters, the masses walk by faith, and not by sight.¹²¹

In subsequent years station leaders distanced themselves from identification with farming people who either did not understand or did not like scientific method and vision.¹²² College dean and station director, Eugene Davenport of Illinois, penned a letter to the journal *Science* in order to explain that in his state the great mass of "uneducated and uncritical farmers simply ignore the station and all it says. They do not count one way or the other in its policy, nor do they constitute or even characterize its constituency."¹²³ But it was Jordan who often spearheaded the distancing. He noted that it would be "wildly utopian" to strive

for a time "when all the people, or even a majority, will possess the knowledge and ability necessary to a wise discrimination in civic and economic affairs." The agricultural college, in any event, could "never come into efficient touch with the many as it does with the few."¹²⁴

In previous years, however, it was difficult to contemplate the realization of elitist purposes because the scientific expert functioned with very limited autonomy. Early in the first decade this freedom suffered amid the prevailing conditions affecting scientists. In 1901, of the 688 people employed in the stations, 325 engaged to some extent in college teaching. In 1903, 375 of 757 did so, and by 1905 such instruction demanded time from 423 out of 845. When one accounted that many of the station personnel were secretaries, treasurers, librarians, clerks, stenographers, and gardeners, it was all the more evident that a considerable proportion of scientists could not give undisturbed concentration to their research.¹²⁵

Numerous investigators traced responsibility for the disturbance directly to the Hatch Act. The law required that each station (excepting the independents) be organized as a college department. Subsequently, the door opened for college officials to divert station funds and staff toward the performance of collegiate functions. Moreover, by mandating not only "original researches" but diffusion of "useful and practical information" as well, the Act did not avoid sanctioning the pattern of catering to client interests. And few things interfered more with the investigative process than treks to speak at Grange meetings -- unless it was the distraction of mounting correspondence with clientele, or the

swelling demand for constituent-pleasing regulatory work (e.g. routine analysis of fertilizers and seeds).¹²⁶

Under the pressure for diffusion, the stations often became veritable extension departments for assistance in practical agriculture. One historian has observed that directors could behave as "research-entrepreneurs" and accede to this development by trading useful results for backing in legislative chambers. He found that the exchange flourished in the early years of station history when client support first needed to be cultivated.¹²⁷

Jordan and Armsby consistently sided against the dispersal of scientific energies into a multiplicity of functions other than research proper. When a similar stance appeared in such influential organs of opinion as the 1908 report of the AAACES Committee on Station Organization and Policy, rising numbers of directors joined the chorus for investigative autonomy.¹²⁸ In particular, colleagues could scarcely resist the persuasive appeal of Jordan's oratory.¹²⁹ In *ex cathedra* pronouncements, he warned them of the "gravity" of a situation where "agricultural and business interests" thrust them into support of efforts that exalted "the man with a so-called practical touch," who "hustles about doing things," and who made them scurry approval from people who did not have a "vision of the scholar as an essential factor in agricultural education and research." Unless this pandering stopped, Jordan told them that investigation "shall mostly continue to halt on the outskirts of great problems whose solution would render to agriculture the highest possible service."¹³⁰

Meanwhile, at the turn of the century, European-inspired ideals of independent inquiry so contradicted the demands of the clientele that the unity of the AAACES nearly ruptured. A circle of directors moved to split the Association into separate college and station sections. They reasoned that only separation would properly convey AAACES sanction for research as an autonomous undertaking. College presidents, though always sympathetic to professional aspirations, resisted the move because they were responsible for entire land-grant institutions, and during a time of rising enrollment they did not want the Association to give any hint of approving a motion that would stimulate scientists to attempt a withdrawal from the classroom. To the chief executives, such a departure would mean impairment of collegiate teaching performance. But the presidents especially feared AAACES countenance of activity that would jeopardize the practice of diffusing useful results in return for legislative support of the colleges. Although they appreciated the scientific desire to be free of the practical constraint, they did not yet see a way to end this mode of dependence on constituents. If not for a unity-preserving compromise worked out in 1902, the Association might well have fractured.¹³¹

In the meantime, as strategic mediators, the OES leadership entered the task of resolving the class contradiction. With the help of Edwin W. Allen, assistant in charge of the Office, Alfred True took one step toward resolution by pushing for federal legislation that would aid in realizing the high aims for agricultural science that Atwater had earlier propounded. In 1902 the AAACES joined the effort by adopting a resolution that called on Congress to provide

greater funds for the stations. Late in the following year, Dean William Henry of Wisconsin mobilized the support of his friend, Representative Henry Cullen Adams of the same state, in the drive to open federal coffers. Shortly thereafter, True assisted Adams in drafting a bill. More than two years of intricate parliamentary maneuvering finally resulted in the passage of a law.¹³²

On March 16, 1906, President Roosevelt signed the Adams Act. Aside from doubling the stations' federal income, the Act, unlike its Hatch predecessor, limited its appropriations "only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States." Moreover, in an unparalleled authorization of centralized authority over land-grant investigators, it provided that

the Secretary of Agriculture shall ascertain and certify to the Secretary of the Treasury as to each State and Territory whether it is complying with the provisions of this act and is entitled to receive its share of the annual appropriation for agricultural experiment stations under this act and the amount which thereupon each is entitled, respectively, to receive.¹³³

This provision empowered Secretary of Agriculture Wilson to administer the law on the basis of the following points: (1) a definition of "original researches" in terms of "specific projects" for investigation, and (2) a policy of prior approval of proposed station plans, that is, securing compliance with the stipulation of originality before funds would be allocated. The policy constituted a logical extension of the audit powers the OES secured in 1895, and, as in that instance, the Office assumed responsibility for its execution.¹³⁴ The *Experiment Station Record* reviewed these administrative developments and declared their

insurance that the Adams Act would stand as a national bulwark of scientific autonomy against "the view that all [station] work must have a decidedly local flavor or application."¹³⁵ Less resource-dependent on sectional constituents, scientists now had greater freedom for esoteric exploration.¹³⁶

OES leaders wanted Adams projects directed at the patient discovery of natural laws that undergirded agricultural production. As an example of the kind of research the leadership had in mind, they pointed to the decades-long quest for the composition of plant proteins that Connecticut's Thomas B. Osborne had undertaken.¹³⁷ In addition, Edwin Allen later praised the administration of the Act for its emphasis on splitting work into projects, and thus for facilitating departmental subdivision into various specialties. He observed that such a process of "segregation and definition" enabled investigative activity to be more easily distinguished from regulatory and other station functions.¹³⁸ In general, Office leaders welcomed the fact that the very act of detailing a project enforced a planning disposition among laboratory personnel, while also generating acceptance of the principle that individual scientific freedom must operate within the perimeter of one's specialized location in the research organization.¹³⁹

Yet, in order to satisfy client demands and resolve the class contradiction, it was necessary to take a second step toward meeting constituent interests. During the period, branch or substations and various kinds of experimental "demonstration farms" sprouted in outlying areas.¹⁴⁰ These undertakings represented both a concession to the appeals of organized farmers for immediate applications, and a response to those, such as town proprietors, who

wanted increases in the agricultural trade of their communities. The ventures also embodied the recognition by scientists that a state's diverse soil and climatic conditions posed research problems that could not be solved without travelling away from the main station. Hence, these distant operations often straddled a fluid, shifting, and frequently confusing line between practical diffusion and fundamental inquiry.¹⁴¹

OES leaders attempted to administer a policy that would clearly differentiate the two activities. Since Office personnel believed that multiple substations invited a dispersal of funds that detracted from main station efforts to solve original questions, the national regulators sought to prohibit the use of Hatch and Adams monies in the smaller enterprises -- a course of action aimed at channeling the branches toward state support. At the same time, True and company allowed federal financing of outlying demonstrations that formed a temporary supplement to the task of completing an Adams project. If, however, the exhibitions served merely to prove the viability of practical techniques, then OES overseers preferred that the work be viewed as extension exercises without claim to appropriations for research. Office figures also offered, as we shall see, to help create distinct college staffs who would handle the pragmatic duties of diffusion.¹⁴²

In 1913-14 some 70 substations operated in 23 states. By endeavoring to detach the branches from the Adams mission, the OES leadership made a major contribution to the effort of furthering a dual-purpose strategy that accommodated client interests while also sheltering investigative pursuits.¹⁴³ Middle-class

ambitions found a home in subunits or organizational fragments that counterpoised the New-Class drive to envelop research in the protection of centralized main stations.

Agricultural scientists spoke of the branch activity as a decentralized practice that grew from traditional democratic principles.¹⁴⁴ Edward B. Voorhees of New Jersey maintained that the outlying work came into close contact with localities and therefore that it "helps them [farmers] to help themselves."¹⁴⁵ But the subwings marked an increasingly prominent pattern of collegiate behavior: Decentralization of functions occurred without a comparable gesture regarding authority. Apart from the distant units, the design emerged in plans to shift regulatory responsibilities from the main stations to state agencies. In 1916 Director A.F. Woods of Minnesota noted that the transfer would be eased if government officials prepared effectively for the assumption of the new duties (e.g. publication of statistics, routine analysis of products, and law enforcement). He proposed that state officers find a domain for regulation that adhered to the following model:

Certain fundamental principles of organization must be kept in mind. The demands of efficiency make imperative a centralization of administrative authority and a correlation of functions. The former points to a state department [of agriculture] with a commissioner in charge; the later implies the need of coordinate bureaus [for each task] within the state department.¹⁴⁶

Similarly, an AAACES Commission on Agricultural Research issued a 1908 report that aimed to adjudicate state and federal spheres of investigative responsibility by asserting the norm that local questions should be handled

locally and national questions nationally.¹⁴⁷ Lest the bifurcation be construed as a defense of decentralization in the form of states' rights, and in order to meet the complaint of one member who feared the division would threaten joint effort as "parts of one great instrument which exists for the general good,"¹⁴⁸ the Commission's majority insisted that the standard be viewed as a counsel for "wise differentiation of function on the part of the various [state and federal] agencies." The majoritarian position called reassuringly for centralized planning authority that could provide "close coordination" of respective endeavors.¹⁴⁹

The call received tangible embodiment in ventures like that of the AAACES Joint Committee on Projects and Correlation of Research.¹⁵⁰ Established in 1913 and comprised of Association and USDA representatives, the Committee advanced the view that station and Departmental investigations could be best coordinated if treated as parts of one collective system.¹⁵¹ In the same year, the Department's B.T. Galloway echoed that national and state organizations should practice "team work all along the line."¹⁵²

When they valued such concerted action, station leaders indicated a receptivity toward the "group" approach to research that spread from the industrial laboratories of corporations. This orientation marshalled numerous specialists for the cooperative study of specific topics of inquiry.¹⁵³ H.T. French of Idaho went beyond its laboratory conduct and embraced the corporation's general pattern of organization as a worthy example to follow: "Cooperation, it seems to me, could be used to advantage in scientific research as well as in business enterprises."¹⁵⁴ Indeed, the period witnessed increasingly successful

corporate attempts to combine individual specialties into coherent collective operations.¹⁵⁵ Director J.C. Kendall of New Hampshire thought that station policy needed to reckon with efforts to join specialists. He believed the cooperative tide would prove to be irresistible "in an age of specialization, in a time when efficiency is the keynote of business and manufacturing and when agriculture has felt its [the age's] influence."¹⁵⁶

Perhaps no one exceeded R.J.H. DeLoach, an investigator from Georgia, in providing a concrete picture of what "cooperation" meant. He noted that at his station "projects can be developed more systematically . . . when . . . planned by committees . . . than when planned and stated by individuals." Such joint activity allowed research to be conducted like a "game" wherein the director led the "line up" of personnel toward breakthroughs that constituted "a touch-down -- so to speak." This teamwork involved the recognition that individual scientific production formed a "unit," an atom of ambition within larger departmental units that composed the still larger, and effective, institutional unit. Individualists needed to accept a new motto: "Organization plus genuine investigators make the ideal institution, or Team of Agricultural Workers."¹⁵⁷ DeLoach's comments served as a counterpoint to a tradition of individualism that persisted in scientific thinking.¹⁵⁸

In summary, when station directors examined overall accomplishments of the period, the leaders could isolate a twofold achievement. Middle-class interests and ideals received welcome onto the research team, but on the principle that they be consigned to the differentiated exercise of branch demonstrations.

New-Class aspirations, on the other hand, benefitted from the centralized protection of the Adams Act, which helped to insulate the main stations from constituent pressures. Progress toward this dual-purpose resolution, its increasing practice as a sedimentary routine in collegiate organization, marked the beginning of a class unity.

The organizational differentiation pointed toward the fulfillment of a vision that William Henry had articulated in 1906.

A manufacturing corporation employs workmen, inventors, draftsmen, pattern makers, office force, and lastly, but not least, a corps of commercial travelers, whose sole business it is to advertise and place the manufactured articles with the customers. The commercial traveler or middleman is of the greatest usefulness in the industrial world; it is time we recognize the necessity of the same factor in our college and station work.¹⁵⁹

He continued by observing that since Adams funds were "specially guarded that original research" be protected, and because "the act shuts out" practical engagement with constituents, it was imperative to turn considerable branch activity over to those who would "be strictly extension workers and demonstrators." Henry's remarks nodded to the role of a diffusion force in the college organization. As the analogous traveling salesmen of a business corporation, "they are to constitute the one great link now lacking, which will bind us to the people we serve."¹⁶⁰

Agricultural Extension

The early agricultural societies held meetings to discuss innovations in farming. These gatherings formed the seed of what later became "agricultural

extension" -- off-campus instructional activities in rural areas. During the second half of the nineteenth century, various businessmen and organized farmers initiated institutes for education in the workaday skills of husbandry.¹⁶¹ By diffusing knowhow among assemblies of ordinary farmers, the institutes signified the first significant middle-class attempt to transcend the aristocratic pretensions of the older societies.¹⁶² Colorado grangers favored institute forums that involved "plain talks on plain subjects."¹⁶³ And the Grange generally proved to be a vital source of support in the subsequent development of such assemblages.¹⁶⁴

Relative to organized farmers, college leaders were the newcomers to the movement for diffusion of agricultural knowledge. Not until the 1890s did anything like a full-scale dissemination effort commence in land-grant circles.¹⁶⁵ This comparative sluggishness in advancing outlying instruction resulted partly from collegiate respect for the New-Class sentiment that considered extension teaching to entail a low-grade service to the crass pragmatism of the middle class.¹⁶⁶

Nevertheless, college helmsmen believed that diffusion might accomplish a higher order of service that could compensate for ruinous nineteenth-century practices. In this vein, William Henry observed that

in America we have skimmed over the land and taken the best of its fertility. People buy land and when they ruin it, or get it up to a certain price, they go to another place. This is due both to lack of technical training, and to the business idea of getting the money out of the land and leaving it.¹⁶⁷

At the turn of the century leaders increasingly sought to steer resident instruction and the experiment stations toward cultivation of a professional leadership. Simultaneously, they viewed extension work as an opportunity for trickle-down professionalization of constituents, as a way to provide sufficient "technical training" to induce widespread deference toward the role of expert knowledge in land management. As a counterbalance to their proclivity to bring research and college teaching under centralized control, the leaders seized extension as a means to proclaim their continuing sympathy with the ideals of Jonathan Turner. They embraced dissemination as a method of testifying to their lasting commitment to the distributive "spirit of helpfulness" that imbued land-grant origins. When framed not as an expression of anti-intellectual pragmatism, but as a conveyance of professionalized practicality, extension might embody a high conception of service that aimed to improve practice and thereby legitimize the development of meritorious expertise in the other two divisions of the college.¹⁶⁸

To J.C. Hardy of Mississippi, this concept called for "uplifting" food production to "its rightful position of dignity and importance," whereupon "American civilization will become stronger and stronger, being based upon progressive agriculture."¹⁶⁹ Alfred True trusted that expert-guided extension "would bring agriculture well into line with the great commercial and manufacturing enterprises of our day, which owe so much to technical education"; he deemed that such guidance "would greatly help to take away from agriculture the reproach of being a 'belated industry.'"¹⁷⁰ Agricultural experts assumed that

Turner's democracy of diffusion could be wedded to the corporation-inspired organizational trends of the time.

Meanwhile, organized farmers and rural entrepreneurs viewed those tendencies as a threat to their individualistic survival in the marketplace. These land-grant constituents consequently advanced forms of itinerant education that would help preserve the heritage of individual freedom.

The Farmers' Institutes

With the exception of three states, in 1899 farmers' institutes operated nationwide. These one-day, two-day, or three-day meetings convened in rural towns, villages, and hamlets. Through state agencies of agriculture, or occasionally through county and private associations, businessmen and organized farmers controlled the gatherings in 26 states by 1903. College leaders maintained charge of them in 21. Collegiate control, however, was more formal than actual. In practice, local residents provided the meeting halls and publicity that determined whether or not an institute could be successfully conducted. As largely a farmers' mode of diffusion, and in keeping with earlier meetings founded by the Grange, the assemblies stressed practical topics of immediate relevance to farming for the market.¹⁷¹ One of the subjects discussed at a New Hampshire gathering in 1909, "How to Increase Profits in Dairying," was typical of a general institute regard for the bottom line.¹⁷²

During this period, most organized farmers valued the assemblages for their adherence to local control, for their gathering of audiences composed primarily of adults yet usually undifferentiated or ungraded by age, and for their reliance

on lecturers who displayed a grasp of practical farming before they touted their credentials.¹⁷³ Many farmers also expressed appreciation for discussions that ranged into what one observer called "the kind of 'back talk' that helps all to understand better."¹⁷⁴ Husbandmen also governed the institutes in a fashion that set up and dismantled operations from season to season, leaving no permanent presence in the localities. Governance sometimes depended solely on the leadership of a single individual, a condition that raised the question of what would happen to future activity if the leader passed from the scene.¹⁷⁵ This lack of bureaucratic organization prompted Kenyon Butterfield to observe: "It has been stated that in America we have no educational system -- that spontaneity is the dominant feature of American education. This is certainly true of farmers' institutes."¹⁷⁶

D.W. Working, an institute leader from West Virginia, explained that farmers vested the meetings with their own "real proprietorship." He maintained that the "true farmers' institute" did not have "teachers and other superior folk" but instead received its direction from "plain men and women with a little special preparation for helping other plain men and women in the working out of problems that are mainly their problems." Such a gathering constituted "an essential part of our American agricultural democracy." To the extent that assemblies were not "taken possession of by mere college professors," the assemblages would continue to stimulate farmers' democratic "independence." The desire of professionals to make the meetings into schools where expertise could be unfurled in the context of "relations of teacher and pupil -- relations very different from those that subsist

in the institute,"¹⁷⁷ contradicted those notions of individual freedom for a level interrelation of plain folk. As Working emphasized, while interaction "with some people can be almost purely professional," for farmers relationships needed to "be personally agreeable in order to be at all helpful."¹⁷⁸ The institutes embodied this personality and thus worked against systematization in education.¹⁷⁹ But they did not constitute the only middle-class effort to infuse diffusion with individualism.

Seaman Knapp and Farmers' Cooperative Demonstration Work

Seaman Asahel Knapp (1833-1911) moved from one class location to another before deciding that agricultural business best expressed his own ideals. A physician's son from Schroon Lake, New York, Knapp parlayed preparatory training at Troy Conference Academy, in Poultney, Vermont, into successful graduation from Union College, Schenectady, New York. Ill health prodded him to take up farming in Iowa in 1866. After later serving as superintendent of Iowa's state college for the blind, as a Methodist minister, and as editor of *The Western Stock Journal and Farmer*, by 1879 he landed a position as professor of agriculture at the Iowa State Agricultural College. Five years afterwards he undertook a brief term as the institution's president. But his experience in land-grant circles convinced him of academic impracticality, and thus in 1885 he leaped at the opportunity to work for a syndicate that proposed to settle skilled farmers in a portion of southwestern Louisiana. Along with this settlement

activity, Knapp found time to serve as president of the Southern Real Estate Loan & Guarantee Co.¹⁸⁰

As a favor for his old friend from Iowa, James Wilson, in 1898 Knapp agreed to become an agent of the USDA and to conduct a global search for new plant varieties. By 1902 he worked in a larger capacity as the Department's special agent for the promotion of agriculture in the South. Operating out of the USDA's Bureau of Plant Industry, Knapp immediately set about reforming that region's reliance on the single cash crop of cotton, a pattern that reinforced a credit system which locked sharecroppers into perpetual poverty and dependence on landlords.¹⁸¹ To Knapp, the "bucolic [Benjamin] Franklin" of one author's description, the solution to this plight rested both on the implementation of diversified farming and on a thoroughly Franklinian rejuvenation of individual character.¹⁸²

Knapp believed that nothing prevented an American family from living comfortably, "except our laziness, our lack of thrift, or possibly sickness, and nine-tenths of all sickness is due to malnutrition, which is another name for ignorance." Ultimately, he thought that these traits flourished when people failed to uphold the Jeffersonian legacy of freeholding family farmers. "The true representative of liberty is the man who owns his farm home in the country. . . . He stands for an independent political unit instead of the mass units of cities." Poverty would be vanquished when all realized "a yeoman's pride with a yeoman's privileges." A farmer, inspired with such self-respect, would "mold the

soil to his profit and the seasons to his plans, till he shall be free from the vassalage of mortgage and the bondage of debt."¹⁸³

Armed with these principles, Knapp embraced his Departmental work as an opportunity to spread diversification as the key to liberty. But many southern farmers felt like strangers to the practice and were either unwilling or unable (the credit system tended to impose monoculture on tenants) to risk their livelihoods on a government-sponsored innovation. As Knapp soon discovered, farmers paid no heed to the examples of diversification demonstrated on the USDA's "model farms." The husbandmen concluded that unless they secured comparable access to the federal treasury, such farming could not succeed on their land. Knapp deduced that farmers should be instructed differently.¹⁸⁴

In 1903, supported largely by small and mid-level businessmen in the vicinity of Terrell, Texas, Knapp secured the resources to underwrite a venture by a neighboring farmer, Walter C. Porter, who agreed to adopt diversification techniques. Porter's results constituted a productive, profitable, and persuasive example to other farmers. Knapp consequently proffered a teaching method that used unique object lessons to induce behavioral change -- farmers demonstrated to themselves, on their own farms, with their own actions, that they could successfully diversify.¹⁸⁵

This participation of farmers in their instruction extirpated "the natural rottenness of leisure" and thus anchored one of Knapp's favorite beliefs: "Abolish idleness, and we have struck at the root of vice. Every man should be employed. The idle should be treated as criminals."¹⁸⁶ Despite the Porter

success, however, leaders in the USDA showed scant interest in advancing the demonstration pedagogy.¹⁸⁷

Around 1903, though, after about a decade of steady pilgrimage out of Mexico, the boll weevil ravaged portions of the Texas cotton crop. The USDA recognized that something needed to be done to contain the weevil's destruction. Reconsidering their initial apathy toward Knapp's demonstration method, they seized it as a tool for coping with the insect. Knapp received federal emergency funds and, following the establishment of his base of operations in Houston in 1904, commenced a full-scale campaign using the demonstration technique as the way to show farmers how cotton production could be sustained in spite of the weevil.¹⁸⁸

Joined by some railroad leaders, small and mid-level businessmen in numerous localities, fearing the loss of their agricultural trade, helped spur Knapp's efforts with financial backing of the demonstration cause. By 1906 their aid assisted Knapp in launching the first county agricultural agents, individuals who devoted all of their energy to developing demonstration work in their respective counties.¹⁸⁹

That same year, when John D. Rockefeller's General Education Board agreed to finance the spread of agents into non-weevil infested states of the South, large-scale business interests focused increasing attention on Knapp's activity. Their involvement prompted demonstration teaching to become something of a middle-class craze. The total number of agents (including "state" and "district" agents) in the South grew from 49 in 1907 to 851 in 1912.¹⁹⁰

While Secretary of Agriculture Wilson referred to the upsurge of the "Demonstration Propaganda," other contemporaries fixed the name "Farmers' Cooperative Demonstration Work" to this rapidly growing activity.¹⁹¹ The weevil thus had provided a critical occasion for the expansion of demonstration propagation, and Knapp, according to a subsequent report of the USDA, used the crisis in order "to develop a practical scheme of rural education which would enable the great body of average farmers to increase their earning capacity and teach them to help themselves without having them sacrifice their self-respect or initiative."¹⁹²

In 1909 Knapp explained that

Farmers' Cooperative Demonstration Work may be regarded as a method of increasing farm crops . . . or it may be considered a system of rural education . . . by which a readjustment of country life can be effected and placed upon a higher plane of profit, comfort, culture, influence, and power.

Because the first feature of this demonstration work is to show the farmer how he may more than double his crop at a reduced cost of production, it has been regarded by some solely as a method of increasing farm crops. . . . This would be of great value to the world and would stand as a sufficient justification for the efforts put forth and the expenditures involved, but such a conception would fail to convey the broader purpose of this work.¹⁹³

Indeed, in keeping with the context of the basic principles in his thought, Knapp hoped the county agents would get farmers to demonstrate the profitability of diversification and thus lay the groundwork for the "broader purpose" of "a readjustment of country life" that amounted to a sweeping restoration of middle-class liberalism. But he experienced frustration both when organized

farmers, rather than the mass of farming people, proved most receptive to agent efforts, and when college leaders distanced themselves from demonstration work because of its unprofessional willingness to let farmers become their own experts in better husbandry. In fact, the leadership advanced contrary ideas of what diffusion might entail.¹⁹⁴

College Extension

Influenced by the example of early lyceum teaching and by the succeeding emergence in the 1870s of the Chautauqua system of summer schools, home readings, and correspondence courses, college helmsmen used the "progressive" period as a time to develop parallel forms of instruction. These included agricultural correspondence and reading courses, itinerant extension schools, and what the AAACES Committee on Extension Work called an "infinite variety" of like activities with peculiar origins at the respective colleges.¹⁹⁵ Moreover, the collegiate leadership drew inspiration from "university extension," an English import that marked no substantial departure from the Chautauqua format, but which embodied a more pronounced hope that social life could be conducted as if inside a classroom. To instill a widespread respect for advanced schooling and its accompanying experts, President William Rainey Harper of the University of Chicago in the 1890s and President Charles R. Van Hise of the University of Wisconsin after 1900 did much both to forward the English product and to expand its scope.¹⁹⁶

Van Hise gave university extension great breadth of application when in 1904 he outlined the elements of what became the famous "Wisconsin idea."

These ingredients consisted primarily in expansion of access to various kinds of training and in motion for experts to serve state government. University faculty soon plied their expertise by consulting with state officials or by serving as governmental appointees. For example, the University's professor of transportation assumed duties on Wisconsin's public utility commission. The "idea" appealed to Governor Francis E. McGovern because it promised a way to execute a technocratic management of competing interests.¹⁹⁷

The Wisconsin experiment accorded well with that reform effort of the period described by one historian as the pursuit of government by the "best people."¹⁹⁸ The venture also afforded this elite with an opportunity to professionalize popular thinking and to provide access to learning that would induce respect for, not to say reliance on, professional direction of social affairs. The idea beckoned toward overcoming what a contemporary viewed as a traditional consciousness that "was not generally sufficiently enlightened to insist upon expert service."¹⁹⁹

Agricultural college leaders sought similarly to professionalize popular perception, or, as C.D. Smith of Michigan termed it in 1901, they aimed to make "the farmer . . . see the facts of nature about him as the scientist sees them."²⁰⁰ The traveling extension schools illustrated this purpose. In 1894 a school for grape growers was organized in Chautauqua County, New York. By 1909 the itinerant courses spread throughout much of the country, especially in the Midwest. In 1911-12 they reached approximately 86,000 predominantly adult students. The classes ranged in duration from three days to two weeks, and they included lectures, syllabuses, textbooks, and makeshift laboratories.²⁰¹

E.A. Burnett of Nebraska found that the schools, particularly the longer ones, offered both an opportunity for "careful and systematic study" of special problems, and a device for making farmer-students somewhat "expert in the actual laboratory or field practice fundamental to the subject taught."²⁰²

The collegiate leadership searched for methods to shift the activity of diffusion away from farmers' self-reliance and toward professional-reliance. As an OES report explained, in paradoxical language, they aimed to further means of securing the "spirit of self-dependence" in the form of a self-acting execution of scientific prescriptions, whereby those directions became so routinized that their practice would "be self-sustaining and capable of operation by local people."²⁰³ Initially, leaders thought the farmers' institutes could be transformed into a vehicle for the transference. Thus the helmsmen moved, respectively, to make the institutes an agent of professionalism by establishing the American Association of Farmers' Institute Workers (AAFIW) in the late 1890s, to specialize the gatherings by combining them with "movable schools" for instruction in particular subjects (an importation of extension schools into the institute setting), to grade them by developing segregated meetings for young people, and to professionalize their teaching by attracting lecturers to one or two-week "normal institutes" held at the colleges.²⁰⁴ The collegiate leadership wished to define the gatherings less as a farmers' alternative in diffusion, and more as one among many college extension functions, all of which might achieve what one periodical called "a grip on every . . . phase of [popular] thinking and life."²⁰⁵

Collegiate ambition for the meetings pointed to a transformation of their non-bureaucratic character. In 1905 the Association of Institute Workers approved a plan of organization which stressed to sectional sponsors of the assemblies that "a few fundamental principles in institute work . . . ought to be recognized and adopted by every State." It was, for instance, necessary to have "a competent central organizing power to coordinate and direct" permanently established local organizations, a principle "so generally . . . accepted both in governmental and business affairs as to need no demonstration." The plan's emphasis on permanence followed from its assumption "that no institution that is dependent for its continuance or efficiency upon the life or ability of any one man is well founded."²⁰⁶

College leaders hoped, moreover, that once fully absorbed as a function of collegiate diffusion, the institutes might serve as a basis for a nationalized extension system that would round out the accomplishments of the Morrill Act of 1862 and the Hatch Act of 1887. To promote "the reasonable coordination of the [institute] work throughout the country," as an OES figure termed it, in 1903 federal overseers furthered that hope by establishing a Farmers' Institute Specialist in the Office.²⁰⁷ John Hamilton, formerly a professor of agriculture at Pennsylvania State College, assumed the new position and commenced his effort to cohere national unity out of disparate local activity.²⁰⁸ Hamilton's mission echoed Alfred True's desire to see the AAFIW become such a coordinating influence that it would form "a great connecting link between the Department [of Agriculture] and the farmers through the institutes."²⁰⁹

To the collegiate leadership, a national extension system promised the exportation to the countryside of large numbers of teachers who would bring farming people into contact with what Kenyon Butterfield later called "the trained man, the expert, the superior man" who was an "agent of democracy" because he knew what the people needed. His instruction was indeed "imperative in an efficient democracy."²¹⁰ Hamilton, meanwhile, spoke for many both in and out of the colleges when he said that a nationwide extension force would respond effectively to "the fact that our present [food] production is certain to be inadequate for the comfortable support of future population." These personnel would help solve the rural problem by doing "for men engaged in agriculture what proprietors of mills and manufactories are striving to accomplish in their business," that is, "conserve waste, economize effort and material, and increase the output with reduced expense." Extension teachers would "do with and for a man that which a manufacturer desires to have done for his machine -- improve it that it may turn out more and better quality of product."²¹¹ Such were the ideals that infused endeavors to create a national extension system.

But many among the farm leadership of the institutes opposed the use of their convocations as a foundation for the nationwide scheme. In 1909, J.L. Ellsworth of Massachusetts voiced the sentiment of husbandmen when he deplored "the tendency to centralization, to taking the management of these meetings out of the hands of working farmers and to placing them entirely under the control of the . . . agricultural colleges."²¹² Tait Butler of North Carolina also insisted that "the farmers' institute will more quickly come into its own when it is

maintained as an independent institution free from the . . . colleges and . . . stations," whose leaders "naturally use it to promote and magnify their own ends and purposes."²¹³ And enough farmers concurred so that by 1913 college helmsmen had harnessed formal charge of the assemblies in only 28 states -- far short of the national target.²¹⁴

Indeed, college leaders on the AAFIW Committee on Institute Organization and Methods had already conceded that "the farmers' institute is not by nature a well-disciplined school consisting of teacher and taught, nor can it ever be."²¹⁵ The leadership knew that if such "disciplined" relations were to prevail in a nationalized system, they would have to well up from a different and more supportive fountainhead of activity.

Business Leaders as the Catalyst for a National Extension System

The rural problem occasioned upper middle-class business desire both to protect their agricultural trade and to improve their public relations during a time of considerable anti-corporate sentiment. In the first decade of the new century, for example, James J. Hill tendered his famous address on "The Future of American Agriculture," in which he argued that profitable manufacturing depended ultimately on a plentiful food supply which, in turn, required the application of expertise to ensure soil conservation. Setting aside customary business emphasis on practicality, Hill called for long-term scientific investigation that would anchor the future of agricultural production. He then beckoned for a diffusion of investigative results that would effect "a readjustment of national

ideas such as to place agriculture and its claims to the best intelligence and the highest skill that the country affords in the very fore front."²¹⁶ The *Experiment Station Record* reviewed the address, saw it as an admirable gesture on behalf of the public interest, and proclaimed Hill to be "a strong ally . . . worth much to the [extension] cause."²¹⁷

Business and college leaders moved toward an alliance with each other that promised to give the latter needed extension funds and the esteem that Americans bestowed on those who united with practical enthusiasts. The union might also provide the former with the educational respectability that accompanied sponsorship of outlying diffusion, sponsorial activity that signalled their intent to raise themselves above the contempt that befell those who pursued only their own self-aggrandizement.²¹⁸ A.M. Soule, president of the land-grant institution in Georgia, favored the alliance and stressed that "extension work may . . . be carried on advantageously with the railroads and other large corporations." He reasoned that if parties to such a union recognized their mutual interests, they would be a short step from realizing the ideal that aimed for them to be "welded into a harmonious whole" that worked for each individually and all collectively.²¹⁹

Franklin Dye, a New Jersey institute leader, scanned the period and made the following comments:

There seems to be a growing apprehension on the part of the general public and of certain corporate interests in particular that agriculture and the farmers are closely if not vitally identified with the life of the people and the prosperity of the Nation, and this is true. Railroad companies, banking institutions, boards of trade, and mercantile firms are

offering and rendering assistance for the improvement of agriculture in various ways, evidently realizing that the crops annually produced by the farmers are essential to the support of the people and the success of the commercial and transportation interests also.²²⁰

Corporate leaders discovered that among the "various ways" of assisting agriculture, none were more important than devising multiple means for advancing a national extension system.

In 1902 John D. Rockefeller established the General Education Board (GEB). His initial gift of \$1 million, followed by grants of \$10 million in 1905, \$32 million in 1907, and \$10 million in 1909, enabled the foundation to further the dual purpose of promoting systematization in the nation's higher educational institutions, and of aiding impoverished schools in the South.²²¹

Wallace Buttrick, the general secretary of the Board, determined that the suffusion throughout the region of Knapp's demonstration method would aid impoverished Southern schools by generating greater farm income and by augmenting tax revenue for the support of schools. Officers of the GEB also wished to bring national attention to demonstration work as the best technique for changing farm customs that ill fitted an organized industrial landscape. Thus, in non-weevil infested states, the work benefitted from the foundation's contributions that totalled a modest \$7,000 in 1906, but which grew sharply to \$102,000 by 1910 and \$187,000 by 1914.²²² According to the official account of the GEB, the Board's "outside" funding sparked the demonstration technique's "spread from community to community and from state to state."²²³

The GEB stimulated such a rapid growth of the work that Bradford Knapp, Seaman's son and successor as leader of cooperative demonstration, felt obliged to turn to the agricultural colleges for a supply of agents who could meet the escalating demand for the new instruction. The overture reflected Bradford's penchant for establishing formal cooperation with college leaders (catapulted by an agreement with the leadership of Clemson College in South Carolina in 1912).²²⁴ Although by mid-1914 GEB funds were supplanted by federal monies, during the interim from 1906 private power effectively allied with government in an expanded state apparatus that enhanced the Board's push for demonstration as "the best means of conveying to the average working farmer of the South, in his manhood, the most efficient known methods of intelligent farming."²²⁵

Leaders of the apparatus appropriated two items from Seaman Knapp's work that they considered of lasting value: his pedagogical technique and its accompanying reliance on agents who resided permanently in their respective counties.²²⁶ As would subsequently become clear, however, this leadership did not share Knapp's passion for the restoration of middle-class liberalism.

In the North, meanwhile, similarly expanded state activity formed when in 1911 the Delaware, Lackawanna and Western Railroad and the Binghamton Chamber of Commerce of Broome County, New York, forged a cooperative arrangement with officials of the USDA and Cornell University. The accord forwarded the creation of a "farm bureau" in the Chamber and provided for the establishment of a county agent. Constrained from offering financial assistance, Cornell personnel promised to give the agent continual advice.²²⁷

The Broome County venture helped spur a veritable flood of business involvement in the spread of county agents. Notably, Julius Rosenwald of the mail-order giant, Sears, Roebuck and Company, through the instrumentality of the Council of North American Grain Exchanges (formed by leaders of chambers of commerce, boards of trade, and the like), offered \$1,000 to any of 100 counties desiring to support an agent and willing to answer the gift with \$2,000 to \$5,000 of their own. Rosenwald stipulated that the agents be retained for no less than two years. Such benefaction ensured follow-up to the Broome experiment in county agency.²²⁸

Other business organizations engaged in like effort on behalf of agricultural diffusion. Even a partial list of participants is impressive: John Deere, J.I. Case, and other implement companies; the American Bankers' Association; the Armour Company and other meat packing concerns; the American Steel and Wire Company; the National Fertilizer Association; the West Central Development Association of Minnesota; the Better Farming Association of South Dakota; the Association of American Flax Seed Buyers and Crushers; the Association of Manufacturers of Linseed Oil; and sundry other wholesale, elevator, lumber, and milling interests.²²⁹

No one did more to further diffusion than those referred to by one observer as the "hard headed, practical men" of the railroads.²³⁰ Having already learned prior to the turn of the century that it was just as much in their interest to spur the production of traffic as it was to carry it, railroad leaders distributed USDA

and college publications and dispensed other information that would help boost farm productivity.²³¹

The captains of transportation wanted this distribution to aid in the assimilation of farming people into a tight-knit pattern of social organization. A spokesman for the Southern Railway said in 1902 that

as the country advances in wealth, population, intelligence, and needs, the demands upon the farmers become rapidly greater and more exacting. The farmer must no more be 'behind the times' than the scientist, the manufacturer, the merchant; he must be wide-awake, expansive, and super-intelligent in his own line of business. He can not become so by communing with himself nor by thinking out alone some problem or theory for himself. No man has ideas numerous enough or big enough to enable him to stand alone or work alone.²³²

From 1904 to 1914 "educational trains" constituted a favorite tool for implementing such ideas. With railroad leaders providing cars for instruction, and with college personnel often serving as the lecture corps during 20-minute to two-day stops, these mobile "schools" addressed farm topics in a special or general fashion (e.g. giving thorough attention to a single issue or using a scatter-shot approach to many). Contemporaries frequently understood the trains as a "spectacular" way to arouse adaptation to recent developments in agriculture. Local merchants and newspapers advertised the impending arrival of the "pork train," the "wheat train," and so on.²³³

The new instructional departure received perhaps its greatest national notice when, in 1904, Perry G. Holden of Iowa's agricultural college (later the head of the International Harvester Company's extension department) cooperated with Rock Island and other railroad officials to launch his famous "seed-corn special."

That train aimed at increasing corn production by inducing the adoption of efficient seed selection and related procedures. Numerous transportation chiefs later became convinced both that the train stops were too brief to have a lasting educational impact and that Knapp's demonstration technique would better serve the cause of changing farmers' behavior. Nevertheless, in 1910, 52 railroad companies engaged wholeheartedly in the mobile activity.²³⁴

The incidence of academic and railway cooperation prompted a well-known periodical to editorialize in 1910 that eventually "the farmer will stand halfway between the agricultural college on the one hand and the great hauling forces on the other; and in close touch with both."²³⁵ Indeed, the collegiate leadership embraced opportunities to mediate railroad and other corporate influence in a way that would counter a popular perception of company malevolence. A Pennsylvania college figure noted that his colleagues recognized a "selfish interest" on the part of corporations concerned primarily with their own advancement. But the Pennsylvanian also pointed to collegiate awareness that such business establishments were "entirely legitimate" because increasingly they "have a genuine interest in rural welfare."²³⁶ College leaders allied with corporate power in the expectation of a retreat from the days when corporations often constituted agents of forceful repression.²³⁷

This alliance crystallized in 1911 in the formation of the National Soil Fertility League (NSFL). Together with the strong support of concerns like the railroads and boards of trade, midwestern bankers initiated the League. The NSFL

advisory committee, chaired by James J. Hill, included academic and business representatives.²³⁸

Speaking as its president, Howard H. Gross of Chicago emphasized the League's demand for the state and federal "funds necessary so that the State Agricultural Colleges may carry extension work into every county." In the counties, Gross continued, "the farmers themselves" would, if "assisted by soil experts," strive to supplant the local action previously advanced by "private corporations."²³⁹ League officials copied the GEB and other corporate appropriation of Knapp's agent-demonstration technique and made the method the cornerstone of their proposal for an American system of diffusion.²⁴⁰

On various occasions before the national land-grant association, Gross stressed that "the great interests are tremendously in earnest in this matter of agricultural extension," that "a trained man . . . should go into a community and stay there," and that the NSFL would help start an attempt to place such a professional "in every county ultimately -- not at first, but ultimately." He claimed the League had mobilized an impressive array of supporters to ensure the success of its endeavor.

Five hundred Chambers of Commerce and other organizations are back of us in this movement; 1,088 leading newspapers are supporting it; seven of the largest banks in the United States have sent out special letters to their correspondents with special circulars, asking them to get busy and enlist other instrumentalities in the work.²⁴¹

While college leaders reconciled themselves to the use of Knapp's technique,²⁴² such business support sparked the political momentum that resulted in the passage of a national extension law.²⁴³

The Smith-Lever Act and the "Organized Form of Life"

A product of the joint authorship of representatives of the AAACES, NSFL, and USDA, the Smith-Lever Act "for cooperative agricultural extension work" between the colleges and the federal Department received President Woodrow Wilson's signature on May 8, 1914.²⁴⁴ The Act used customary liberal language to express its purpose as "aid in diffusing among the people of the United States useful and practical information on subjects relating to agriculture and home economics." Its definition of extension consisted "of the giving of instruction and practical demonstrations . . . to persons not attending or resident in said colleges in the several communities." It provided that this extension "work shall be carried on in such manner as may be mutually agreed upon by the Secretary of Agriculture and the State agricultural college or colleges receiving the benefits of this act."²⁴⁵

Granting the states federal appropriations that would eventually amount to over \$4 million (augmented by state, county, and other local matching funds), the Act heightened land-grant commitment to centralization by mandating that "before the funds . . . appropriated shall become available to any college . . . plans for the work to be carried on under this act shall be . . . approved by the Secretary of Agriculture." On the basis of the Secretary's review of college proposals, he would "ascertain and certify to the Secretary of the Treasury as to each State whether it is entitled to receive its share of the . . . appropriation for cooperative agricultural extension work," a provision tempered by giving the

states the right to "appeal to Congress from the determination of the Secretary of Agriculture."²⁴⁶

But triumphant centralization formed the primary feature of the law, and, although Knapp's demonstration technique now constituted the principal pedagogical device of diffusion, it no longer bore the meaning it had for the agricultural businessman. Instead of being a "practical" tool for the restoration of middle-class liberalism, the method became a useful means to incorporate practicality into a centralized system that evinced scant resemblance to the Jeffersonian localism of Knapp's attachment.²⁴⁷

A mutual Memorandum of Understanding enabled state and federal officials to administer the Act's stipulation for cooperation. The Memorandum called for the establishment of an extension division in each college under the charge of a director who would oversee collegiate relations to the USDA. In turn, the agreement prompted Department officials to create a States Relations Service to handle interaction with the colleges. Directed by Alfred True, this bureau absorbed the OES and became the conduit for federal interconnection with and supervision of state personnel.²⁴⁸

Following the precedent set by the administration of the Adams Act, the new Secretary of Agriculture, David F. Houston, largely carried out the Memorandum (and thus Smith-Lever) on the basis of the following points: (1) a definition of demonstration plans in terms of specific projects, and (2) a policy of prior approval of proposed extension ideas, that is, securing compliance with the proviso for instruction through "practical demonstrations" before funds would be

allocated.²⁴⁹ The States Relations Service assumed responsibility for executing the policy. In the process, the Service determined, for example, that "dairy demonstrations" must be partitioned into specialized projects respectively covering improvement of herds, feeding, products, and marketing. Once college authorities met such specifications, they used county agents to relay central directives to farmers.²⁵⁰

Bradford Knapp concluded in 1916 that since projects could make scientific prescriptions a part of their daily routine, farmers stood to "reap the benefits of the instruction which they were to carry out as directed by the county agent."²⁵¹ In the same year, however, R.K. Bliss, Iowa's extension director, feared that farmers' habitual reliance on the agent's "ready made plan of procedure" would induce a self-acting passivity that undermined "an agricultural people, strong, resourceful, self-reliant, independent."²⁵² Indeed, if farmers found themselves at the bottom of a vertical structure, merely executing functional tasks whose conception originated at the top of the edifice, what would become of the agrarian principle which sought to place them in charge of conceiving their own work process? Could they any longer aim for autonomous control of farming?

While the Smith-Lever Act represented a fulfillment of the earlier hope of the *Experiment Station Record* that state and federal agriculturists would "exchange . . . project plans" and practice "team work generally," and while Louisiana's extension director believed that the Memorandum of Understanding showed such mutual regard for "the success of the [extension] business" as to constitute a parallel to "the business man's idea of cooperation and agreement,"

most college leaders contented themselves with highlighting the Act's formalization of the agent as the permanent county link in a chain of state relationships extending through the colleges and culminating in the USDA.²⁵³ To various leaders, the agent could now bring this state apparatus to bear on communities that formed effective organizational subdivisions, units, or classrooms for the administration of expert guidance.²⁵⁴ Not surprisingly, the farmers' institutes, whose leadership offered seasonal instruction and who often resisted national direction, found their activity unsupported by federal Smith-Lever funding. Overshadowed by the new extension system, the institutes began to languish and fade from the scene of rural education.²⁵⁵

College leaders recognized that the emerging state apparatus signified heightened centralization in rural affairs. A Pennsylvania educator justified centralized authority by noting that it was conducive to "a minimum of lost force and a maximum of efficiency." Moreover, "If any business enterprise is to be conducted satisfactorily and efficiently, there must be a responsible source of direction or administration."²⁵⁶ Alfred True admitted in his 1914 presidential address to the AAACES that the Smith-Lever arrangement amounted to "an educational organization radically different from that followed in the public school system . . . where local initiative and control have largely obtained." For the federal law brought "with it wherever it goes the national Department of Agriculture . . . as an active coadjutor in its educational operations."²⁵⁷

Of course, the Act did not signal immediate federal penetration into all the nation's counties, much less its smaller townships and even more distant farming

neighborhoods. In the year of the law's passage, only 881 county agricultural agents worked in the country. A decade later, however, that number had increased to 2,340. Clearly, Smith-Lever laid the groundwork for contributing (in tandem with such laws as the Federal Aid Road Act) to a subsequent national enclosure of America's farming regions.²⁵⁸

In summary, while the Act incorporated practical demonstration partly as an accommodation to organized farmers and rural entrepreneurs who saw the technique as an excellent way to enhance their profitability, it also welded college and corporate leaders into a "harmonious whole." In the pursuit of the law, the former associated with the pragmatic ideals of "hard headed" captains of industry. (No one could be "legitimate" in the American universe of middle-class principles if they failed to uphold their practicality.) The collegiate leadership also availed themselves of the financial and other resources that the captains tendered for the cause of nationalized extension. Corporate figures, meanwhile, used the alliance as an opportunity to acquire the respectability that came with being the catalyst for the Smith-Lever response to a rural problem that some in the popular press described in neo-Malthusian terms.²⁵⁹

College leaders not only incorporated the demonstration technique; they also revised its meaning. This incorporation constituted a concession to middle-class anti-intellectualism that simultaneously raised the method to the plane of a higher service. As early as 1913, E.H. Jenkins of Connecticut considered that if the leadership would "wisely adjust the machinery" of extension, they could turn demonstration teaching over to an elite corps of college-trained personnel who

might "reach the thought of the farm" with manifold knowledge, including that which would enable "forecasting the industrial weather." The technique would achieve its "full measure of service" by making "farming a business for thinking men."²⁶⁰ This trickle-down professionalization of farmers' thought was the logical companion of the twofold development of meritorious expertise in research and resident instruction, and it formed the chief motif of what one author later called the "Extension Machine and the Highway of Service."²⁶¹

C.F. Curtiss of Iowa had already explained in 1908 that "the organization of the agricultural work in a land-grant college should embrace three distinct branches: (1) instruction, (2) investigation, and (3) extension." Advancement of this tripartite structure would increasingly enable the collegiate leadership to "differentiate the station from other lines of college work." And though all "three branches must of necessity be closely coordinated," the "organization should be such as to leave the workers free to devote practically their whole time to their respective lines."²⁶² One historian added that the extension teacher came to constitute the "idea salesman" of the college.²⁶³ By taking over the responsibility for selling collegiate agriculture to middle-class constituents, the extension force began to free New-Class colleagues from constraints on esoteric pursuits -- the start of a differentiated resolution of a persistent class contradiction.

This solution involved building what, in 1915, Alfred True termed an "extension enterprise" that "is becoming a very large and complicated matter," demanding "a certain hiarchy [*sic*] of responsibility and authority." True maintained that the venture's size required the USDA to exercise a careful

vigilance over "this great [extension] organization."²⁶⁴ To President Benjamin Ide Wheeler of the University of California, the new magnitude of diffusion was a cause for celebration. College leaders, he effused,

are engaged in a great undertaking. We stand at the opening of a wide door, and we look forth into vistas that reach out toward the horizon. Those who are to interpret and apply this [Smith-Lever] measure have in their hands one of the greatest mechanisms for good that was ever undertaken. We are no longer afraid of utilizing the organized form of life, call it government or what you will.²⁶⁵

In fact, the leadership had so distanced themselves from the tradition of decentralization that F.S. Cooley, Montana's extension leader, contemplated centralized authority as a "proposition" whose necessity was "too self-evident to require comment."²⁶⁶ Fresh principles of organization congealed in the thought and practice of college agriculturists.

Mechanistic Imagining and the College as Business Corporation

Mechanistic Imagining

Although functional differentiation of tripartite functions never reached the point where an agricultural faculty member could devote exclusive attention to one line of activity, during the period the trend was toward freedom to exercise such concentration.²⁶⁷ College leaders echoed President J.C. Hardy of Mississippi, who considered each of their institutions to be "as triune as the body, mind, and soul," to be "a trinity, but a unity." Not only by originating new knowledge but by teaching and diffusing it as well, the several colleges could become Hardy's organs for contributing to the creation of "a new civilization."

The Mississippian knew that this contribution involved a collegiate mission "to instill new principles, new truths, into the minds of our people."²⁶⁸ The historian of Montana's institution suggested the nature of this inculcation, noting that during World War I extension activities in that state "helped make each citizen feel he was an important cog in the machinery of the war effort."²⁶⁹

Implantation of "new principles" proceeded in the name of a mechanistic image of the world that was quite old in Occidental history. The image found some initial embodiment in the matchless design of the Egyptian pyramids and in the subsequent development of water wheels, windmills, and other inventions during the Middle Ages. By the sixteenth century people spoke of "machines" with reference to practically all structures. A century later they focused the designation on apparatuses for the application of power. At the time of the Enlightenment, a machine signified a complicated arrangement of interrelated and moving parts. Simultaneously, this signification developed in the Western imagination, particularly in that of merchants and their intellectual apologists, as an atomistic conception of the world and cosmos as functionally subdivided, harmoniously interconnected, and delightedly open to exact measurement, prediction, and control. The conception received foremost exhibition in the workings of the mechanical clock, and premier expression in the ideas of Sir Isaac Newton. Underpinned by such classic Occidental assumptions as faith in progress and belief in the preeminence of reason, by the nineteenth century the image flourished as rule-of-thumb empiricism gave way to the use of scientific knowledge in technological advance. Indeed, science seemed to hold out the

promise of realizing the Enlightenment project of synchronizing the respective operations of society and nature into a perfect order of things.²⁷⁰

In America, the advancing interconnection of technologies of transportation and communication with an expanding marketplace boded tangible realization of the imaginary world machine. At the same time, Americans frequently celebrated an organic, agrarian imagery and assumed that natural law, viewed by the nation's deistic founders as the Newtonian handiwork of Providence, would act to mitigate any disharmonies that might result from the Enlightenment penchant for industrial domination or control of nature. Many Americans trusted that this law would also harmonize mechanization and technological development with individual liberty in a peaceful and prosperous social order.²⁷¹

If "Nature is the noblest engineer," as Ralph Waldo Emerson once declared, in a fusion of mechanical and organic thinking, then the engine of economic growth might beneficially run its course in what Jefferson had happily called "Nature's nation."²⁷² But, as we have previously observed, in the late nineteenth century middle-class-motivated practices, from the exhaustion of soil to the usurpation of much of the country's wealth by corporate leaders, engendered depression, violence, and the general, if also less than total, breakdown of the emerging social machine.²⁷³

New-Class professionals responded by asserting the need to re-form the machine on the basis of their expert leadership. The work of W.J. McGee, geologist and chief conservation theorist, illustrates this type of response. Worried about the chaotic consequences of reliance on natural law and *laissez-*

faire practices, he used the pages of *The World's Work* to argue in 1907 for multiple-purpose resource management. Such administration involved, in particular, a conception of rivers as not only a vehicle of transportation, but as a means for irrigation and production of hydroelectric power as well. McGee complemented his argument by contending that waterways constituted

an interrelated system in which the several parts are so closely interdependent that no section can be brought under control without at least partial control of all other portions. . . . It is in this concept of the river as a power to be controlled by engineering projects, and at the same time as an agency of interdependent parts, that the views of the engineer and the geologist must meet and merge.²⁷⁴

McGee's certainty that such environs formed an "interrelated system," capable of being bent by expert direction toward the performance of multiple functions, led him on another occasion to affirm "a conscious and purposeful entering into control over nature, through the natural resources, for the direct benefit of mankind." Conscious management, he concluded, meant that "the perfect machine . . . is the fruit of the ages."²⁷⁵

Similarly, agricultural college leaders spoke alternately of the need for wise "adjustment of the machinery" of extension and of the desirability of "perfecting the machinery" of the tripartite apparatus.²⁷⁶ Or, following E.B. Voorhees of New Jersey, they called for "rational methods" of educational organization as a substitute for "empirical" forms that proceeded on the basis of experience.²⁷⁷ They assumed that the machine of agricultural education could operate in an orderly fashion only if controlled by them.

In light of their aim to supplant natural law with their own control, the college leadership did indeed have the "new truth" of professional supremacy to instill into the minds of their people.²⁷⁸ In the process, they contributed to a twentieth-century social practice in which Isaac Newton's thought (adapted to suit the Promethean purposes of professionalism) reached its apogee.²⁷⁹

If one merely gazed at "the dynamo, the 20th century ocean liner and the Brooklyn bridge," Whitman Jordan averred in 1903, he or she could readily grasp how they impressed fellow observers in such a way as to "arouse our pride, fire our imagination and stimulate our ambition." These creations embodied applications of a scientific method that "exemplifies and exalts obedience to the divine edicts and moves to reverent worship."²⁸⁰ This exaltation suggested the divinity both of science and of its material achievements in the form of various machines -- a fitting elevation in a time characterized by preoccupation with the efficient operation of social life, as evidenced in such catch phrases as the "cult of efficiency," the "gospel of efficiency," and "efficiency and uplift."²⁸¹

Concern for the efficient working of machines and the machinery of society reached a fever pitch that one historian has called "a secular Great Awakening."²⁸² Across social sectors, New and Middle-class reformers might extol the business or commercial efficiency of an advantageous balance sheet, the mechanical and technical efficiency of a properly managed individual plant, the economic efficiency of a productive order, or the social efficiency of harmonious relations that competent leaders generated through sophisticated designs of administrative organization.²⁸³

Eugene Davenport of the University of Illinois indicated that perhaps all senses of efficiency should be subsumed under a concept of "universal efficiency," a notion that pointed to a social order wherein each "human machine" received training to undertake the function best suited to it.²⁸⁴ Mechanistic imagining seemingly knew no bounds. As if to confirm that it did not, in 1909 the USDA issued a report on "The Influence of Muscular and Mental Work on Metabolism and the Efficiency of the Human Body as a Machine."²⁸⁵

Agricultural college leaders considered the tripartite organization, with its careful subdivision into short courses, four-year and graduate degree programs, substations, main stations, and extension divisions, to be a stupendous machine. C.E. Thorne of Ohio State University did not believe he was exaggerating the significance of the threefold apparatus when he asked fellow leaders to appreciate both the magnitude of the structure (its promise as a contributory mainspring of a bountiful food system) and their responsibility for the direction of it: "I would impress upon your minds the fact that you are charged with the piloting of the mightiest engine of human development and progress that has been loosed upon the earth since the advent of Christianity."²⁸⁶ Professionals now piloted the world machine.

While contemplating the rise of "this great machinery" of agricultural extension, Alfred True made it clear that the principal pilots of the tripartite mechanism resided in the USDA's States Relations Service. After a year of grappling with the administration of the Smith-Lever Act, he noted that

I have been very busy for some time in assembling the parts of this machine and getting an ample supply of gasoline, so that it will be very active in its operations, and also a good supply of oil, so that it will run smoothly; and we [in the Service] have tried to take into account that it may be well for us to have a very generous supply of this latter material, so that we may furnish it in ample quantities to those who may be in need of it.²⁸⁷

No one, he continued, could guide Smith-Lever progress as effectively as those in the Service; because

we are in the position of persons who are studying this extension movement not simply with reference to its development in a single state, but with reference to its development throughout the country and throughout the world, and for a considerable time one of our important functions, as we look at it, will be to study this matter so closely and definitely that we can have a very comprehensive view of the whole matter and thus be able to make suggestions and to exert ourselves in helpful ways with reference to the whole enterprise.²⁸⁸

The New-Class ideal of establishing an Olympian supervision over collective behavior approached realization in regions of agricultural education.

Under the direction of L.E. Reber, an Olympian comprehensiveness infused the design for the administration of lectures, literature, and correspondence courses that comprised much of the Wisconsin idea's university extension. Reber proposed to administer instruction by dividing the state into districts, each to be placed in the charge of a superintendent and accompanying specialistic assistants.²⁸⁹ The proposal's all-embracing sweep of Wisconsin aroused pride in Reber, prompting him to compare the plan "to a great wheel of which the hub is the university, the rim the boundaries of the State, and the spokes the lines which divide the whole into districts." An added bonus of the design was its

reliance on specialists who would facilitate the creation of an extension organization that "so differentiates and distributes the work that there is no longer the necessity . . . to find men who unite in their individual persons a large number of qualifications."²⁹⁰

Reber's agricultural counterparts shared his conception of outlying practice. In 1915, for example, Bradford Knapp thought it appropriate to view all extension methods as "parts of one piece of machinery which ought to work together, no part of which fills the place of the other parts, but each of which is a complement to the other." He motioned for the conveyance of this mechanistic image to the countryside where it would help guide farming people "out of the old individualistic type of country life into the community type of country life."²⁹¹ This implicit notion of communities-as-machines was consistent with a collegiate self-image that depicted the colleges, in the words of an Arizona leader, as "great dynamos" bent on producing fundamental change in rural affairs.²⁹²

Although agricultural scientists occasionally voiced objection to being cogs in a machine that threatened to replace the individual spark of creative research with an assembly line mode of investigation that conformed the scientist to mechanical rules and regulations,²⁹³ the investigators simultaneously accepted the era's evolutionary determinism that inverted human freedom to build machinery into a natural fate wherein the machine constructed humanity. C.E. Marshall of Michigan posed the determination that few felt they could resist.

Society, association, and combinations of effort have been instrumental in throwing him ['man'] into a new whirlpool of intricacies from which he is helpless to extricate himself,

even if he had the wish. Man, therefore, no longer acts the part of a free individual, but analogously, he acts only as an atom required in the making of a molecule -- never free, following the laws of affinity and combination, responsible neither to himself nor to his fellow-man, but controlled by those higher, regulating laws which govern and direct mass action.²⁹⁴

Marshall concluded that since the present age demanded the "harmonious co-operation of many specialists," individuality was significant solely in terms of its exercise as a differentiated specialty -- "individuality within the unity of effort."²⁹⁵

Though the college leadership might fear the reduction of individuals to cogs in the wheel, they did not dispute the summons to "good team work" that one leader confronted them with.²⁹⁶ Such calls signified the embrace of the organized cooperation of a mechanical order. This mechanism carried the freight of distasteful reminders of factory and bureaucratic routine, but college agriculturists quelled their own distaste by reciting the system's necessity until mechanistic determinism became an assumption taken for granted, a congealed reflex in collegiate thought and practice.²⁹⁷ Yet the helmsmen also engaged in the inverted thinking that prized professional freedom to manage the course of the social machine.

This management beckoned for reformulation of the meaning of democracy itself. Kenyon Butterfield spearheaded the redefinition. In later years, he noted that the new mechanistic society relied on the direction of meritocratic specialists who marked a departure from egalitarian heritage. He then observed the agrarian attachment to this legacy, and asked, "Will farmers use experts?"

Perhaps not; for "the old idea of democracy stressed that all men are equal. Consequently the average man might be considered capable of performing all the offices of democracy. This doctrine has a powerful hold upon the American farmer."²⁹⁸

But, Butterfield continued, the tenet connoted "a false equality" that would "level all men to the same talent." "A true equality," however, recognized "an inherent tendency toward aristocracy. At its best this tendency lies at the root of ambition to excel." And although this propensity entailed the danger of erecting disproportionate advantages for some in the race of life, there was greater hazard in holding "that the man without special fitness or even without special training can do a certain piece of work as well as the one who has fitness or training or both." For new imperatives of complex organization meant that only experts knew what was needed to make "democracy efficient." Specialists also cornered understanding of how to administer each farming locality as a "unit of democracy" in the efficient society.²⁹⁹ Butterfield could have added that farms, too, required meritorious guidance toward a reality where they served less as semi-autonomous republics, and more as efficiently administered cogs in the wheel.

Meanwhile, Theodore Roosevelt had already sounded his theme that "in the modern industrial world [business] combinations are absolutely necessary" and unavoidable because of their indispensability to "the highest industrial productivity and efficiency." Indeed, he ventured, "There is every reason why our executive governmental machinery should be at least as well planned, economical, and

efficient as the best machinery of the great business organizations."³⁰⁰ Agricultural college leaders and many other academicians echoed such proclamations and prepared to emulate the business corporation in order to demonstrate that it did not stand alone as an important embodiment of the image of the machine.³⁰¹

The College as Business Corporation

Using metaphor and analogy, a major historian of American higher schooling issued the following description of the organizational development of advanced institutions:

By the beginning of the First World War the apparatus of the organized [college and university] institution was complete. On one assembly line the academicians, the scholars, were at work: from time to time they left their assembly line long enough to oil and grease the student assembly line. This was the least they could do, and it is probable that lectures could do little else. Above them, around them were the managers -- the white-collared, chief executive officers and their assistants. The absentee stockholders, sometimes called alumni; the board of directors, at some places called the trustees or overseers; the untapped capital resources, known as benefactors and philanthropic foundations; the regulatory agencies and the commissions in charge of standards -- by the First World War they were, on one level, what was meant by higher education in the United States.³⁰²

On another level, most in the academy consented to this corporation-like accomplishment because of accompanying advances in library, laboratory, and other facilities. Always the disenchanted minority, critics such as Thorstein Veblen mounted the accusation that administrators lodged these utilities in organizations that did not respect the "pure," disinterested pursuit of higher learning. Instead, the managers manifested regard for a commercial

self-aggrandizement that showed in the desire to construct ostentatious buildings, in the practice of obeisance to athletics, and in the worship of marketing-acquired prestige.³⁰³ Veblen sensed a kind of reification in this imitation of business conduct: "Pecuniary standards of merit and efficiency are habitually applied to men as well as to things, and with little less freedom and finality."³⁰⁴ Aside from their seeming capitulation to commercialism, higher educational practices proceeded on the basis of new principles of social organization.

The vertically and horizontally integrated corporation embodied centralization of authority in the form of top management, incarnated the priority of institution over individual in the form of permanent offices that particular persons temporarily occupied, and embraced fragmentation of functions in the form of multiplex, partially detached business units. This last principle grounded the establishment of semi-independent enterprises that yielded the pride of individual proprietorship (illustrated in the subsequent history of "franchises"), while still operating under a central control whose reach they decentralized. Functions were diffused. Authority was not.³⁰⁵

Actions and ideas of agricultural college leaders exemplified the effort in higher schools to establish institutions on the same principles as those of the corporation. In the final years of the period, the AAACES Committee on College Organization and Policy requested that the Bureau of Education of the United States Department of the Interior both undertake a survey of existing practices in the nation's agricultural colleges and issue recommendations for administrative

organization.³⁰⁶ The Bureau's eventual suggestions included calls for centralized management, for attempts "to distinguish between the office and the individual," and for college leaders to exercise care in partitioning "the functions of their respective offices."³⁰⁷

In 1917 the Committee accorded official approval of the proposals, an action that gave formal sanction to ideas the leadership had trumpeted for years.³⁰⁸ For example, C.A. Duniway of Wyoming had already proclaimed his belief "in the principle of centralization of responsibility and adequate authority for the solution of problems of university control."³⁰⁹ And in 1910 Eugene Davenport had summoned his colleagues to "remember that the office never leaves the institution though the officer may leave it."³¹⁰

Especially after 1914, the offices of the tripartite apparatus -- led by those of the president or dean who presided over those of the three divisional directors who, in turn, coordinated departments of agricultural specialization whose faculty divvied up responsibility for resident instruction, research, and extension in such a way as to allow each member measurable freedom to apply specialized knowledge to the matters of a single division -- tended to constitute a permanent structure that concentrated authority and diffused functions.³¹¹ This tendency gathered fuel from the passage of the Smith-Lever Act. The law served, following the implication of one land-grant historian, to expand the meaning of the 1862 Morrill Act by completing the foundation of a tripodal system that became, respectively, the means for "the popularizing of its [the organic law's] appeal," the method for "the centralizing of its administration," and the medium for "the decentralizing of its operation."³¹²

Moreover, as F.B. Linfield of Montana noted, the emerging tripartite arrangement signified that the land-grant institutions were leaving the "pioneering stage" of their development. They now embraced an organization for "efficient service," one that surpassed the erstwhile custom in which "the man in the agricultural department was supposed to cover the whole field of practice, in the various special departments of the work."³¹³

Born of mutual attachment to the vertical world of hierarchy, the professional principles that underlay the tripartite structure welded comfortably with the assumptions that undergirded the framework of the corporation. At the turn of the century, the *Experiment Station Record* delivered commentary that prefigured the time when the respective structures would share greater homogeneity of design. Speaking particularly to agricultural scientists, the *Record* announced that

the [professional] specialization, which is simply a form of the division of labor well-known in industrial pursuits, carries with it a necessity for combination of workers in educational and scientific institutions as well as in manufacturing establishments. In a way hitherto unknown scientific men will be called in the future to work together for common ends.³¹⁴

On the basis of fragmented or specialized functions that central authority could coordinate into a workable whole, college leaders moved in the direction of what Beverly Galloway, a USDA representative turned dean of agriculture at Cornell, termed "the organization of team work," the centrally engineered "spirit of cooperation."³¹⁵

While Thorstein Veblen mocked university extension's role as a "boyish imitation" of corporations that "frequently bring under one general business management a considerable number and variety of industrial plants,"³¹⁶ most college leaders welcomed agricultural extension's emulative function. The rise of collegiate diffusion so crystallized college resemblance to corporate organization that President Patrick Hues Mell of South Carolina stepped beyond the reserve of analogy and declared to AAACES conventioners that the leadership must be

prepared for the proposition, viz, the college is a business corporation, engaged in the prosecution of enterprises which must be conducted in accordance with business principles and methods if successful results are to be secured. Therefore it should be well governed and controlled, and an individual head [president] is essential to good and satisfactory management. The American college is rapidly becoming a complicated business concern.³¹⁷

Speaking for many of those assembled, President Winthrop Stone of Indiana said, "I fancy there will not be much diversity of opinion in this body as to the conclusions drawn by the writer [Mell] of the paper just presented."³¹⁸

To William Daniel Hurd, Butterfield's extension director in Massachusetts, the tripartite apparatus demonstrated a pattern of development that could be

likened in its growth to that of any great business enterprise. First we have the inventor (who can be compared to the investigator in the station), then comes the manager of the producing end of the business (the college teacher) and lastly, the sales manager and sales agent, on whom, in the final analysis, the success of the business depends. It takes a peculiar type of man for each place. Seldom can the one do the work of the other well.³¹⁹

This organizational design amounted to little more than a structure of mechanical atomization. Each individual found a subdivided "place" wherein to exercise a function of consequence to the overall effectiveness of the establishment. Notably, inventors, former champions of liberalism's individual freedom, now became subject to incorporation into the organizational converse of that heritage. And although subsequent college history filled with collegiate salutations to the value of liberal individualism,³²⁰ these gestures only obscured a decisive shift of Morrill-Act agency from individuals to institutional groupings -- a new priority on organization that signified the arrival of land-grant participation in a distinctive corporate liberalism.

In the 1870s college leaders might have shared Jonathan Turner's repudiation of corrupt corporations that "get hold of other people's property without their consent and without a just equivalent," a seizure that worked "an unspeakable damage and curse . . . to the whole country."³²¹ But in the context of the early twentieth century, when corporate leaders manifested the intention of surpassing such a primitive form of rule, the collegiate leadership embraced the concerns as helpful allies and appropriated their methods of organization in the building of institutions that stood increasingly as embodiments of the Newtonian world machine as a business corporation. Perhaps, then, college helmsmen might be expected to clasp the view expressed by John Hamilton who, in 1905, looked toward the countryside and said that the colleges must go there like "manufacturing establishments in their sending out representatives with samples of their goods to exhibit before the purchasing public."³²²

Endnotes

¹Business initiation of this revolution is discussed in Samuel P. Hays, The Response to Industrialism, 1885-1914 (Chicago: University of Chicago Press, 1957), 48-49. The content of the revolution is developed in the narration below. On the decline of Populism as an opening for the business strata to propel their own forms of organization, see Lawrence Goodwyn, Democratic Promise: The Populist Moment in America (New York: Oxford University Press, 1976), ch. 17.

²The growth of various business organizations is treated in Robert H. Wiebe, Businessmen and Reform: A Study of the Progressive Movement (1962; rpt., Chicago: Quadrangle, 1962), 18-21.

³Quoted in *Ibid.*, 18.

⁴See *Ibid.*, 193.

⁵Figures for 1897 to 1903 are from Thomas C. Cochran, The American Business System: A Historical Perspective, 1900-1955 (1957; rpt., New York: Harper Torchbooks, 1957), 58-59. The estimate for 1895 to 1905 is in Glenn Porter, The Rise of Big Business, 1860-1910 (Arlington Heights: AHM, 1973), 78. For 1919 data, see Harold U. Faulkner, The Decline of Laissez-Faire (New York: Holt, Rinehart and Winston, 1961), 155.

⁶An excellent description of emerging corporate control of technology is in David F. Noble, America by Design: Science, Technology, and the Rise of Corporate Capitalism (New York: Oxford University Press, 1977), pt. 1.

⁷Quoted in Philip S. Foner, The Policies and Practices of the American Federation of Labor, 1900-1909, vol. 3 of History of the Labor Movement in the United States (New York: International Publishers, 1964), 11.

⁸Timing of the abatement of depression is in Cochran, 22; and data on earnings of and strikes by workers are from Foner, Policies and Practices of the American Federation of Labor, 13-14, 27.

⁹For the points on the Civic Federation, see James Weinstein, The Corporate Ideal in the Liberal State: 1900-1918 (Boston: Beacon, 1968), xiv-xv, 4-91 *passim*, particularly 35.

¹⁰D.H. Hill, "Changes in College Attitudes," AAACES, Proc. (1915), 177.

¹¹W.O. Thompson, "Annual Address of the President of the Association -- Some Problems in the Colleges of Agriculture and Mechanic Arts," AAACES, Proc. (1905), 36.

¹²Note the critique of this pattern in the presentation of "the philosophy of the corporate state" by Joel H. Spring, Education and the Rise of the Corporate State (Boston: Beacon, 1972), ch. 1; and the class tradeoff that helped to advance it is a prominent theme in Edward T. Silva and Sheila Slaughter, "Prometheus Bound: The Limits of Social Science Professionalization in the Progressive Period," Theory and Society 9 (November 1980): 784-805.

¹³This appraisal and suggestion can be read from Stuart Ewen and Elizabeth Ewen, Channels of Desire: Mass Images and the Shaping of American Consciousness (New York: McGraw-Hill, 1982), 15, 27.

¹⁴Quoted in Wiebe, Businessmen and Reform, 196.

¹⁵Henry Adams, The Education of Henry Adams: An Autobiography (1918; rpt., Boston: Houghton Mifflin, 1961), 499, 344, broached the answer that all social and industrial achievements increasingly "condensed into corporations." To his way of thinking, this process rested on one important assumption and could lead to only one unfortunate conclusion: "Once admitted that the machine must be efficient, society might dispute in what social interest it should be run, but in any case it must work [corporate] concentration."

¹⁶On the New-Class conception of a social machine, see Donald Stabile, Prophets of Order: The Rise of the New Class, Technocracy and Socialism in America (Boston: South End Press, 1984), 2.

¹⁷Frederick W. Taylor, "The Dedication of the Engineering Building of the University of Pennsylvania: A Comparison of University and Industrial Discipline and Methods," Science 24 (November 1906): 580.

¹⁸These divergent paths to coordination are discussed in R. Jeffrey Lustig, Corporate Liberalism: The Origins of Modern American Political Theory, 1890-1920 (Berkeley: University of California Press, 1982), 32-33.

¹⁹Quoted in *Ibid.*, 29-30.

²⁰Adams, 499, saw in 1905 that although an intensified machine age produced "power never yet wielded by man," and "speed never reached by anything but a meteor," it also "made the world irritable, nervous, querulous, unreasonable and afraid." In the same year the Manifesto of the syndicalist union, the Industrial Workers of the World, proclaimed that the following underside constituted the reality overlooked in positive expressions of the

mechanistic vision: "The great facts [emphasis in original] of present industry are the displacement of human skill by machines and the increase of capitalist power through concentration in the possession of the tools with which wealth is produced and distributed. . . . As human beings and human skill are displaced by mechanical progress [emphasis added], the capitalists need use the workers only during that brief period when muscles and nerves respond most intensely. The moment the laborer no longer yields the maximum of profits, he is thrown upon the scrap pile, to starve alongside the discarded machine." Quoted in Ewen and Ewen, 30-31.

²¹We can infer from Weinstein, ch. 4; and Robert H. Wiebe, The Search for Order, 1877-1920 (New York: Hill and Wang, 1967), 170, that aspirations to realize the vision energized the movement to create city commission and manager forms of government. And Donald J. Pisani, "Reclamation and Social Engineering in the Progressive Era," Agricultural History 57 (January 1983): 53-58, observes the presence of mechanistic imagining in engineers who worked for the Reclamation Service out of the United States Department of the Interior. Moreover, as Pisani cites him, Representative Francis G. Newlands of Nevada, who sponsored the Reclamation Act of 1902, spoke fondly of the twentieth century as the "age of the engineer," called for study of "the human machine," and hoped that reclamation efforts would mean "collectivism will be employed with great economic advantage in comprehensive plans covering town development, sanitation, and architecture" (pp. 53, 54).

²²Quoted in Wayne E. Fuller, "The Rural Roots of the Progressive Leaders," Agricultural History 42 (January 1968): 8.

²³For a helpful categorization of the era's complex and diverse range of reformers, see Daniel T. Rodgers, "In Search of Progressivism," The Promise of American History: Progress and Prospects, eds. Stanley I. Kutler and Stanley N. Katz (Baltimore: Johns Hopkins University Press, 1982), 123-127. Note, in particular, Rodgers' mention of the work of John Dewey in the area of schooling and that of Jane Addams in social welfare. Both sought to raise concern for "the innocent casualties of industrialism (women and child workers, the victims of industrial accidents, the involuntarily unemployed)" (p. 125). In sharp contrast, advocates of efficiency spoke "the new language of budgets, human costs, and system" (p. 126). Richard L. McCormick, "The Discovery that Business Corrupts Politics: A Reappraisal of the Origins of Progressivism," The American Historical Review 86 (April 1981): 259-274, casts the muckraking attacks on corporations as ironic servants of centralized power. By discrediting unregulated business, they supplied support to professional experts who wanted to exercise greater administrative supervision of private affairs. From McCormick's angle, the muckrakers had the effect of advancing aims other than the democratic ones that historiographic literature traditionally attributed to them.

²⁴Quoted in Wiebe, Businessmen and Reform, 189; and for a discussion of the relationship between the size of a concern and the values of its owner, see pp. 10-14.

²⁵See *Ibid.*, 193; and n. 24 above.

²⁶On contradictions in the business community, see *Ibid.*, 180. Woodrow Wilson provided a notable example of interior contradiction. On the one hand, he valued organization as "a great engine," with its components "so assembled and united and accommodated that there is no friction, but a united power in all the parts." Quoted in Rodgers, 125. On the other hand, he feared that the "new organization" of America would undermine "ideals of absolutely free opportunity." Quoted in Richard Hofstadter, The Age of Reform: From Bryan to F.D.R. (New York: Vintage, 1955), 225.

²⁷Quoted in Hofstadter, Age of Reform, 223.

²⁸Elmer Ellsworth Brown, "Development of Agricultural Education," AAACES, Proc. (1907), 52.

²⁹Editorial, ESR 34 (1916): 401, 402, 403.

³⁰Principal opposition to Taylor has often been seen as arising from workers. For qualifications of this view that take into account the resistance of employers, see Stabile, 36-38, 45-51; and Peter F. Meiksins, "Scientific Management and Class Relations: A Dissenting View," Theory and Society 13 (March 1984): 181, 183. For greater detail on scientific management, see ch. 4, sec. 2 below.

³¹Quoted in Stabile, 46.

³²J.M. Hamilton, "Relative Amounts of Pure and Applied Science in the Land-Grant Colleges," AAACES, Proc. (1906), 75. Hamilton used these comments on the market as a justification for the furtherance of "applied" science.

³³On the understanding of the market as an extra-human force propelling concentration, see David W. Noble, The Progressive Mind, 1890-1917 (Chicago: Rand McNally, 1970), 152-153.

³⁴Interestingly, New-Class figures held the contradictory notion that the extra-human market needed the application of their very human regulatory direction. See sec. 5 below.

³⁵Lustig, 79-83, observes the transmutation; while Richard Hofstadter, Social Darwinism in American Thought, rev. ed. (Boston: Beacon, 1955), ch. 3, pp. 202-203, notes the receding yet persistent strength of Social Darwinism. He

elucidates its combination of extreme individualism and superorganicism by focusing on the thought of William Graham Sumner.

³⁶President R.W. Silvester, Discussion, AAACES, Proc. (1899), 95.

³⁷The blend of organic and mechanistic imagery, its embodiment in the corporation, and the organizational concentration of individual atoms are suggested in D.W. Noble, ch. 3, pp. 152-153.

³⁸Data on the number of farms, farm population, and counties are in David B. Danbom, The Resisted Revolution: Urban America and the Industrialization of Agriculture, 1900-1930 (Ames: Iowa State University Press, 1979), 3. Prior to 1920 the Census Bureau defined "rural" as both the farm population and those who inhabited towns and villages with fewer than 2,500 residents. This definition made it difficult to distinguish between farmers and rural people who engaged in other economic activities. See Gilbert C. Fite, American Farmers: The New Minority (Bloomington: Indiana University Press, 1981), 3.

³⁹Efforts to uphold the autonomy of the family amid its increasing dependence on production for the commercial market are observed in the articles in Steven Hahn and Jonathan Prude, eds., The Countryside in the Age of Capitalist Transformation: Essays in the Social History of Rural America (Chapel Hill: University of North Carolina Press, 1985), *passim*. The issue of that commercialization is treated less extensively in Fite, 3. Danbom, Resisted Revolution, 5, 9-18, emphasizes that mixed activities mitigated the need to make off-farm purchases. He also describes farming neighborhoods, the limited acceptance of county government, and the wish to restrain the governmental reach of larger regencies.

⁴⁰E.R. Eastman's retrospective comments from 1927, quoted in Danbom, Resisted Revolution, 12.

⁴¹The rarity of telephones and good roads is noted in T.N. Carver, "The Organization of a Rural Community," USDA, Year. (1915): 121-123. Willard W. Cochrane, The Development of American Agriculture: A Historical Analysis (Minneapolis: University of Minnesota Press, 1979), 223-224, discusses the Federal Aid Road Act; while A.C. True, "Government Service for Agriculture in the United States," Farm and Community, vol. 4 of Cyclopedia of American Agriculture, ed. L.H. Bailey, 5th ed. (New York: Macmillan, 1917), 481, observes the path of rural-free delivery of mail; and Fite, 18, mentions the beginning of parcel post.

⁴²Carver, "Organization of a Rural Community," 122. For a comparable critique, see T.N. Carver, "The Organization of Rural Interests," USDA, Year. (1914): 239-252.

⁴³Charles Roads, Rural Christendom, or the Problems of Christianizing Country Communities (Philadelphia: American Sunday-School Union, 1909), 124, originated this notion and it is borrowed by Danbom, Resisted Revolution, 18, 30.

⁴⁴The double signification is adapted from Danbom, Resisted Revolution, 16-22. On the embrace of republican egalitarianism, see the manifestation of it in Scott G. McNall and Sally Allen McNall, Plains Families: Exploring Sociology Through Social History (New York: St. Martins, 1983), ch. 3.

⁴⁵Quoted in Danbom, Resisted Revolution, 17.

⁴⁶Cochrane, 111, 100, discusses population and productivity rates and the Golden Age; while Danbom, Resisted Revolution, 5, notes the use of draft animals and primitive tools.

⁴⁷Edward A. Rumeley, "The Passing of the Man with the Hoe," Readings in the Economic History of American Agriculture, eds. Louis Bernard Schmidt and Earle Dudley Ross (New York: Macmillan, 1925), 368.

⁴⁸This desire did not mean that farming people enjoyed the often painful toil of farm life. Many urban Americans argued over whether husbandry was unmitigated drudgery or a haven for romantic pastoral repose. It is probable that the farming masses would have taken neither side in the debate and would have insisted only that the relative autonomy of their families and neighborhoods was worth a measure of toilsome sacrifice. For comments that touch on the argument, see Fite, 9-14; and for the likely view held by the masses, see Danbom, Resisted Revolution, ch. 1.

⁴⁹Another reason could be found in the attractions of urban opportunities. The exodus culminated, in any event, when the 1920 census reported a first in the nation's history: A majority -- 51.4 percent -- of Americans now lived away from rural areas. See Fite, 8-9, 13-14. On the changing base of agricultural productivity, see Cochrane, 100-101, 106-110, 341-343; and for an excellent discussion of the tractor, see John T. Schlebecker, Whereby We Thrive: A History of American Farming, 1607-1972 (Ames: Iowa State University Press, 1975), ch. 17, particularly p. 202.

⁵⁰After Henry Ford initiated the Model T in 1909, and after country roads improved, the automobile eventually helped to undermine local markets by enabling farming people to travel to those in metropolitan centers. See Joseph Interrante, "You Can't Go to Town in a Bathtub: Automobile Movement and the Reorganization of Rural American Scape, 1900-1930," Radical History Review, no. 21 (Fall 1979): 151-166, particularly p. 156. Siegfried Giedion, Mechanization Takes Command: A Contribution to Anonymous History (New York: Oxford University Press, 1948), 162-168, particularly pp. 162-163, suggests the symbolic

significance of the tractor: its hallmark as a leading representative of forces that gradually upped the cost of investment beyond the means of many localities.

⁵¹See Danbom, Resisted Revolution, 36-42. Kenyon L. Butterfield, "Farmers' Social Organizations," ed. Bailey, Farm and Community, 290, saw the problem as the fruit of the disconnection of farming people from national organization.

⁵²Quoted in Danbom, Resisted Revolution, 39.

⁵³See *Ibid.*, 36-37, 42.

⁵⁴J.L. Snyder, Agriculture and Democracy: An Address Delivered by the President of the Association of American Agricultural Colleges and Experiment Stations, Agricultural College Bulletin 3, no. 4 (East Lansing: Michigan State Agricultural College, 1908), 5.

⁵⁵Hofstadter, Age of Reform, 31; and Louis H. Douglas, ed., Agrarianism in American History (Lexington, MA: D.C. Heath, 1969), vii, refer to agricultural fundamentalism as that body of values which raised the countryside to a position of virtue and self-sufficiency that cities could not match. The concept connotes the independence of yeoman farmers and the nation's dependence on them for its survival and well-being.

⁵⁶Snyder, 7, 10, 9, 14.

⁵⁷William L. Bowers, The Country Life Movement in America, 1900-1920 (Port Washington: Kennikat, 1974), ch. 5, pp. 24-26, 62, 104, notes that the Movement also stressed, among other things, the retention of soil fertility and the revamping of outlying aesthetics, churches, and schools. He adds that it had no precise date of origin, but when President Theodore Roosevelt established the Commission on Country Life in 1908 the Movement received its greatest moment of national attention. The Commission consisted of seven appointees: the chairman, Liberty Hyde Bailey of Cornell University; Kenyon L. Butterfield of Massachusetts Agricultural College; Gifford Pinchot, head forester in the United States Department of Agriculture; Walter Hines Page, editor of *The World's Work*; Henry Wallace, editor of *Wallace's Farmer* and a prominent agricultural leader in the Midwest; Charles S. Barrett, president of the Farmers' Cooperative and Educational Union of America; and William A. Beard, editor of the *Great West Magazine*. These men used questionnaires, personal correspondence, and hearings in order to analyze rural society and ground recommendations that called for the adjustment of farming people to a nation increasingly characterized by industrial interdependence. On the purpose of the Movement and the Commission, see also Danbom, Resisted Revolution, 44-47.

⁵⁸On the relation of Country Life to "progressive" reformers, see Bowers, 4, 16, 27-29; and Danbom, Resisted Revolution, 46-47.

⁵⁹George Betts and Otis Hall quoted in Danbom, Resisted Revolution, 48.

⁶⁰The worries of Country Lifers are captured in *Ibid.*, ch. 2; while Butterfield, "Farmers' Social Organizations," 289-290, comments on the mass isolation from mainstream socializing influences. Bowers, 69-70, discusses the agricultural ladder and provides data on tenancy. Note that James Turner, "Understanding the Populists," The Journal of American History 67 (September 1980): 358-367, views isolation as one of the major factors involved in decisions to affiliate with Populism. Though Turner scarcely speculates on subsequent developments, it is probable that twentieth-century reformers concluded that if people were out of reach, they were also out of control.

⁶¹See Robert L. Morlan, Political Prairie Fire: The Nonpartisan League, 1915-1922 (Minneapolis: University of Minnesota Press, 1955), ch. 1; and James R. Green, Grass-Roots Socialism: Radical Movements in the Southwest, 1895-1943 (Baton Rouge: Louisiana State University Press, 1978), chs. 1-8.

⁶²Charles McCarthy quoted in Danbom, Resisted Revolution, 49.

⁶³Quoted in *Ibid.*, 41-42.

⁶⁴Butterfield, "Farmers' Social Organizations," 290, 291.

⁶⁵Warren H. Wilson quoted in Danbom, Resisted Revolution, 50.

⁶⁶The composition of the Commission is detailed in n. 57 above. Data on land-grant development are from Edward Danforth Eddy, Jr., Colleges for Our Land and Time: The Land-Grant Idea in American Education (New York: Harper, 1956), 114, 116; and Gladys L. Baker et al., Century of Service: The First One Hundred Years of the United States Department of Agriculture (Washington: USDA, Centennial Committee, 1963), 55-56, provide a concise description of OES functions.

⁶⁷E.P. Powell, "What the Agricultural Colleges Are Doing," The Independent 66 (April 1909): 801, 802.

⁶⁸Quoted in Eddy, 116.

⁶⁹See *Ibid.*, ch. 5, particularly p. 147; and Joseph Bailey Edmond, The Magnificent Charter: The Origin and Role of the Morrill Land-Grant Colleges and Universities (Hicksville: Exposition Press, 1978), chs. 4-6.

⁷⁰The amount of Carnegie's gift is mentioned in David N. Smith, Who Rules the Universities? An Essay in Class Analysis (New York: Monthly Review Press, 1974), 98; while other points in the paragraph are noted in William Graebner, "The Origins of Retirement in Higher Education: The Carnegie Pension System," Academe, March 1979: 97-98.

⁷¹Quoted in Ellen Condliffe Lagemann, Private Power for the Public Good: A History of the Carnegie Foundation for the Advancement of Teaching (Middletown: Wesleyan University Press, 1983), 57.

⁷²Pritchett's professionalism and his conception of engineering are treated in *Ibid.*, ch. 3, pp. 19-23, 29-30, 57.

⁷³Quoted in *Ibid.*, 40, 41.

⁷⁴A unit was any one of four subjects taken five days a week during a high school year. See D.N. Smith, 100-102.

⁷⁵The withholding of pension benefits, the shift to standardized tests, and the creating of an educational ladder are observations derived from Lagemann, 94-100.

⁷⁶Quoted in Graebner, 99.

⁷⁷On the furnishing of cosmopolitan vision, see especially H.L. Russell, "Exchange of Instructors in Agricultural College Work," AAACES, Proc. (1915), 103; and the push for doctoral study is highlighted in Bailey, Farm and Community, 448-449.

⁷⁸W.M. Hays, Discussion, AAACES, Proc. (1911), 134.

⁷⁹J.C. Hardy, Discussion, AAACES, Proc. (1912), 135.

⁸⁰On the struggle to satisfy the demand for trained agriculturists, see Eddy, 115. As late as the second decade, H.J. Wheeler, "The Training of Men in Station and College Work," AAACES, Proc. (1912), 104-107, observed the persistent urgency of attracting and retaining capable teachers. Requests for CFAT acceptance are noted in "Report of the Executive Committee," AAACES, Proc. (1907), 19-20; "Report of the Executive Committee," AAACES, Proc. (1907), 17; and "Report of the Executive Committee," AAACES, Proc. (1909), 16.

⁸¹R.T. Crane, The Utility of All Kinds of Higher Schooling (Chicago: Henry O. Shepard, 1909), 278, 302, 282.

⁸²E. Davenport, "The American Agricultural College," AAACES, Proc. (1913), 160; and Eugene Davenport, "The College of Agriculture as a Public Service Institution," Rutgers College: The Celebration of the One Hundred and Fiftieth Anniversary of Its Founding as Queen's College, 1766-1916 (New Brunswick: Rutgers College, 1917), 261.

⁸³Lagging rural high schools and the pace of development regarding entrance requirements are noted in Eddy, 84-85; while Charles W. Dabney, Agricultural Education, ed. Nicholas Murray Butler, Monographs on Education in the United States, no. 12 (Albany: J.B. Lyon, 1904), 28-29, deals with varying standards in different regions and institutional types.

⁸⁴Henry S. Pritchett, "Carnegie Foundation," AAACES, Proc. (1909), 50, 51.

⁸⁵Carnegie Foundation for the Advancement of Teaching, Fourth Annual Report of the President and of the Treasurer (New York: Carnegie Foundation for the Advancement of Teaching, 1909), 97, 102, 101, 98, 103, 105.

⁸⁶*ibid.*, 101.

⁸⁷W.J. Kerr, "Some Land Grant College Problems," AAACES, Proc. (1911), 38, 47.

⁸⁸W.O. Thompson, "The Influence of the Morrill Act upon American Higher Education," AAACES, Proc. (1913), 91.

⁸⁹A.B. Storms, "The Field and Functions of the Land-Grant Colleges," AAACES, Proc. (1906), 68, 69.

⁹⁰*ibid.*, 69, 68.

⁹¹Eddy, 117, intimates that the Foundation's decision served as such a spur; but Lawrence Robert Mann, "The National Association of State Universities and Land-Grant Colleges: A Political Interest Group and Its Congressional Relations, 1887-1958" (Ph.D. diss., University of Illinois, 1979), 68-69, uses his extensive investigation into Association documents as a basis for the judgment that it definitely did.

⁹²A.W. Harris, "Address by the President of the Association," AAACES, Proc. (1902), 43.

⁹³A.B. Storms, Discussion, AAACES, Proc. (1910), 71.

⁹⁴C.E. Thorne, "Presidential Address: The Progress of Education and Research in Agriculture," AAACES, Proc. (1917), 50.

⁹⁵Eddy, 120-121, notes the customary emphasis on productive subjects. The rural problem as an impetus for tentative beginnings in socio-economic studies can be inferred from Earle D. Ross, "Contributions of Land-Grant Education to History and the Social Sciences," Agricultural History 34 (April 1960): 56-57. See also the observation of Harry C. McDean, "Professionalism in the Rural Social Sciences, 1896-1919," Agricultural History 58 (July 1984): 379, 381, that rural social scientists (many of whom inhabited the agricultural colleges) maintained "elitist views of themselves" that might "have flowed from their formal university education" (p. 379). Their elitism gave them "a mind set" indisposed to being "impressed by revolutionary theories or movements" (p. 381).

⁹⁶C.A. Duniway, "Economic Science in Agricultural and Mechanical Colleges," AAACES, Proc. (1915), 96, 95.

⁹⁷Kenyon L. Butterfield, "The Leadership of the Agricultural College," The Independent 65 (August 1908): 368; and Kenyon L. Butterfield, Chapters in Rural Progress (Chicago: University of Chicago Press, 1907), 237. To gather the repetition with which Butterfield argued for expert coordination, see also K.L. Butterfield, "The Social Phase of Agricultural Education," AAACES, Proc. (1905), 56-61; and Kenyon L. Butterfield, "Agricultural Economics as a Subject of Study in the Agricultural College," OES, Report (1904), 713-718. Butterfield wanted to see the synchronization of the disparate reform activities of the rural church, school, press, and the like.

⁹⁸Winthrop E. Stone, "President's Address," AAACES, Proc. (1913), 55.

⁹⁹For details on the formation, development, and purpose of these committees, see Alfred Charles True, A History of Agricultural Education in the United States, 1785-1925, U.S. Department of Agriculture, Miscellaneous Publication no. 36 (Washington: GPO, 1929), 214-218. For a quick but thorough review of them, see A.C. True and Dick J. Crosby, The American System of Agricultural Education, OES, Circular no. 106 (1911), 5-6, 12.

¹⁰⁰The particulars on the summer graduate school are from True, History of Agricultural Education, 233-239. Especially useful commentary on the aim of the school is in A.C. True, "The Graduate School of Agriculture as a Means of Improving the Pedagogical Form of Courses in Agriculture," AAACES, Proc. (1903), 61-65. True saw that the 1902 session stimulated "the proper sense of the professional dignity of the agricultural teacher" (p. 65). Still, perhaps the best summary of the school's purpose is contained in OES, Report (1907), 236-240, 248.

¹⁰¹"Report of Committee on Graduate Study -- Graduate School of Agriculture at the University of Illinois, 1906," AAACES, Proc. (1907), 49.

¹⁰²Margaret W. Rossiter, "Graduate Work in the Agricultural Sciences, 1900-1970," Agricultural History 60 (Spring 1986): 38-39, 44, observes the intrastate activity and provides the datum on doctorates; while W.H. Glover, Farm and College: The College of Agriculture of the University of Wisconsin. A History (Madison: University of Wisconsin Press, 1952), 261, explains that in Wisconsin the station offered such professional attractions to students. See also the observations of J.G. Lipman, "Employment of Research Assistants Who May Register as Graduate Students at the College," AAACES, Proc. (1917), 169-172. Further, note this compelling figure: From 1910-11 to 1919-20 the number of graduate degrees conferred by the agricultural colleges grew from 83 to 321 -- a full 286 percent increase. See Walton C. John, ed., History and Educational Objectives, vol. 1 of Land-Grant College Education, 1910 to 1920, U.S. Department of the Interior, Bureau of Education, Bulletin no. 30 (Washington: GPO, 1925), 39.

¹⁰³On such OES assistance, see Milton Conover, The Office of Experiment Stations: Its History, Activities, and Organization, U.S. Institute for Government Research, Service Monograph no. 32 (Baltimore: Johns Hopkins Press, 1924), 66-69.

¹⁰⁴H. Edwards, Discussion, AAACES, Proc. (1909), 63, 64.

¹⁰⁵L.H. Bailey, "Newer Ideas in Agricultural Education," Educational Review 20 (November 1900): 378.

¹⁰⁶*Ibid.*, 379.

¹⁰⁷On the short course in Mississippi, see John K. Bettersworth, People's University: The Centennial History of Mississippi State (Jackson: University of Mississippi, 1980), 134-135. Vernon C. Larson, "The Development of Short Courses at the Land Grant Institutions," Agricultural History 31 (April 1957): 31-33, provides the 1917 datum and is particularly good on the Wisconsin-style courses; while D.J. Crosby, "The Correlation of Secondary and Short Courses with the Four Years' Course," AAACES, Proc. (1911), 137-140, is especially insightful on the two-year variety. The observation regarding the tendency to view the most abbreviated courses as kindred to off-campus extension is adapted from C.F. Curtiss, "The Short Practical Course; Its Value and Importance," AAACES, Proc. (1907), 90-92.

¹⁰⁸"Report of the Committee on College Organization and Policy," AAACES, Proc. (1912), 69, 68.

¹⁰⁹Eugene Davenport, "Scientific Farming," The Annals of the American Academy of Political and Social Science 40 (March 1912): 47, discusses the contribution of Darwin to agricultural research; and Margaret W. Rossiter, The

Emergence of Agricultural Science: Justus Liebig and the Americans, 1840-1880 (New Haven: Yale University Press, 1975), 172-175, observes that of Liebig. On European examples, the Moeckern station, and the nature and influence of the independent stations, see H.C. Knoblauch et al., State Agricultural Experiment Stations: A History of Research Policy and Procedure, U.S. Department of Agriculture, Miscellaneous Publication no. 904 (Washington: GPO, 1962), 14-17, 20-24, ch. 4. For a definition of the extra-collegiate stations as related to those in the colleges, see ch. 2, n. 106 above. And the Connecticut laboratory is detailed in Walter Stemmons, Connecticut Agricultural College--A History (Storrs: Connecticut Agricultural College, 1931), 212-216.

¹¹⁰Such organizations might include associations of grain dealers, corn growers, dairymen, and the like. Along with farmers, businessmen made demands primarily because research-driven increases in farm production meant increases in profitable trade. For perhaps the best discussion of these and other issues bearing on professional-clientele relations in agricultural investigation, see Charles E. Rosenberg, No Other Gods: On Science and American Social Thought (Baltimore: Johns Hopkins University Press, 1976), ch. 9, particularly pp. 162-163, 165.

¹¹¹This appeasement and the basic reason for it are suggested in *Ibid.*, 162-163, 165-166.

¹¹²Editorial, ESR 18 (1907): 3.

¹¹³The vocal station minority is noted in *Ibid.*, 2-3. The German sympathy and advanced schooling of such researchers are discussed in Rosenberg, 167-168. For an excellent treatment of the representative voice, intellectual lineage, and professional aspirations of Jordan and Armsby, see Knoblauch et al., 67, 75-78, 82-88.

¹¹⁴Henry Prentiss Armsby, "Research as a Career: Presidential Address," SPAS, Proc. (1907), 12, 13, 15.

¹¹⁵*Ibid.*, 20, 19.

¹¹⁶W.H. Jordan, Discussion, AAACES, Proc. (1911), 159.

¹¹⁷Thorstein Veblen, The Higher Learning in America: A Memorandum on the Conduct of Universities by Business Men (New York: B.W. Huebsch, 1918), chs. 1, 6, particularly pp. 5, 10, celebrated idle curiosity as "the sense that a knowledge of things is sought, apart from any ulterior use of the knowledge so gained" (p. 5). All station personnel, on the other hand, always retained the conviction that such uses were the ultimate objective of science. See the discussion immediately below and Rosenberg, 168, 170.

¹¹⁸See ch. 2, n. 223 above. For an argument that upholds high standards of professional autonomy without relinquishing an accompanying emphasis on service, see also Henry Prentiss Armsby, "The Promotion of Agricultural Science: Presidential Address," SPAS, Proc. (1906), 7-20.

¹¹⁹W.H. Jordan, "President's Address: Values in Science," SPAS, Proc. (1903), 22, 26, 23.

¹²⁰W.H. Jordan, "President's Address: The Promotion of Agricultural Science," SPAS, Proc. (1902), 32, 33. And David B. Danbom, "The Agricultural Experiment Station and Professionalization: Scientists' Goals for Agriculture," Agricultural History 60 (Spring 1986): 249, indicates that station researchers found themselves caught between client conceptions of "applied" investigation and elite scientific ideas of "basic" work. If they departed too much from either view, they faced the scorn of both.

¹²¹W.H. Jordan, "The Authority of Science," AAACES, Proc. (1907), 62.

¹²²See Danbom, "Agricultural Experiment Station and Professionalization," 252-254; and Rosenberg, 170, notes that the distancing also received earlier expression.

¹²³Eugene Davenport, "The Constituency of the Experiment Station," letter, Science 37 (June 1913): 908.

¹²⁴W.H. Jordan, "Presidential Address," AAACES, Proc. (1912), 42.

¹²⁵The categories of station personnel and the data on the number who engaged in college teaching are from OES, Report (1902), 33-34; OES, Report (1904), 23; and OES, Report (1906), 155.

¹²⁶Rosenberg, 156-159, discusses the consequences of the Hatch Act, the performance of collegiate functions, and the distraction of various client demands.

¹²⁷See *ibid.*, 159-160. W.A. Lloyd, "Development of the Extension Ideal in the Association of Land-Grant Colleges and Universities," The Spirit and Philosophy of Extension Work: As Recorded in Significant Extension Papers, ed. R.K. Bliss (Washington: Graduate School, U.S. Department of Agriculture and Epsilon Sigma Phi, 1952), 25-26, observes the extension practice of the stations:

¹²⁸On the position of Jordan and Armsby, see, for example, W.H. Jordan, "American Agricultural Experiment Stations," AAACES, Proc. (1901), 47; and H.P. Armsby, "How Much Teaching, If Any, Is It Desirable that a Station Worker Should Do?" Discussion, AAACES, Proc. (1905), 130. The OES tried to build support for

non-dispersal by circulating Report of Committee on Station Organization and Policy, OES, Circular no. 82 (1908), 1-10, particularly 8-10. Addition to the chorus for investigative autonomy is inferred from Rosenberg, 165-166.

¹²⁹For suggestions to this effect, see Knoblauch et al., 86-88.

¹³⁰W.H. Jordan, "Presidential Address," 42, 44, 45.

¹³¹The compromise allowed the split, but on the condition that the presidents retain final control of overall AAACES policy and endorsements. Perhaps the best presentation of the respective concerns in the fissure is in Knoblauch et al., 66-76. Still, one should not neglect Mann, 70-71; nor Charles M. Hardin, Freedom in Agricultural Education (1955; rpt., New York: Arno, 1976), 135.

¹³²Rosenberg, 166, 174, notes both the influence of Atwater on True, and the strategic determination of OES leaders to peg one-half of the scientist-client resolution in enhanced station autonomy. Alfred Charles True, A History of Agricultural Experimentation and Research in the United States, 1607-1925, U.S. Department of Agriculture, Miscellaneous Publication no. 251 (Washington: GPO, 1937), 165-170, comments respectively on the AAACES resolution, the contribution of Henry, the drafting of a bill, and the parliamentary maneuvering.

¹³³The text of the Adams Act can be found in numerous documents. Here it is quoted in OES, Report (1907), 58, 59. True, History of Agricultural Experimentation, 170, mentions the date of Roosevelt's signature and the income the law provided. Eddy, 125, discusses the Act's furtherance of centralization.

¹³⁴Excellent discussions of the Act's administration are in Rosenberg, 182-183; Eddy, 125-126; and True, History of Agricultural Experimentation, 171-172. Knoblauch et al., 162, refer to the audit powers as a precedent for policy under the new law.

¹³⁵Editorial, ESR 17 (1906): 933.

¹³⁶See Rosenberg, 175-179.

¹³⁷Osborne's exemplification is noted in *Ibid.*, 183, 187-190.

¹³⁸E.W. Allen, "Administration of Experiment Station Work by Projects," AAACES, Proc. (1915), 235.

¹³⁹On the enforcement of the planning disposition, see the suggestive comments in Rosenberg, 183.

¹⁴⁰Substations tended to be permanent, small-scale enterprises situated in local settings. Demonstration farms, on the other hand, might consist in a variety of methods of contracting with farmers for the temporary use of their land in experimental undertakings. See H.L. Russell, "Branch Experiment Stations," AAACES, Proc. (1913), 179-181; Eugene Davenport, "Cooperative Experiments in Illinois," OES, Report (1903), 503-505; and T.F. Hunt, Discussion, AAFIW, Proc. (1908), 50-52.

¹⁴¹Following C.E. Thorne et al., "How Much Demonstration Work and What Kind Should the Experiment Station Undertake?" Discussion, AAACES, Proc. (1906), 171-184, it is evident that station scientists expressed some consternation concerning the function of outlying test plots: At what point did the plots cease performance as confirmation of the acquisition of new knowledge? At what point did they become a popular demonstration of established truth? Ronald L. Nye, "Federal vs. State Agricultural Research Policy: The Case of California's Tulare Experiment Station, 1888-1909," Agricultural History 57 (October 1983): 437-442, forms a good basis for judging that branch activity represented a concession to constituent interests. But Russell, "Branch Experiment Stations," 179, stresses the scientific recognition of the problems posed by diverse conditions.

¹⁴²OES policy on the finance of various branch activities is adapted from Nye, 442-443; while the view of some work as extension and the offer to help build distinct staffs are inferred from Rosenberg, 183-184.

¹⁴³Scientists also manifested the strategy in the creation of two types of station bulletins -- an elementary edition for constituents, and a technical issue for investigators. See F.H. Hall, "Popular Editions of Station Bulletins," AAACES, Proc. (1913), 192-195. The 1913-14 datum is from True, History of Agricultural Experimentation, 210.

¹⁴⁴See, for example, Nye, 439, 448-449.

¹⁴⁵E.B. Voorhees, "The Relations of the Experiment Station to Extension Work," SPAS, Proc. (1908), 37.

¹⁴⁶A.F. Woods, "Relation of the Experiment Stations to Regulatory Work," AAACES, Proc. (1917), 276.

¹⁴⁷See Association of American Agricultural Colleges and Experiment Stations, Report of Commission on Agricultural Research (N.p.: n.p., 1908), 11-12. The Commission consisted of Whitman Jordan, Henry Armsby, David Starr Jordan of Stanford University, Carroll Davidson Wright of Clark College, and Gifford Pinchot of the USDA.

¹⁴⁸Gifford Pinchot quoted in *ibid.*, 21.

¹⁴⁹David Starr Jordan et al. quoted in *Ibid.*, 23, 22.

¹⁵⁰On its embodiment of this call for centralized coordination, see Knoblauch et al., 113, 125-126. Notably, the AAACES Committee on Station Organization and Policy served as a similar incarnation.

¹⁵¹See *Ibid.*, 113, 126. Note, in particular, Edwin Allen's later expression of this view (p. 126).

¹⁵²B.T. Galloway, "Relation of the United States Department of Agriculture to the Agricultural Colleges and Experiment Stations," AAACES, Proc. (1914), 120.

¹⁵³On research in the industrial laboratories, see Noble, America by Design, 110-121. David Noble, "Corporate Roots of American Science," Science and Liberation, eds. Rita Arditti, Pat Brennan, and Steve Cavrak (Boston: South End Press, 1980), 67, notes that ideas flowed freely between corporate and land-grant leaders. The group notion probably constituted no exception.

¹⁵⁴H.T. French, "Duplication of Work by the Experiment Stations," AAACES, Proc. (1907), 100.

¹⁵⁵Note the pooling of expertise to handle such operations as cost-cutting, process-testing, and quality control in the electrical and chemical industries discussed by Noble, America by Design, 111-118.

¹⁵⁶J.C. Kendall, "Correlation of the Work of Experiment Stations in Regions with Similar Conditions," AAACES, Proc. (1917), 280.

¹⁵⁷R.J.H. DeLoach, "Team Work in Agricultural Science," SPAS, Proc. (1915), 57, 55, 56, 58, 61 [emphasis in original].

¹⁵⁸A Cartesian research tradition celebrated the heroic efforts of the secluded individual, and contrasted with a Baconian tradition that emphasized state-supported group action to redress problems in social development. See Lawrence Busch and William B. Lacy, Science, Agriculture, and the Politics of Research (Boulder: Westview, 1983), 7-8.

¹⁵⁹W.A. Henry, "The Agricultural College and the State: A Plea for a New Division of College and Station Workers," AAACES, Proc. (1907), 96-97.

¹⁶⁰*Ibid.*, 97.

¹⁶¹The initiation of institutes is treated in Roy V. Scott, The Reluctant Farmer: The Rise of Agricultural Extension to 1914 (Urbana: University of Illinois Press, 1970), 58-63. On the contribution of businessmen, particularly that of rural

merchants, see John Hamilton, comp., History of Farmers' Institutes in the United States, OES, Bulletin no. 174 (1906), 52-56, 60-64, 83. The basic motive for business involvement was comparable to that cited in n. 110 above. And an excellent synopsis of the origin of agricultural extension is in Edmund deS. Brunner and E. Hsin Pao Yang, Rural America and the Extension Service: A History and Critique of the Cooperative Agricultural and Home Economics Extension Service (New York: Bureau of Publications, Teachers College, Columbia University, 1949), 2-3.

¹⁶²This statement is adapted from Brunner and Pao Yang, 3; and Scott, Reluctant Farmer, 58-59.

¹⁶³Quoted in Scott, Reluctant Farmer, 59.

¹⁶⁴See *Ibid.*; and for an example of this support in a particular state, see John Hamilton, History of Farmers' Institutes, 44.

¹⁶⁵From Eddy, 104-105, we learn that New Jersey's extension department, established in 1891, probably formed the first regular division of its kind in the nation. Eddy also points out that during the 1890s college leaders increased their participation in farmers' institutes. Moreover, perhaps indicating the slowness with which the collegiate leadership accepted outlying work, the word extension did not crop up in the Proceedings of the AAACES until 1894. See Lloyd, 27.

¹⁶⁶We can infer from Bailey, Farm and Community, 449, that some college leaders preferred to keep a distance from extension work for fear that its practicality would reflect adversely on professional aims for research and resident instruction.

¹⁶⁷[W.A.] Henry, Discussion, AAACES, Proc. (1905), 113.

¹⁶⁸Allan Nevins, The State Universities and Democracy (Urbana: University of Illinois Press, 1962), 94-98, notes that President Charles R. Van Hise of Wisconsin sought in the first decade to use extension to "convert" his "institution into a people's university, the old ideal of Jonathan B. Turner" (p. 98). On professionalized practicality and the high conception of service as a source of legitimacy in "popular" eyes, see A.C. True, "Popular Education for the Farmer in the United States," USDA, Year. (1898): 279-280.

¹⁶⁹J.C. Hardy, "President's Address," AAFIW, Proc. (1906), 24.

¹⁷⁰True, "Popular Education for the Farmer," 290.

¹⁷¹Scholars have frequently assumed that farmers' institutes constituted merely a variety of college extension. See, for example, Eddy, 104-105; Thomas Leslie Riley, "The Development of Extension in the Land-Grant Universities, 1862-1914" (Ph.D. diss., University of Chicago, 1965), 138-139; and Richard S. Kirkendall, "The Agricultural Colleges: Between Tradition and Modernization," Agricultural History 60 (Spring 1986): 10, 12. However, following the historical discussion of institute control in F.S. Cooley, "President's Address," AAFIW, Proc. (1917), 22-24, it is clear that farmers struggled, particularly in eastern states where the founding of meetings antedated that of the colleges, to establish the autonomy of the assemblies, to secure their independence from collegiate direction. Eddy, 105, mentions the extent of institute operation in 1899. On the length and location of meetings, see G.I. Christie, "The Relation of Farmers' Institutes to Organized Extension Work in Agriculture," AAFIW, Proc. (1915), 106; and Danbom, Resisted Revolution, 70. L.H. Bailey, Farmers' Institutes: History and Status in the United States and Canada, OES, Bulletin no. 79 (1900), 31, provides a succinct description of the modes of institute control; while John Hamilton, History of Farmers' Institutes, 18-96 *passim*, offers information that sustains the observation regarding collegiate reliance on local residents to successfully undertake meetings. And the 1903 data are from Alfred Charles True, A History of Agricultural Extension Work in the United States, 1785-1923, U.S. Department of Agriculture, Miscellaneous Publication no. 15 (Washington: GPO, 1928), 32.

¹⁷²See New Hampshire Board of Agriculture, "Institutes at Hollis, Hudson, and Meredith," Changes in Farming (Continued), vol. 2 of Agriculture in the United States: A Documentary History, ed. Wayne D. Rasmussen (New York: Random House, 1975), 1367; and Butterfield, Chapters in Rural Progress, 92.

¹⁷³On local control, see Butterfield, Chapters in Rural Progress, 96. The nature of institute audiences is discussed in OES, Report (1909), 295. Lecturers could either be "successful farmers" with little formal schooling, or college and station faculty. See John Hamilton, History of Farmers' Institutes, 7-8. College speakers often failed to be accepted at institute meetings. O.C. Gregg, "Five-Minute Reports from Different States: Minnesota," AAFIW, Proc. (1902), 28, explained why: "My experience is that the average station man is not a good institute worker. Now the reason to my mind is manifest. A man can not talk long to an audience before they know that he has been there or he has not been there. He is inclined to use language which the average farmer does not understand. It may be, and is, all right in the class room, but is not intelligible to the farmer. We [institute leaders in Minnesota] have [station] men who can adapt themselves to an agricultural audience, but they are few."

¹⁷⁴D.W. Working, "Pledged Attendance at Farmers' Institutes," AAFIW, Proc. (1911), 40.

¹⁷⁵On the temporary nature of institutes and their occasional dependence on single individuals, see W.C. Latta, "Leading Objects and Perfecting the Organization of Farmers' Institutes," AAFIW, Proc. (1911), 37; and OES, Report (1905), 624.

¹⁷⁶Butterfield, Chapters in Rural Progress, 99 [emphasis in original].

¹⁷⁷Working, "Pledged Attendance," 41, 40.

¹⁷⁸D.W. Working, "What Plan Could Be Adopted by the Institute for Securing the Introduction and Continued Maintenance the Entire Year of a Movable School in Each State and Province?" AAFIW, Proc. (1910), 39-40.

¹⁷⁹See *Ibid.* Working proposed "movable schools" as one alternative to the lack of system in the institutes. On these schools, see the discussion of college extension below.

¹⁸⁰On Knapp's biographical background, see True, History of Agricultural Extension Work, 58-59; and "Knapp, Seaman Asahel," The National Cyclopaedia of American Biography, 28 (New York: James T. White, 1940), 401-402.

¹⁸¹The discussion to this point in the paragraph is adapted from Scott, Reluctant Farmer, 206-210.

¹⁸²Raymond B. Fosdick quoted in *Ibid.*, 210.

¹⁸³Quoted in Bliss, Spirit and Philosophy of Extension Work, 43, 42, 38.

¹⁸⁴On the credit system's imposition, see Green, 5. For a discussion of other points in the paragraph, see Scott, Reluctant Farmer, 207, 210.

¹⁸⁵This paragraph is adapted from Scott, Reluctant Farmer, 211, 214, 217.

¹⁸⁶Quoted in O.B. Martin, The Demonstration Work: Dr. Seaman A. Knapp's Contribution to Civilization, 3rd ed. (San Antonio: Naylor, 1941), 184.

¹⁸⁷See Scott, Reluctant Farmer, 212.

¹⁸⁸On the pilgrimage of the weevil, see Wayne D. Rasmussen, ed., Readings in the History of American Agriculture (Urbana: University of Illinois Press, 1960), 178. The Department's reconsideration is noted in Scott, Reluctant Farmer, 212; and True, History of Agricultural Extension Work, 60, details Knapp's campaign.

¹⁸⁹The statement regarding the fear of losing agricultural trade is adapted from True, History of Agricultural Extension Work, 60; and Scott, Reluctant

Farmer, 213, 220. A very useful work touching the emergence of the first agents is Gladys Baker, The County Agent (Chicago: University of Chicago Press, 1939), 26-29.

¹⁹⁰On the General Education Board's involvement, see Scott, Reluctant Farmer, 222-226; and Russell Lord, The Agrarian Revival: A Study of Agricultural Extension (New York: American Association for Adult Education, 1939), 68-70. The 1907 and 1912 figures are from True, History of Agricultural Extension Work, 63, 69.

¹⁹¹Both are quoted in Lord, 66.

¹⁹²U.S. Department of Agriculture, Report on Agricultural Experiment Stations and Cooperative Agricultural Extension Work in the United States, for the Fiscal Year Ended 30 June 1915, pt. 2 (Washington: GPO, 1916), 16 (hereafter referred to as USDA).

¹⁹³S.A. Knapp, "The Farmers' Cooperative Demonstration Work," USDA, Year. (1910): 160.

¹⁹⁴If we follow Eddy, 132-134, it is easy to make the facile assumption that Knapp's work formed a ready alliance with that of the collegiate leadership. Actually, Knapp preferred to use practical agents who did not have college training, resisted any kind of involvement with academics (whom he generally viewed as too bookish), and once referred to Texas college leaders as "immensely narrow and fault finding." Quoted in Scott, Reluctant Farmer, 219. See also Gladys Baker, 32; and Lord, 66. Gladys Baker, 31-32, notes that the college leadership frequently responded in kind. They doubted the value "of the crude methods of demonstration used by the individual farmers" (p. 31). Even as late as 1913, Utah's E.G. Peterson, Discussion, AAACES, Proc. (1914), 265, observed a persistent collegiate censure: "Strong criticism is expressed, especially by experiment station directors and by other people engaged in older and more formal agricultural work, against the county agent, on the ground that his work is essentially superficial." Finally, Scott, Reluctant Farmer, 220-221, tends to support the observation that organized farmers, rather than the mass of "reluctant" farming people, proved most receptive to agent efforts.

¹⁹⁵"Report of Committee on Extension Work," AAACES, Proc. (1907), 71. On the lyceum and Chautauqua influences, see Eddy, 106; and True, History of Agricultural Extension Work, 42-43.

¹⁹⁶Indeed, to a far greater extent than farmers' diffusion, university extension aimed to promote respect for the value of expertise in giving social life rational order, a quality that academicians presumably secured in the classroom. Harper infused this purpose into his avid support of correspondence instruction. See

Riley, 110-265 *passim*; Lyman P. Powell, "Ten Years of University Extension," The Atlantic Monthly 88 (September 1901): 393-394; and the discussion of the "Wisconsin idea" immediately below.

¹⁹⁷Lawrence A. Cremin, The Transformation of the School: Progressivism in American Education, 1876-1957 (New York: Alfred A. Knopf, 1961), 161-162, 164-165, 168, provides a concise description of the elements of the idea; while Stuart Morris, "The Wisconsin Idea and Business Progressivism," Journal of American Studies 4 (July 1970): 44, 50, indicates that McGovern, unlike his predecessor, Robert La Follette, grasped its technocratic possibilities. La Follette thought that experts could regulate corporate conduct and thereby protect the egalitarian promise of an earlier time. Nevins, 96, gives the detail on the professor of transportation.

¹⁹⁸A.A. Hoogenboom quoted in Morris, 45.

¹⁹⁹F.J. Goodnow quoted in *Ibid.*, 51.

²⁰⁰C.D. Smith, "Annual Address of the President," AAFIW, Proc. (1902), 16.

²⁰¹On the school in Chautauqua County and the spread of the courses, see USDA, 168-170. The 1911-12 datum is from "Report of the Committee on Extension Work," AAACES, Proc. (1913), 61. For an excellent discussion of the characteristics of the schools, see E.A. Burnett, "Extension Schools in Agriculture," AAACES, Proc. (1911), 189-190.

²⁰²Burnett, 192, 190.

²⁰³OES, Report (1913), 352, 353.

²⁰⁴John Hamilton, History of Farmers' Institutes, 11-12, 15, discusses the origin and purpose of the Association of Institute Workers; while John Hamilton, Form of Organization for Movable Schools of Agriculture, OES, Circular no. 79 (1908), 3-8, describes movable schools. On segregated meetings for youth, see John Hamilton and J.M. Stedman, Farmers' Institutes for Young People, OES, Circular no. 99 (1910), 5-16. And True, History of Agricultural Extension Work, 33, provides useful information on normal institutes.

²⁰⁵"Agricultural College Extension," editorial, The Independent 71 (December 1911): 1347. The collegiate desire for redefinition is discussed in "Report of Committee on Cooperation with Other Educational Agencies," AAFIW, Proc. (1912), 11-12; and W.C. Latta, "The Special Province of the Farmers' Institute Meeting in Extension Work," AAFIW, Proc. (1913), 22-23.

²⁰⁶John Hamilton, "Form of Organization for Farmers' Institutes," AAFIW, Proc. (1906), 79, 80. And on the Association's approval of Hamilton's plan, see Riley, 244-246.

²⁰⁷Alfred True quoted in John Hamilton, "The Farmers' Institutes," USDA, Year. (1904): 151.

²⁰⁸Hamilton proceeded with his coordinating activities by visiting states and offering plans to facilitate cross-regional correlation. On this activity and Hamilton's prior service at Pennsylvania State, see Conover, 73; and Wayland Fuller Dunaway, History of the Pennsylvania State College (Lancaster: Pennsylvania State College, 1946), *passim*.

²⁰⁹A.C. True, "The Farmers' Institute as a Medium for Developing the Mutual Interests and Relations of Farmers and the United States Department of Agriculture," AAFIW, Proc. (1902), 104.

²¹⁰1917 comments quoted in Danbom, Resisted Revolution, 76.

²¹¹John Hamilton, "The Status of Agricultural Extension in the United States and in Other Countries," College Extension in Agriculture: Discussions Before the Graduate School of Agriculture at the Iowa State College, Ames, Iowa, 4 July to 27 July 1910, ed. Hamilton, OES, Bulletin no. 231 (1910), 20 [emphasis in original].

²¹²J.L. Ellsworth, "President's Address," AAFIW, Proc. (1910), 7.

²¹³Tait Butler, "President's Address," AAFIW, Proc. (1909), 9.

²¹⁴For the datum on collegiate control, see True, History of Agricultural Extension Work, 32.

²¹⁵"Report of Committee on Institute Organization and Methods," AAFIW, Proc. (1912), 7.

²¹⁶Quoted in Editorial, ESR 18 (1907): 103.

²¹⁷*Ibid.*, 101.

²¹⁸These reasons for the emerging alliance are suggested in Scott, Reluctant Farmer, 188-189, 205. Scott, however, tempers judgments regarding collegiate willingness to be identified with businessmen's attachment to immediate practicality.

²¹⁹A.M. Soule, "The Sphere of Agricultural Extension," ed. John Hamilton, 49, 48.

²²⁰Franklin Dye, "Annual Address of the President," AAFIW, Proc. (1913), 20.

²²¹D.N. Smith, 105, notes that this motion for systematization included emphasis on encouraging the elimination of duplication and waste, and on securing efficient operation. True, History of Agricultural Extension Work, 61, provides the amounts of Rockefeller's gifts. On the grants, see also D.N. Smith, 104.

²²²True, History of Agricultural Extension Work, 61-62, discusses the determination to use the demonstration method to augment tax revenue; while Wallace Buttrick, "Origin and Development of the Work," Education in the South: Abstracts of Papers Read at the Sixteenth Conference for Education in the South Held at Richmond, Virginia, 15 Apr. to 18 Apr. 1913, U.S. Department of the Interior, Bureau of Education, Bulletin no. 30 (Washington: GPO, 1913), 27-28, elaborates on the desire to bring attention to the technique as the best way to change farm customs. Scott, Reluctant Farmer, 225, observes GEB contributions in non-weevil infested states.

²²³General Education Board, The General Education Board: An Account of Its Activities, 1902-1914 (New York: General Education Board, 1915), 24 (hereafter referred to as GEB).

²²⁴Bradford Knapp's turn to the colleges is noted in Scott, Reluctant Farmer, 227. On the Clemson agreement, see True, History of Agricultural Extension Work, 72.

²²⁵GEB, 22. And USDA, 17, notes the mid-1914 federal supersession of GEB funds.

²²⁶These two things are specifically highlighted in True, History of Agricultural Extension Work, 73.

²²⁷Scott, Reluctant Farmer, 272, notes that "limitation of funds prevented the college [at Cornell] from participating in the Binghamton enterprise except to provide technical advice." On the cooperative arrangement, see also Gladys Baker, 33; and True, History of Agricultural Extension Work, 73.

²²⁸James J. Hill provided another spur to business involvement. In 1911 he hired a University of Wisconsin "soils expert" who appropriated Seaman Knapp's techniques in work with North Dakota and Minnesota farmers. On this appropriation, the catalytic effect of the Broome venture, and Rosenwald's stipulations, see Scott, Reluctant Farmer, 185, 187-188, 263-264, 267. Also presenting useful

information on Rosenwald's offer, but with less detail regarding his accompanying conditions, is Gladys Baker, 34.

²²⁹This list is adapted from Scott, Reluctant Farmer, ch. 7, pp. 265-266.

²³⁰W.J. Spillman, "Five-Minute Reports from States and Provinces: Washington," AAFIW, Proc. (1902), 44.

²³¹They also employed college professors to write railroad bulletins. On this and the motivation for various distributive efforts, see Roy V. Scott, "American Railroads and Agricultural Extension, 1900-1914: A Study in Railway Developmental Techniques," Business History Review 39 (1965): 77-85, particularly 79, 85. For an excellent examination of railroad motives at work in a particular state, see also Roy V. Scott, "Railroads and Farmers: Educational Trains in Missouri, 1902-1914," Agricultural History 36 (January 1962): 14.

²³²M.V. Richards, "The Relation of Railroads to Agriculture," AAFIW, Proc. (1902), 108.

²³³Scott, "American Railroads and Agricultural Extension," 81-85, suggests the period when the trains achieved peak popularity, and notes the spectacular way in which they operated; while H.M. Cottrell, "Agricultural Instruction Trains," AAFIW, Proc. (1912), 39-40, provides important primary insight into details of railroad-college cooperation, special versus general instruction, and methods of advertising particular trains. Duration of stops is observed in OES, Report (1905), 599; and John Hamilton, The Transportation Companies as Factors in Agricultural Extension, OES, Circular no. 112 (1911), 6.

²³⁴On Holden and the turn of the transportation chiefs toward Knapp's demonstration technique, see Scott, "American Railroads and Agricultural Extension," 81-82, 86-92. Holden himself discusses his work in OES, Report (1905), 598-599. And the 1910 datum is from John Hamilton, Transportation Companies as Factors in Agricultural Extension, 6.

²³⁵"The Railroad and the Farmer," editorial, The Independent 69 (July 1910): 47.

²³⁶M.S. McDowell, "Cooperation with Other Agencies in Agricultural Extension," AAACES, Proc. (1914), 254.

²³⁷That time was not yet receding. As if to prove that corporate leaders could remain unenlightened regarding the futility of using force as a secure anchor for social order, John D. Rockefeller, Jr., colluded in 1913-14 with Colorado Governor Elias M. Ammons in using the National Guard to suppress a strike against the Rockefeller-dominated Colorado Fuel and Iron Company.

When Guardsmen burned a strikers' tent colony at Ludlow, two women and 11 children died in the infamous "Ludlow massacre." The event scandalized many Americans and prompted college leaders to later disassociate themselves from GEB funding. Weinstein, 191-198, deals with the Colorado occurrence; while Scott, Reluctant Farmer, 312-313, notes the collegiate response.

²³⁸On the initiation of the NSFL, see Gladys Baker, 36; and True, History of Agricultural Extension Work, 107. Scott, Reluctant Farmer, 290; and Howard H. Gross, The National Soil Fertility League (Chicago: n.p., 1911), 1, are particularly good on the composition of the advisory committee.

²³⁹Gross, National Soil Fertility League, 2 [emphasis in original].

²⁴⁰See *Ibid.*

²⁴¹H.H. Gross, Address, AAACES, Proc. (1913), 103, 104; and H.H. Gross, Discussion, AAACES, Proc. (1912), 204-205.

²⁴²Previously, as observed in n. 194 above, they disparaged the unprofessional character of Knapp's work. But they eventually accepted the demonstration technique when it became clear that they could join extra-collegiate forces in controlling its implementation, and when it became evident that they could secure the professional training of agents. See the discussion of the Smith-Lever Act's "cooperative" features immediately below; and Scott, Reluctant Farmer, ch. 11 *passim*.

²⁴³This judgment regarding the catalytic effect of NSFL and other business support is sustained by the evidence presented in True, History of Agricultural Extension Work, 107; Scott, Reluctant Farmer, chs. 6-7; and Gladys Baker, 36-37.

²⁴⁴The text of the Smith-Lever Act can be found in numerous documents. Here it is quoted in USDA, 355. On its authorship and the date of its signing, see True, History of Agricultural Extension Work, 108, 113.

²⁴⁵Quoted in USDA, 355.

²⁴⁶Quoted in *Ibid.*, 356, 357.

²⁴⁷Eddy, 141-143, discusses the centralization that resulted from the Smith-Lever Act.

²⁴⁸On the Memorandum of Understanding, see True, History of Agricultural Extension Work, 117-120.

²⁴⁹Demonstration became the main but not the exclusive teaching technique of extension. Collegiate forms of diffusion continued, albeit usually with state funds. See *Ibid.*, 120-122, 126.

²⁵⁰On the role of the States Relations Service, see *Ibid.*, 117, 123-124, 127-134. Perhaps the best discussion of project partitioning is in C.D. Jarvis, "Planning Extension Work by Means of Definite Written Projects," AAACES, Proc. (1915), 258-260. Bradford Knapp, "The Written Project System (b) as Affecting the Work of County Agents," AAACES, Proc. (1917), 331-334, observes the intermediary position of the agents.

²⁵¹B. Knapp, "Written Project System," 333.

²⁵²R.K. Bliss, "The Written Project System (b) as Affecting the Work of County Agents," AAACES, Proc. (1917), 337.

²⁵³Editorial, ESR 29 (1914): 605; and W.R. Dodson, "The Written Project System (a) as Affecting Cooperative Relationships," AAACES, Proc. (1917), 325. The agent's function as such a link is a common observation in land-grant literature. See, for example, Clarence Beaman Smith and Meredith Chester Wilson, The Agricultural Extension System of the United States (New York: Wiley, 1930), 1-2, 9-13.

²⁵⁴See A.C. True, "The Preparation Required for Extension Work in Agriculture," AAACES, Proc. (1915), 162; and C.A. Keffer, "County Organization of Extension Work in Agriculture and Home Economics," AAACES, Proc. (1915), 216.

²⁵⁵On the lot of the institutes, see True, History of Agricultural Extension Work, 122; and Scott, Reluctant Farmer, 312.

²⁵⁶McDowell, 252, 253.

²⁵⁷A.C. True, "Presidential Address," AAACES, Proc. (1915), 87.

²⁵⁸The data on county agricultural agents are from C.B. Smith, "Ten Years of Extension Work Under the Smith-Lever Act, 1914-24," ed. Bliss, 247. For an excellent presentation of figures covering a greater range of time, see the graph in C.B. Smith and Wilson, 3.

²⁵⁹See, for example, the discussion of the Smith-Lever bill as a response to the rural problem in "Promoting Farming Efficiency," editorial, The Literary Digest 48 (February 1914): 309-310. The Digest declared that if farm production did not keep pace with the nation's growing number of people, the United States would face "a condition where it will be unable to feed its own population" (p. 310).

²⁶⁰E.H. Jenkins, "Presidential Address," AAACES, Proc. (1914), 66, 67, 63.

²⁶¹See the 1928 address: H.H. Williamson, "The Extension Machine and the Highway of Service," ed. Bliss, 126-129. Williamson applauded the county agent who held the attitude that "I will teach him [the farmer] some of the fundamentals in such a tactful manner that he will think he is teaching me" (p. 127).

²⁶²C.F. Curtiss, "Relation of the Experiment Station to Work in Instruction, with Special Reference to Its Popular Phase," AAACES, Proc. (1909), 105.

²⁶³Franklin M. Reck, The 4-H Story: A History of 4-H Club Work (Ames: Iowa State College Press, 1951), 129.

²⁶⁴A.C. True, "The Organization of Cooperative Extension Work -- Machinery and Method," Discussion, AAACES, Proc. (1915), 231.

²⁶⁵B.I. Wheeler, Discussion, AAACES, Proc. (1915), 128-129.

²⁶⁶F.S. Cooley, "The Cooperation of Farmers' Institutes with Other Educational Agencies," AAFIW, Proc. (1915), 48.

²⁶⁷The trend is observed particularly in the previous two sections above. But for a view that notes the persistence into the second half of the twentieth century of two and even threefold demands on a single faculty member, see Charles E. Kellogg and David C. Knapp, The College of Agriculture: Science in the Public Service (New York: McGraw-Hill, 1966), 6, 8.

²⁶⁸Hardy, "President's Address," 22; and [J.C.] Hardy, "Problems and Methods in Institute Work: The South," AAFIW, Proc. (1903), 87, 88.

²⁶⁹Merrill G. Burlingame, A History: Montana State University, Bozeman, Montana (Bozeman: Montana State University, 1968), 168.

²⁷⁰Lewis Mumford, The Myth of the Machine: Technics and Human Development (New York: Harcourt, Brace and World, 1966), 12, 286, 293-294, notes the embodiment in the Egyptian pyramids and mechanistic preoccupation with control; while Jean Gimpel, The Medieval Machine: The Industrial Revolution of the Middle Ages (New York: Penguin, 1976), chs. 1, 7, is especially good on the machines of the Middle Ages. Raymond Williams, Keywords: A Vocabulary of Culture and Society (New York: Oxford University Press, 1976), 167, provides sixteenth, seventeenth, and eighteenth-century definitions of the word machine. On merchants, their intellectual apologists, and the significance of the clock, see Carlo M. Cipolla, Clocks and Culture, 1300-1700 (New York: W.W. Norton, 1967), 69-72. The importance of Newton to the atomistic conception is handled with clarity by Morris Berman, The Reenchantment of the World (Ithaca: Cornell

University Press, 1981), 41-45. Lynn White, Jr., Machina Ex Deo: Essays in the Dynamism of Western Culture (Cambridge: MIT Press, 1968), 11, 20, 77, 79, describes the import of classic Occidental assumptions; while Isaiah Berlin, comp., The Age of Enlightenment: The 18th Century Philosophers (New York: New American Library, 1956), 11-29, particularly 29, gives an excellent summary of the Enlightenment project.

²⁷¹On America's tangible realization of the imaginary world machine, see Ewen and Ewen, 27. Lustig, 85, 88, deals with the view of natural law as Newtonian handiwork; while John F. Kasson, Civilizing the Machine: Technology and Republican Values in America, 1776-1900 (New York: Penguin, 1976), 18, 85, notes the faith that agrarian and industrial processes would be reconciled in an order conducive to individual liberty. And Leo Marx, The Machine in the Garden: Technology and the Pastoral Ideal in America (New York: Oxford University Press, 1964), offers a classic treatment of the agrarianism-industrialism relationship.

²⁷²Both are quoted in Kasson, 123, 19. In his youth, Emerson combined the regard for nature embedded in his famous transcendental spiritualism with a belief that mechanical achievements might join natural processes in stimulating idealistic vision. He later became increasingly convinced, however, that machine civilization degraded spiritual ideals (see pp. 131, 135).

²⁷³Aside from the presentation in ch. 2, particularly sec. 1 above, see also Kasson, 186-191.

²⁷⁴Quoted in Samuel P. Hays, Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920 (1959; rpt., New York: Atheneum, 1980), 104.

²⁷⁵Quoted in *Ibid.*, 124.

²⁷⁶C.F. Curtiss, Discussion, AAACES, Proc. (1915), 118; and Dodson, 327.

²⁷⁷[E.B.] Voorhees, "Some Essentials to the Permanency of Farmers' Institutes," AAFIW, Proc. (1903), 109.

²⁷⁸Note, for example, that Dean Harry Russell of Wisconsin later (1922) hoped that through "the application of scientific measures" the operation of the extra-human, natural market could be modified. Quoted in Edward H. Beardsley, Harry L. Russell and Agricultural Science in Wisconsin (Madison: University of Wisconsin Press, 1969), 176.

²⁷⁹In other words, college leaders joined the professional effort to shift social and natural control from Providence to elite experts. And on the apogee of Newton's thought, see Berman, 117.

²⁸⁰W.H. Jordan, "Values in Science," 24.

²⁸¹See Raymond E. Callahan, Education and the Cult of Efficiency: A Study of the Social Forces that Have Shaped the Administration of the Public Schools (Chicago: University of Chicago Press, 1962), ch. 1; Hays, Conservation and the Gospel of Efficiency; and Samuel Haber, Efficiency and Uplift: Scientific Management in the Progressive Era, 1890-1920 (Chicago: University of Chicago Press, 1964).

²⁸²Haber, ix-x.

²⁸³See *ibid.*

²⁸⁴Eugene Davenport, Education for Efficiency: A Discussion of Certain Phases of the Problem of Universal Education with Special Reference to Academic Ideals and Methods, rev. ed. (New York: D.C. Heath, 1914), 17, 15.

²⁸⁵Francis G. Benedict and Thorne M. Carpenter, The Influence of Muscular and Mental Work on Metabolism and the Efficiency of the Human Body as a Machine, OES, Bulletin no. 208 (1909).

²⁸⁶C.E. Thorne, 52.

²⁸⁷A.C. True, Address, AAACES, Proc. (1915), 118; and True, "Organization of Cooperative Extension Work," 228.

²⁸⁸True, "Organization of Cooperative Extension Work," 230.

²⁸⁹On Reber's design, see OES, Report (1908), 285; and OES, Report (1909), 266.

²⁹⁰L.E. Reber, "University Extension," ed. John Hamilton, 11, 12.

²⁹¹Bradford Knapp, "How Can We Help the Boys?" AAFIW, Proc. (1915), 74. Knapp spoke primarily from the context of addressing matters of agricultural extension teaching for youth. On this mode of diffusion, see the discussion of boys' and girls' clubs in ch. 4, sec. 2 below.

²⁹²K.C. Babcock, "The Land-Grant Colleges and Normal Schools," AAACES, Proc. (1906), 118.

²⁹³See F.B. Mumford, "The Business Administration of an Experiment Station," AAACES, Proc. (1912), 175, for a summary of the view (which he himself did not share) that protested against treating "the investigator as a mere cog in the machine"; David Fairchild, "The Small Field Laboratory and Its Atmosphere of Research," SPAS, Proc. (1915), 65, for a critique of the "executive atmosphere" in the main stations; and F.B. Mumford et al., Discussion, AAACES, Proc. (1917), 287-291, for an interesting debate regarding the extent to which individuality should be upheld.

²⁹⁴C.E. Marshall, "Ethics of Station Work, as Between Individuals," AAACES, Proc. (1912), 151.

²⁹⁵*Ibid.*, 153.

²⁹⁶F.B. Mumford, Discussion, AAACES, Proc. (1917), 287.

²⁹⁷Note, for example, the willingness to resolve the debate in F.B. Mumford et al., 287-291, particularly 287-288, by acceding to such necessity. See also n. 293 above.

²⁹⁸Kenyon L. Butterfield, The Farmer and the New Day (New York: Macmillan, 1919), 223. Notably, Butterfield captioned one of his sections with the title "The Soil as a Machine" (p. 82).

²⁹⁹*Ibid.*, 222, 223, 224, 225.

³⁰⁰Quoted in Gabriel Kolko, The Triumph of Conservatism: A Reinterpretation of American History, 1900-1916 (New York: Free Press, 1963), 128, 197; and in Hays, Conservation and the Gospel of Efficiency, 125. Although Roosevelt engaged in a good deal of rhetorical combat with corporations, thus acquiring fame as a "trustbuster," his practical policy and less publicized commentary demonstrated much admiration for the corporate form of organization. See Martin J. Sklar, The Corporate Reconstruction of American Capitalism, 1890-1916: The Market, the Law, and Politics (Cambridge: Cambridge University Press, 1988), 334-363.

³⁰¹Rooseveltian emulation is, for example, indicated in W.O. Thompson, Discussion, AAACES, Proc. (1906), 116.

³⁰²Frederick Rudolph, The American College and University: A History (New York: Vintage, 1962), 438-439 [emphasis in original].

³⁰³On the consent of academicians, see *Ibid.*, 440-441. For an excellent discussion of Veblen and the accusations of the critics, see Laurence R. Veysey,

The Emergence of the American University (Chicago: University of Chicago Press, 1965), 346-347.

³⁰⁴Veblen, 72.

³⁰⁵Alfred D. Chandler, Jr., The Visible Hand: The Managerial Revolution in American Business (Cambridge: Harvard University Press, Belknap, 1977), 6-12, discusses the structure of the corporation; while Daniel J. Boorstin, The Americans: The Democratic Experience (New York: Vintage, 1973), ch. 48, observes the twentieth-century rise of the "semi-independent" franchises, especially automobile dealerships and gasoline "filling stations."

³⁰⁶Perhaps the most thorough discussions of the Committee's request are in Edward Wiest, Agricultural Organization in the United States (Lexington, KY: University of Kentucky, 1923), 209-210; and C.D. Jarvis, Administrative Organization of the College of Agriculture, U.S. Department of the Interior, Bureau of Education, Higher Education Circular no. 8 (Washington: GPO, 1918), 1.

³⁰⁷Jarvis, Administrative Organization, 12, 13, 14.

³⁰⁸See True, History of Agricultural Education, 222-224.

³⁰⁹C.A. Duniway, "The Functions and Limitations of the President," Journal of Proceedings and Addresses of the Fifty-First Annual Meeting of the National Education Association Held at Salt Lake City, Utah, 5 July to 11 July 1913 (N.p.: The Association, 1913), 509.

³¹⁰E. Davenport, "The Administrative Relations Between the Board of Trustees, the College President and the Dean and Director," AAACES, Proc. (1911), 151.

³¹¹This description of the offices of the structure is that of a partially realized ideal in many colleges, an aim that most college leaders hoped would attain full actualization. The organizational trend largely favored their hope. See Jarvis, Administrative Organization, 1-16 *passim*; and "Report of the Committee on College Organization and Policy," AAACES, Proc. (1915), 106-108.

³¹²Earle D. Ross, "On Writing the History of Land-Grant Colleges and Universities," Journal of Higher Education 24 (1953): 451.

³¹³F.B. Linfield, "The Relationship of Agricultural Experiment Station Work to Agricultural Extension," SPAS, Proc. (1915), 51, 52.

³¹⁴Editorial, ESR 12 (1901): 402.

³¹⁵B.T. Galloway, "The Organization of Cooperative Extension Work, Machinery and Method (In the State)," AAACES, Proc. (1915), 222, 221.

³¹⁶Veblen, 192.

³¹⁷P.H. Mell, "Administrative Methods in American Colleges," AAACES, Proc. (1909), 72. After implying that extension constituted functional differentiation of veritable identity with that of the corporation, Mell made the following remark: "In this day, when the college has entered upon the extension work of placing its advantages and facilities in the homes of the parent, and endeavoring to instruct the father and mother as well as the child, it becomes all the more evident that the college is a great business corporation" (p. 71).

³¹⁸W.E. Stone, Discussion, AAACES, Proc. (1909), 73. Stone himself added that "the ideal management of a college . . . must be based upon what must be considered good organization in a business corporation."

³¹⁹W.D. Hurd, "The Training of Men for Extension Work," AAACES, Proc. (1913), 207.

³²⁰College leaders continued throughout following decades to give rhetorical affirmations of unrestrained individualism, indicating the leadership's (at least verbal) retention of an archaic residual of traditional liberalism. Since this fixation was backward-looking in the context of preponderant, large-scale organization, the inveteracy served to associate the leaders with a commonly labelled "conservatism." See Hardin, 197, 200-204.

³²¹Quoted in Mary Turner Carriel, The Life of Jonathan Baldwin Turner (1911; rpt., Urbana: University of Illinois Press, 1961), 221.

³²²John Hamilton, "The 'Open Door' for the Land-Grant College -- The Farmers," AAACES, Proc. (1906), 129.

CHAPTER 4

THE NEW NATION AND SALIENT FORMS OF THE DESIGN
AND CONSTRUCTION OF ORGANIZED CORPORATISM
IN THE COUNTRYSIDE, 1900-1916

The New Nation and the Rural Problem

F.B. Linfield of Montana explained in 1914 that agricultural college leaders partook of a process in which an elite universalized their expectations for the constitution of social practices.

Progress in any direction is not, in its initiation, the product of the demand of the masses, but comes as a rule from the prophetic vision of the careful analyses of a few. The use and development of Agricultural [s/c] education was no exception to this rule. A few had a vision of the possibilities of agriculture as a science -- the great majority were indifferent, or even antagonistic. But the vision of the few had to become the vision and hope of the many before the dream of the few could be realized in the practice of the community.¹

He continued that the mass of farming people posed "one of the fundamental problems in agricultural educational work" because they refused to believe that anyone could "tell them anything that they do not know about their business." They became particularly inclined toward this declination "when the source of information is distant and impersonal."² Though Linfield professed the

realization of elite aims in agricultural education, the resistance of farming people forced him at once to withdraw the claim.

The "few" came to view one of their important purposes as the universalization of their authority as protectors of the "general good" -- which they defined as an expert-led national interest that superseded centrifugal localism. E.A. Bryan, president of the land-grant college in the state of Washington, used the 1915 presidential address to the Association of American Agricultural Colleges and Experiment Stations (AAACES) as an opportunity to contrast the American heritage of "local self-government" with the new imperative for "a democracy of efficiency." The latter departed from the former by impelling educators to link with federal authorities to further "the dictum that educational movements are from above downward." If accorded with "the ideas and the methods . . . which the land-grant colleges . . . so successfully have developed," these instructional actions would conduce to "molding our hybrid people into a homogenous nation."³

Dean E.J. Wickson of California had already intimated the comparable point that the farming masses, in particular, needed expert guidance toward "industrial self-consciousness," toward recognition of national interdependence and its corresponding demand for "industrial efficiency."⁴ College leaders thus approached the countryside with principles and practices of nationwide organization that did not find a ready reception among people who lived on a neighborhood scale.

These principles received expression in Theodore Roosevelt's "New Nationalism," a slogan that Rooseveltian political theorist, Herbert Croly, did much to render in systematic formulations. "Association is the condition of individuality," argued Croly. He charged disinterested professionals with the duty of determining the nature of this combination, thus grounding the affiliation's origination in the activity of a leadership who would invigorate and "leaven the inert mass." Such elite establishment flowed from his assumption that "the essential wholeness of the community depends absolutely on the ceaseless creation of a political, economic, and social aristocracy."⁵

Meritocratic aristocrats, in Croly's view, would secure the loyalty or obligation of the masses to "the nation" as a coordinated collective under centralized management. It followed that the problematic notion of popular sovereignty, the ground of determinations of the general or public interest, meant to Croly less the rule of the majority and still less the protection of individual rights and liberties, and more a professionally derived "collective will." He emphasized that

the phrase popular Sovereignty is . . . for us Americans equal to the phrase 'national Sovereignty.' The people are not Sovereign as individuals. They are not Sovereign in reason and morals even when united into a majority. They become Sovereign in so far as they succeed in reaching and expressing a collective purpose.⁶

To Croly, this common aim consisted in striving for the "functional adequacy" of various social pursuits, a sufficiency that an expanded administrative state would procure through the formation of groups whose special interests could be

managed in a way that did not disrupt national harmony.⁷ Notably, like Roosevelt, but unlike the Populists, who previously advocated a distributive justice that equally apportioned money, property, privileges, and power, Croly tilted toward a sense of justice which accepted an inegalitarian concentration of professional authority for the purpose of engineering harmonious, functional relations in an unequal society.⁸

New Nationalism viewed the business corporation as an organizational example that the entire country might imitate in the quest for social cohesion, in the search for relationships that Walter Weyl, another leading exponent of the theory, hoped would constitute "less a class struggle than a national adjustment."⁹ Although Woodrow Wilson stood in apparent opposition to Nationalist ideas,¹⁰ his political assumptions actually allowed him to give one of the better articulations of the terms of this adaptation. Wilson embraced the corporation as an embodiment of an organicism that conceived of society as a composite whole with an evolving specialization of parts in the form of group and individual activities (occasionally he rejected Newtonian mechanism in favor of this organic substitute).¹¹ Counterpoised to specialized subdivision within the collective organism, an administrative leadership would meet Wilson's demand for a directive head who could attune special interests into a "common interest" for the nation at large.¹²

New Nationalism proposed to attain social harmony by managing the range of popular choice. An expanded state apparatus would carefully sort alternative selections. Well after the period, one author pondered the implications of such

a national arrangement, recognizing that "the sovereignty of the voter consists in his freedom of choice, just as the sovereignty of the consumer . . . consists in his freedom to trade." But he also cautioned that when the options were of elite administrative derivation, "The people are a sovereign whose vocabulary is limited to two words, Yes and No. This sovereign, moreover, can speak only when spoken to."¹³ Social cohesion might be acquired along with popular political passivity, the inability of masses of persons to initiate their own alternatives.

The rural problem complicated the vision of a cohesive nation by introducing the threat of discontent among urban workers who could bolt from authority if staple shortages and rising food prices became an intolerable burden. Perhaps with this portent in mind, William Hurd of Massachusetts spoke for many agricultural college leaders in 1915: "We have come to realize the economic crisis which we are facing."¹⁴

The leadership aimed to ward off the danger by professionalizing farming. E.A. Burnett of Nebraska had earlier insisted that "the agricultural problem will not be solved until every man who lives upon the land has a knowledge of the fundamental laws of production . . . and manual skill sufficient to become a high-class artisan." To Burnett, if collegiate service brought about such an elevation of farm craftsmanship, each farmer would be "a more efficient economic unit . . . adding . . . stability to the nation."¹⁵ The Nebraskan's comments composed a repetition of those of E.B. Voorhees of New Jersey, who maintained that experience, intuition, or "force of character" could no longer be counted upon to

provide adequate yield, and likewise did not amount to the intellectual "attributes which compel success, which the agricultural college is destined to give." Professionalized farming, on the other hand, represented the prospect of enough scientifically generated abundance to secure "the stability of our Government."¹⁶

Concern for this firm order informed the thinking of Eugene Davenport of Illinois. He said it was imperative to guarantee "the production of cheaper food and a more reliable supply for the people," because "food is the fuel that feeds the human engine, and . . . our . . . development as a race will be conditioned upon our success in providing an assured . . . food supply, abundant and suitable for a highly developed . . . civilization."¹⁷ His remarks resonated with the determination of some college leaders to uphold agricultural fundamentalism as a way to remind contemporaries of what sustained an increasingly interdependent industrial society. Wickson, for example, pointed to agriculture's function in satisfying material needs and offered that all "undertakings for advancement of manufactures . . . are . . . related to it or conditioned upon it. This is true . . . because of the fundamental character of agriculture as a world-supporting industry."¹⁸

The mass of farming people, however, were not obliging the call to perform at a higher level of productivity. An official in the United States Department of Agriculture (USDA) shouted, "Think what it would mean if the average farmer in this country should produce as much corn or wheat or other produce per acre as he ought to produce!" Greater production would secure the basis of national strength. But since the country's "scattered farms" failed to furnish an increase

deemed sufficient to sustain "a civilization worthy of our ideals," he turned to college leaders, mentioned the need to correct the deficiency, and exclaimed to them, "May we rise to our mission!"¹⁹ Federal and collegiate personnel recognized that if farming people did not "deliver the goods" that undergirded attempts to construct a cohesive nation, the efforts might fall short of legitimacy.²⁰ Who would feel obligated to relinquish local autonomy if the national machine was not sustainable?

Noting that "our progress as a nation depends on the more perfect and complete education of our people," President A.M. Soule of Georgia emphasized in 1911 that productivity would rise after farming people received persistent instruction to cooperate with nationwide purposes, which necessarily involved teaching them to farm along capital-intensive "business lines." He worried, though, that individualism, the "one outstanding fault of the American people," would successfully contradict the drive for cooperation. Soule added the following observation and query: "It is true there is a spirit of independence, and particularly in our rural communities, which militates against cooperative effort. Is it not possible through a systematic campaign to break down some of this opposition?"²¹ An effective course of action, he concluded, would "correlate the effort of all agencies into a harmonious whole," recalling "always that the individual is but a factor in the welfare of the Nation and that we must subserve personal interests to the good of all."²²

Such nationalism admittedly presented a stark contrast to the familial-centered decentralization of authority and suspicion of state and federal

governments that ruled in farming neighborhoods. Soule's "campaign" would foment an antithesis that translated into what the *Experiment Station Record* termed the propagation of "radical changes" in customary patterns of farm behavior.²³ Some, like Secretary of Agriculture David Houston, encouraged whatever alterations were necessary to solve the "great problem" of "getting the results" of "scientific investigations . . . before the farmers of the country and of inducing them to apply what is known." If college leaders could resolve this difficulty, he reasoned, they "would work a revolution in the Nation."²⁴

The college ally and master of the Michigan State Grange, J.C. Ketcham, offered his own idea for the reconstruction of farm life. After hearing an agricultural professor explain that livestock would perform at their maximum efficiency if fed a balanced ration, Ketcham asked himself, "Why not a balanced ration for a community?" Farming neighborhoods could be cohered into partnership with the wider society, into groups at one with the "common interest," if served an even distribution of institutional improvements -- in schools and the like -- that would allow each district to "perform at its maximum efficiency."²⁵

But farming people lived spatial isolation from such service. One commentator told the anecdote of his conversation with a farmer who dwelled in a mountainous region of the Northeast. Purportedly, the latter asserted that he and his neighbors inhabited a county that

'is so cut up and divided by these mountain ranges that really the people in one side of the county have never known the people of the other side. We live here in this little valley by ourselves, and those people over there beyond the mountain have been entirely separate from us.'²⁶

Although an extreme and unrepresentative depiction of isolation, the comments nevertheless served as an immoderate reminder of a general farm distance from advocates of national cohesion. Amounting almost to antinomian separatism, this removal prompted Davenport to express vexation over the extent to which farming people stayed "so scattered and difficult to reach, not being organized into large industrial units."²⁷

Indeed, the separation buttressed such independence from collegiate aims that Thomas Hunt, formerly the dean of agriculture in Ohio and later the same in Pennsylvania, warned prospective extension workers "that as a class farmers think for themselves," a proclivity that "is sometimes carried to such an extreme that one is disposed, at times, to get out of patience with them." Hunt added that "men follow leaders," but "less so on the farm than elsewhere. There is no leadership more difficult; none more important."²⁸ For without this guidance and its farming retinue, college teachings and station results would never be practiced in the field.

F.H. Rankin, extension helmsman in Illinois, spoke similarly at the 1907 meeting of the AAACES about how "presidents or general managers of great corporations are often under the restraint of implacable stockholders," about how "directors of . . . experiment stations and presidents of . . . universities must answer to boards of trustees," but then observed the spatial distance of farming people from such oversight, and asked, "Who shall say to the farmer, 'Plant this field of corn,' when in his judgment it should be planted with some other grain or not planted at all?" Farmers did "not have to yield to the opinion of other men

or . . . defer to the prejudice or placate the jealousies of any man or any set of men." Thus it would be especially difficult to get the husbandmen to accede to "leadership and rational direction."²⁹

C.H. Hinman of Colorado contemplated that much farm resistance to outside guidance sprang from a mass of "indifferents." He decried the prevalence of the person who persisted in apathy toward collegiate objectives, scorned "the indifferent farmer, whose indifference is perhaps chiefly congenital. He is lazy; he wants to have an excuse to talk about for not doing better work."³⁰

Not surprisingly, college leaders found the fewer farmers in middle-class organizations to be more hospitable toward efforts to shape the economic landscape in agriculture in a way that enforced growing capital requirements for mechanical implements, biochemical techniques, and managerial knowhow.³¹ The leadership prized their alliance with these "progressive farmers" and sought to supply them with technical knowledge and managers who could implement advanced methods for the benefit of the up-to-date owners. Noting that an adequate supply of such superintendents would enable mastery of the complexities involved in upscale farming, William Spillman of the USDA offered that when the number of these overseers "is sufficient to meet the demand we may expect an important development of large agricultural enterprises."³² Meanwhile, the smaller operations of the masses, faced with competitive disadvantage relative to their "progressive" counterparts, needed a voice that spoke for their general welfare.

An Alternative General Good: The
Nonpartisan League

During the years from 1910 to 1915, North Dakota farmers grew angry as local grain elevators, owned predominantly by absentee railroad corporations, bought their wheat at a grade of no. 2 or less, only to have the crop resold in Duluth or Minneapolis at a grade of no. 1. When this practice combined with farmers' concerns regarding mortgage, equipment, and a range of other costs, all of which frustrated the aspiration to climb the agricultural ladder, it became evident that the husbandmen ripened to the prospect of radical change. They did not mature to the kind of change that proposed to deconstruct neighborhood autonomy, but rather to the sort that intended to issue a sweeping challenge to corporate power, thereby contemplating reclamation of popular charge of farm destiny.³³

Analogous to Populism in its use of indigenous press and home-grown organizers to educate North Dakota farming people in the relationships of power that conditioned life in the countryside, the Nonpartisan League (NPL) formed in 1915 under the tutelage of two former representatives of the Socialist Party, Arthur C. Townley and Albert E. Bowen, and under the counsel of Francis B. Wood, a farmer from Deering. NPL advocates wished to avoid replicating the unsuccessful Populist experience as a third party, and thus endorsed candidates who favored their program, irrespective of the hopeful's party affiliation. The League plan mounted the comprehensive demand for state owned stockyards, terminal elevators, flour mills, packing plants, cold storage utilities, banking facilities, and the like.³⁴

NPL membership rose rapidly and by 1916 League-backed candidates swept the governorship (nearly 80,000 votes to 22,600 for opponents), the lower house of the legislature (81 to 32), and a sizeable portion of the senate (short of a majority because in that year only half of the upper body entered the electoral arena). North Dakota farming people claimed an organization that rivalled the strength of those of the middle class.³⁵

The popular radicalism long embedded in liberalism received expression from farmers who likened their support of the NPL to the revolution of 1776. Emboldened by an alternative conception of the general good as their own majoritarian good, while also determined to relinquish an assumption of individual blame for their failures, farming people embraced the egalitarian language of justice.³⁶ Reputedly, Townley brought numerous crowds to laughter by translating this discourse into words that reflected the idiom of his audiences: "If you put a lawyer, a banker and an industrialist in a barrel and roll it down hill, there'll always be a son-of-a-bitch on top!"³⁷

Although many of the League's adversaries warned against the "anarchist" rebellion in North Dakota,³⁸ the NPL actually constituted a liberal turn toward neo-Populism or quasi-Socialism.³⁹ The influence of these radical traditions evidenced in Nonpartisan proposals for state ownership and equitable distribution of the economic surplus. But Leaguers departed from Socialists both when they affirmed the right of producers to a stake in private property, and when they refused to protest the wage-labor structure of capitalism.⁴⁰

NPL members sought to extend their organization beyond North Dakota. Thus in 1916 and 1917 they supported League campaigns in South Dakota, Montana, Minnesota, Washington, Idaho, Colorado, Wisconsin, Iowa, Nebraska, Kansas, Oklahoma, and Texas. These organized actions announced the advance of the National Nonpartisan League.⁴¹

Meanwhile, during the rise of the NPL, Leaguers enjoyed the backing of faculty of the North Dakota Agricultural College at Fargo. Under the protective leadership of John Henry Worst, the institution's president from 1895 to 1916, professors and students allied with the radical farmers. Graduates of the school helped lead organizing activities for the League.⁴² And, of notable consequence to NPL progress, in 1915 experiment station chemist, Edwin F. Ladd, who had for some time opposed what he called the "big interests," published the station's famous *Special Bulletin No. 14*, titled: "Is the Present System of Grading Wheat Equitable?"⁴³ The document detailed a negative answer, and Leaguers ensured wide distribution of the publication among farming people.⁴⁴ Worst himself echoed with the claim that "fifty-five million dollars a year is lost to the farmers of North Dakota through unfair practices in the grain trade."⁴⁵

Keeping with the emphasis of Worst and Ladd on aiding disadvantaged husbandmen, Arland D. Weeks of the College wrote that higher educational service to the public should include commitment to "social equality" for "the small tiller of the soil." Indeed, "Every college and university should be . . . a powerful center of civic honesty, political enlightenment, and justice."⁴⁶ Many of the

farming people of North Dakota welcomed this mission and eventually raised figures such as Ladd to heroic stature.⁴⁷

Established in 1911 and financed by Minnesota railroads, wholesale houses, lumber yards, elevator companies, implement concerns, milling enterprises, and banks, the Better Farming Association of North Dakota (BFA) proposed a different way of assisting farmers. Its secretary and manager, Thomas P. Cooper, noted that the Association wished to create a system of county or district agricultural agents. These personnel, in Cooper's vision, would spread across North Dakota and propound the principle of self-help, which the tillers could realize by adhering to expert prescriptions for crop rotation and diversification. BFA strategy offered to channel farmers' attention away from protest against inequity in social structure and toward immediate practical matters of technical farm improvements. Enough agents ultimately entered the Association's employ to contact approximately 40 percent of North Dakota's farming population.⁴⁸

By 1913 the Board of Trustees of the Agricultural College agreed to merge collegiate activities with those of the BFA. In the following year Cooper assumed duties as head of agricultural extension and the experiment station. The former Association manager promptly (and unsuccessfully) ordered Ladd to temper his bulletins. But when, in 1916, a freshly constituted state Board of Regents, composed largely of bankers, secured the departure of Worst from the presidency, the College began to disavow sympathy with NPL objectives, a renunciation that contributed to the subsequent decline of the League.⁴⁹

College Leaders and the National Harmony
of Centrally Administered Fragmentation

During the "progressive" period most agricultural college leaders never envisaged turning their institutions in a direction like that taken by colleagues in North Dakota. Instead, the leadership called upon a language of social efficiency, expressed alternately as a desire for "the homogeneity of our people," as a passion for "an efficient, harmonious" interplay of correlated organizations, or in other idiomatic references to the need to redress the nation's social discord.⁵⁰

Among these allusions, the 1900 AAACES presidential address of J.E. Stubbs of Nevada ranked in the forefront. Stubbs said, "Socialism moves forth with banners flying, proclaiming a new creed for society's acceptance and a new gospel for the social ills of mankind." Such radicalism could prosper only because "civilization, the mother of progress, creates new wants which can not always be satisfied, and changes industrial conditions, which bring social ill for a time to certain classes." He concluded that the land-grant institutions shared responsibility for preserving "the nation . . . from civil dissension," a preservation "of great moment in the scheme of national education."⁵¹

But no leader exceeded Kenyon Butterfield of Massachusetts in the wish to supplant societal strife with cohesion. He believed that farming people usually remained attached to the natural rhythm of seasonal change, and hence were conservative or reluctant to embrace the unfamiliar. At the same time, however, he postulated that a concurrence of economic misfortune with isolation from

mainstream society produced "the intense radicalism of a rural community when once it breaks away from its moorings." Butterfield appended that "the Populist movement indicates the tendency to extremes when the old [conservative] allegiance is left behind." Rather than join those who would foment the inclination towards extremity, he insisted that farmers' "class interests" not "be put above general social welfare," and, instead, "be so directed as to permit the farmers to lend the full strength of their class to general social progress." If farm organizations met this directive criterion, they would pass the "test of class efficiency."⁵²

Searching for the appropriate source of such direction, President William Thompson of Ohio settled on an expansion of the state -- enlarged governmental organization of society -- as the best way to dissuade people from "following the lead of unsafe men," and, in particular, he celebrated the state university as an extension of government that could inspire "duty of loyalty" to an efficiently ordered public.⁵³ W.J. Kennedy of Iowa spoke similarly of the need to instill this sense of obligation into farming masses who did not recognize that "efficiency is the modern watchword in all lines of work," and who therefore needed "highly skilled experts" to coordinate remote farm existence with that in the rest of the nation. ("The day of the farmer and his family living unto themselves . . . is fast disappearing and must give way to community life.") To help compensate for outlying unfamiliarity with the organizational behavior expected in an efficient world, Kennedy proposed the establishment of "baseball, football, lawn tennis and basketball for the boys and girls [in the countryside]." He hoped that

farmers' institutes would cooperate with other agencies in so developing the team "initiative of our rural people."⁵⁴

To President H.J. Waters of Kansas, national food requirements impelled capital-intensification in farming, a process that adhered to the maxim, "The farm must become a factory." Once farmers arranged their practices accordingly, the husbandmen would satisfy their duty to provide sufficient production to make America "one harmonious and happy nation."⁵⁵ Happiness, abundance, social symmetry -- these were the promise of a fully developed industrial civilization.

In sum, although teams and factories furnished college leaders with admirable models for the construction of a societal machine that relied on central direction of properly differentiated and harmonized "class interests," there remained the difficulty of actually securing the consent of farming people to cooperate in building the new order. Secretary Houston told the leadership that "whether we like it or not we are face to face with the whole problem of the organization of rural life." He maintained that Americans could no longer "boast" of their "local arrangements for self-government."⁵⁶ The Secretary might have added that the twentieth century summoned assent, instead, to a complex machinery of national intercourse.

While some leaders contemplated obtaining mass consent through enticing the adoption of up-to-date farm practices and ideas,⁵⁷ and while others considered letting the market work its own evolutionary destruction of all who did not bend to the course of the industrial machine,⁵⁸ many fastened on a mode of farmers' organization that by its very nature induced assent to the mechanistic

order. Emerging commodity groups, marketing and purchasing cooperatives, and livestock-testing and breeding societies joined other associations -- the Farmers' Educational and Cooperative Union of America, the American Society of Equity, and the like -- in restricting their aims to the pursuit of specific goals (notably, higher prices for farm commodities). Such aspiration formed only a fragment of what Populists had preoccupied themselves with, and college leaders encouraged the restricted purpose largely because its activities lent to a functional atomization that proved more receptive to centralized coordination than did the agrarian radicalism which raised inclusive questions about who should control the totality of agricultural practices.⁵⁹

Indeed, to the extent that the atomized organizations could be advanced as a universal norm for farmers' association, to that degree the groups facilitated a strategy for acquiring consent to collegiate and allied class dominance of agriculture. Since effective resistance to that rule depended on a grasp of the whole complex of relations that shaped agricultural policy, only muted opposition could be expected from associations that made a single issue -- price, commodity, or breed -- their principal concern. And the period's organizational trend moved in the direction of this specificity. For example, the USDA reported in 1925 that of the nation's 10,803 marketing and purchasing cooperatives, 10,701 had been formed after 1890. Isolated from each other by reason of respective attachment to piecemeal, fragmented objectives, such organizations portended the universalization of a political passivity based on popular incomprehension of the surrounding social whole.⁶⁰

In other words, as A.D. Wilson of Minnesota observed, college agriculturists helped promote organizational particularity or specialization as a countermove to those groups that tried to make "farmers believe that other classes of people are organized against them, are taking unfair advantage of them." Wilson continued by explaining that rather than teach husbandmen to "stand together and fight" opponents, college personnel instructed them to affiliate with specialized organizations having the capability to gather together under "the slogan, 'Co-operation for efficiency.'" This motto meant that each association could "be likened to many of our farm implements." If "intelligently directed" and "adapted to doing" its special work, the group was "an excellent thing to have." If not, it was "likely to be about as useful as a clover huller on a rubber plantation."⁶¹

Butterfield intoned that each specialized, functionally fragmented organization "is inclined to narrow its work." And although such compression favored optimum performance of a specific mission, thereby ensuring that "efficiency can be secured only in this [contracted] way," there still remained the need for an "intelligent" leadership to cohere the fragments into national unity, to grasp "the relation of each part to the whole."⁶²

When college leaders contemplated the arrangement of life in the countryside, they imagined the construction of a machine that provided for centralized direction of functionally fragmented activities. The helmsmen assisted in developing forms of organization that might embody the mechanistic image and convey it to outlying regions. Apart from commodity groups, breeding

associations, and their kin, salient examples of this embodiment could be seen in other associated activity.

Forms

In 1905, President Winthrop Stone of Indiana addressed the subject of home economics in a manner of significance to the totality of agriculture. He articulated a strategy of social organization that concentrated knowledge in the offices of a professional elite, while trickling knowhow down to the recipients below. After mentioning his regret that "unfortunately for the good of society, as well as for the higher development of farming and domestic life, many are willing to boss and few to labor," he proposed the following corrective plan:

In both farming and domestic affairs there are . . . the divisions of operation and of administration, the requirements for which are in each case quite distinct. While in many instances these two functions must be united in the same person, the decided tendency is to separate them. Preparation for the operative function is a matter of manual training and personal experience which ought to be aided by systematic school training. Preparation for the administrative side of farming or housekeeping means a wide knowledge of the sciences, arts, and letters, in general as well as in their application to the particular pursuit. This is the scope or field of degree courses as ordinarily administered in preparation for other lines of human activity, and it seems reasonable to expect a similar and consistent method in dealing with agriculture and household occupations.⁶³

Perhaps organized efforts could teach farming people to be the executors of centrally conceived conceptions of farm work.

The Farm Bureaus

A noteworthy form of organization received its initiation from business leaders. In 1911 the Delaware, Lackawanna and Western Railroad and various bankers secured the cooperation of the USDA and Cornell University in establishing the first "farm bureau" as, exactly, a bureau within the Binghamton Chamber of Commerce of Broome County, New York. This establishment aimed to provide an organizational vehicle for spreading the influence of that locality's fledgling county agent.⁶⁴

Elsewhere in the nation, corporations actively reproduced the Broome creation. With the passage of the Smith-Lever Act in 1914, however, the voluntary beginnings of businessmen quickly became a public duty of agents who systematically formed county bureaus as organs of community support for extension activities. And although the strength of the new associations continued to derive predominantly from the backing of business groups, leaders in the USDA hoped the bureaus could reach out to sundry farmers' organizations and (through formally educative, "nonpolitical" instruction) obtain coordinated effort on behalf of scientifically improved farming.⁶⁵

But once the county movement enrolled increasing numbers of "progressive" farmers, and after these helped both to further state federations of the local enterprises and to found the American Farm Bureau Federation in 1919, claims of educational neutrality hollowed when the bureaus plunged into "politics" by acting as a pressure group seeking legislative favor. Representatives of other

farmers' associations complained that government tendered preferential treatment to a competing organization by staffing it with publicly paid agents.⁶⁶

A chief commentator on the bureaus later explained that their advocates believed in nothing more fervently than the individualistic "self-help principle," which manifested itself in the member's desire both to attain self-sufficiency and to satisfy "public obligation" by producing "as large crops as he can with reasonable means . . . for increased efficiency in his business." The writer also observed that in the county organizations individual agency yielded to the recognition that "it is wholly in the interests of a well-balanced development of a community, state and national life that the farmers should organize."⁶⁷

Hence, though the Farm Bureau became famous in the twentieth century for its "conservatism," that is, for its residual liberalism,⁶⁸ and for its individualism and jealous protection of governmental autonomy at the county and state levels, it nevertheless did not dispute that self-help depended on the prior condition of organizational help. Nor did the Bureau challenge the assumption that authority needed to be centralized at the national plateau. During the twentieth century this absence of defiance evidenced itself, ironically, in the Federation's celebration of the slogan, "decentralization." In practical terms, Bureau members took this motto to mean the preservation of the local power that stemmed from their close relationship to the county agents, a safekeeping that raised the aim to block any federal attempt to disrupt that proximity. The nearness naturally meant that the Federation accepted a role for its individual bureaus that arranged them as decentralized linkages to a larger state apparatus.⁶⁹

By emphasizing the narrow purpose of influencing commodity prices, the county units diffused specialized fragmentation as a worthy group purpose.⁷⁰ Moreover, the bureaus valued internal organizational cooperation in the pursuit of compressed goals, and made the concert the instrument for effective external competitiveness in the marketplace -- concord-cum-competition that a sympathetic observer described as the farmer's willingness to meet "the organization . . . of other [business] interests . . . with the same kind of organization . . . in his own field."⁷¹

Meanwhile, in the second decade of the century, the weight of businessmen, college representatives, and USDA officials in county bureaus indicated a strategy of organizing farmers before they could organize themselves.⁷² This influence suggested a desire to establish a permanent bureau-cracy that would channel local initiative into what Beverly Galloway of Cornell University called the "machinery for collective effort in attacking the problems confronting the farmer."⁷³ The bureaus might accomplish such an assault by universalizing a predisposition toward preoccupation with specialized concerns, and by propagating efficient techniques that would enable farmers to draw satisfaction from meeting the public duty to provide greater production.⁷⁴

Boys' and Girls' Clubs

During the first five years of the period, a second form of organization made initial progress in reaching farm youth. Rural school superintendents, Albert B. Graham of Ohio and O.J. Kern of Illinois, and Will B. Otwell, head of the

Macoupin County Farmers' Institute of Illinois, spearheaded the formation of corn clubs for young people. By 1908 Seaman Knapp attached juvenile activity to Farmers' Cooperative Demonstration Work. Signalled by Graham's favorable reception among representatives of Ohio State University, and by his consequent appointment in 1905 as that state's first college extension superintendent, the collegiate leadership also began taking an active interest in furthering the youth associations.⁷⁵

The clubs instructed youngsters to select quality seed and to use small test plots where they could exercise elementary procedures for planting and cultivation. With various businessmen of an area often funding premiums for contestants, pedagogical reliance on contests rewarded those who secured the greatest production at the lowest cost. Farm youth thus encountered incentives to value competition as a constitutive element of their budding husbandry.⁷⁶

In the century's second decade, control of the associations increasingly shifted. Rural school officials yielded their original charge to the extension divisions of the agricultural colleges.⁷⁷ Club leaders recognized that their efforts induced young people to demonstrate scientific fundamentals to themselves in a fashion consistent with the provisions of the Smith-Lever Act, and the law thus became a permanent source of support for the youth groups. Moreover, the shift in control accompanied an acceleration of the tendency to build clubs grounded not only in corn, but in other commodities and single-purpose activities as well. Hence, leaders organized boys into associations devoted to calves,

cotton, pigs, and the like; while girls found themselves channelled toward canning, poultry, and sewing.⁷⁸

Meanwhile, late in 1911, resulting from the earlier initiative of two Iowa educators, Jessie Field and O.H. Benson, the club movement acquired the symbol through which it became nationally recognized in later years: a four leaved clover emblem marked with an "H" on each leaf. The marks stood for "Head, Heart, Hands, and Health." By the mid-1920s people referred to the youth associations as "4-H clubs."⁷⁹

In keeping with the early influence of Seaman Knapp and farmers' institute personnel, the groups worked to embody the principles of middle-class liberalism. Knapp wanted girls' activity to enhance those agrarian qualities of self-sufficiency and self-education that made "a country home . . . nature's university," and which caused the farmstead to be "more richly endowed for the training of youth than Yale or Harvard."⁸⁰ William Hurd of the college in Massachusetts added his praise of the clubs for encouraging "the competitive spirit," and thus for constituting "the type of work and education that has been the boast of self-made men in the past."⁸¹ A USDA figure intoned that the groups relied on "the natural love of competition."⁸²

Yet, though the clubs started as opportunities for young people to gather for the cultivation of individual character by mastering techniques of production and methods of business efficiency, under professional leadership the associations did not end where they began. Leaders quickly grasped, in the words of one, that the groups afforded young people occasions to learn "the value of

organized effort, of cooperation," that is, provided ways to discover the "social instinct" that countered "the isolated condition" of farm upbringing, a circumstance that "has always been a great drawback to progress."⁸³ Indeed, another leader observed that the clubs joined "competitive and cooperative work . . . to immense advantage in furthering" the young person's "education for efficiency." He meant that the associations produced a socially efficient interaction devoted to functionally specialized competition: "There is need of a concrete object of effort in all such associated [club] activity, and the local corn-growing, bread-making, or fruit-raising contest furnishes such an object."⁸⁴ Here the young learned to prize internal organizational cooperation as the means to effective external competition in the marketplace. Not surprisingly, one could hear the kind of celebration of the clubs that George I. Christie, head of extension in Indiana, raised when he lauded them for developing "a spirit of loyalty" like that fostered in a "football, baseball, or basket-ball game." The development brought a community together to root for its youthful competitors, to rally as "a unit for the support of its team."⁸⁵

To the extent that 4-H could eventually become a mass affair approximating its sporting analogue, it offered a way to realize the obligation of farming people to provide ample produce for the new national team. This provision, to extend the analogy, derived from their participation on a team that responded to the centralized direction of professional managers who coordinated the quest for production points. The farm players expressed their individuality in a functionally specialized or commodity-centered position, and though they learned the

technical skills suited to their positional task, one could question whether they also obtained knowledge of the social dynamics of power that shaped their destiny.

Farm Management

A third form of organization received its authorship from Frederick Winslow Taylor, a mechanical engineer from Philadelphia who rose to prominence in the 1890s and especially after the turn of the century because of his work in the "scientific management" of production sites and their attendant labor force. Taylor's efforts also gained currency under such names as "Efficiency," "Functional Management," and "Taylor System."⁸⁶

The Philadelphian proceeded from a fundamental assumption: Factory managers should have control over all decisions bearing on the exact method of labor performance. Taylor knew, however, that workers frequently possessed traditional craft knowledge and skills that gave them effective command of such determinations. Therefore, in order to counter shop-floor influence, he proposed, most notably in *Shop Management* (1903) and *The Principles of Scientific Management* (1911), that administrators replicate his own longtime practice of observing adroit employees for the purpose of accumulating data that could be collated into systematic recipes prescribing the conduct of manual tasks.⁸⁷

Taylor thus told managers that their capacity to control labor decisions would depend on a strategy that shouldered the overseers, first, with the duty of scrutinizing skilled craftsmen, with "the burden of gathering together all of the

traditional knowledge . . . possessed by the workmen and then of classifying, tabulating, and reducing this knowledge to rules, laws, and formulae." Second, once gathered and reduced, the organized information would become the tool of "brain work" and "be removed from the shop and centered in the planning or laying-out department."⁸⁸

This centralization and transformation of knowledge -- collecting workers' experiential knowhow, systematizing it, concentrating it among planners, and returning it to laborers in the form of routine job tasks -- anchored a design of factory organization that offered management the prerogative of conceiving a total work process, while presenting employees with the opportunity to perform fragmented duties. As Taylor insisted, "It is . . . clear that in most cases one type of man is needed to plan ahead and an entirely different type to execute the work." And, if it was to be properly accomplished, this execution required that special attention be given to the "task idea." Ideally, Taylor envisioned factories where

the work of every workman is fully planned out by the management at least one day in advance, and each man receives in most cases complete written instructions, describing in detail the task which he is to accomplish, as well as the means to be used in doing the work. . . . This task specifies not only what is to be done, but how it is to be done and the exact time allowed for doing it. . . . Scientific management consists very largely in preparing for and carrying out these tasks.⁸⁹

This separation of detailed execution from managerial conception undergirded the subsequent development of twentieth-century American industrialization.⁹⁰

It was not a surprise, then, that agriculture found a parallel to Taylor's proposals in the emergence of "farm management." Under the principal leadership of William Jasper Spillman, professor of agriculture at Washington State College in the 1890s and by 1905 the head of the Office of Farm Management in the USDA, this effort to redesign farms drew on the officer's conviction of 1902 that a re-formed husbandry "must rest mainly on the accumulated experience of generations of those who have followed it [farming]." He maintained that farmers represented craftsmen par excellence, alternately performing as smiths, carpenters, butchers, and the like, and that the most capable of them possessed a traditional store of experiential knowledge for the solution of their work difficulties. It would be foolish for professional agriculturists to ignore this fund of common-sense answers: "A careful study of the systems of farming in vogue in all parts of the country would not only show what are the real problems that confront the farmer" but it "would reveal the fact that farmers themselves have already solved many very important ones."⁹¹

Spillman propounded that professionals needed to survey the varieties of "successful" local experience, then compare and systematize the findings and produce general rules of practice that would "revolutionize the system of farming" in popular use. Throughout much of the period, he kept reiterating his intent

to gather from the farmers themselves the results of their own experiences, to interpret these experiences and to add these interpretations to the general body of knowledge which we [professional agriculturists] call the science of agriculture, thus accumulating a multiplicity of data.⁹²

Such factual information would fortify farm management as a field of study that analyzed the relations among the factors that constituted the business of a farm, as an inquiry that went beyond the exploration of crop and livestock production (agronomy and animal husbandry) and examined productive matters as they related to a farm's important organizational issues, e.g. its cropping system and manner of rotation and its method of cost accounting and record keeping. Thus, unlike the macroanalysis of rural economics, farm management involved the microexamination of single farms.⁹³

With the growing establishment in the agricultural colleges of courses devoted to the microstudy, and through the formation of the Farm Management Association in 1910, the collegiate leadership participated actively in the development of the new field. Notably, George F. Warren of Cornell, a key figure in the fledgling sphere of inquiry, encouraged leaders to propagate the practice of efficiently managing farms for large profits.⁹⁴

At the AAACES convention in 1916, in an address on "Scientific Management as Applied to the Farm, Home and Manufacturing Plants," Dean C.R. Jones of West Virginia noted that farm management accepts "the same ideal as that advanced in the Taylor system." This standard, he continued, aimed at "determining the best and most economical method of performing a given task and then devising a system of management by which the task can be done in the best and most economical way." Farm management developed "a science for each element in the farm processes," a detailed formula for selection of machinery, for layout of the farmstead, and the like.⁹⁵

Jones observed, however, that unlike factories, farms lacked spatial proximity to planning departments that could oversee component executions. But partial compensation for this deficiency could be gained through the "possible and practical cooperation between the farmer and the . . . staff of extension workers."⁹⁶ Such consentaneity might result in farmers' performance of prescriptions offered by county agents.

Ultimately, as Jones emphasized, complete effecting of farm-management directions would require the employment of many managers or "non-productive workers" who could supervise task exercises. He concluded that the salary and scale of operation suited to these overseers constituted a prohibitive expense for most farmers. He hoped that leaders of the new field would not press for total implementation; for if farm-management ambition was

carried out to its full logical extent, the small farm would go out of existence and would be replaced by large corporate establishments or community farming, in which the work would be so subdivided that each worker could be assigned to tasks which he was best qualified to perform. No amount of increased efficiency to my mind would compensate society for the sacrifice of giving up the farm and the home as the fundamental units of our social organization.⁹⁷

Spillman had already grasped that farm management would impose considerable costs on down-scale farmers.⁹⁸ And while he embraced the liberal "ideal" of "many small farms owned and operated" by a "self-respecting class" of "prosperous proprietors," he also valued "corporation methods of conducting business" because the techniques demonstrated that profitability rose in proportion to the size of the concern and the degree of cooperative conduct

practiced by its employees, and he thus felt uneasiness that husbandmen "as a class live so much to themselves . . . that it is difficult to secure cooperation among them." Wanting to uphold a liberalism that displayed incompatibility with his own farm-management emulation of corporations, Spillman partly celebrated, partly censured American farming for being "preeminently a business of individual rather than corporate enterprise."⁹⁹

He dealt with his internal contradiction by contending that efficiencies of scale, the big company's major "principle in business," had irrevocably secured victorious application "everywhere except in agriculture." In turn, once farm management provided a sufficient supply of managers to make sizeable operations feasible, "there seems to be no reason why large farms should not be even more successful, financially, than small ones." Although he wondered whether it was "desirable from the standpoint of national economy for the small farm to give place to the large one," he resolved that

such changes are controlled by economic forces that work in spite of our attempts to counteract them. If large agricultural undertakings could be made as successful as those of moderate size are now sometimes made, there is every reason to believe that corporate agriculture would assume an important role in this country, whether or not it is desirable that this should be the case.¹⁰⁰

Spillman solved his inner opposition by viewing this prospective corporatization of farming as an action of "economic forces" beyond human control, a necessity that depended on the voluntary assistance of farm-management specialists who could make it possible. Here he landed in another contradiction, but one that escaped his consideration.

Corporatization of husbandry would be consistent with a vision of the body politic enunciated by Dean Liberty Bailey of Cornell. He appreciated farm-management and all other surveys as the means to appraise America's stock of natural and human resources, and he pointed to an analogue that captured both an image of the nation and the meaning of the appraisal: "A commonwealth may be conceived of as a great business or commercial corporation. The commonwealth cannot do business efficiently without an inventory of its assets."¹⁰¹

Farm-management specialists might help in building such a corporate nation, using the survey to gather traditional craft knowledge so that the knowhow could then be systematized and conveyed back to farming people in what Carl Vrooman of the USDA called "practical, predigested form."¹⁰² This process of collection and return constituted one aspect of a general strategy to assimilate farmers into the new order on terms that established both a scientific basis for production sufficient to sustain the national arrangement, and a professional preeminence regarding the understanding required for competent farming.

President E.A. Bryan of Washington State presumed this New-Class superiority when in 1913 he said that the "problem of teaching [scientific prescriptions to] the farmer" consists in the difficult effort to "reduce to their lowest terms the very simple principles of agriculture, and instill them into his mind." Difficulty arose because "the mind of the average farmer does not reach far. He needs to have thoughts phrased in simple and plain language."¹⁰³ Such simplicity took form in farm management as an accumulation of what farming

people knew and a transformation of that knowledge into an addition to the science that increasingly made the masses reliant upon "predigested" professional direction. Once so subjected, they might become executors of conceptions that originated in distant offices.

At the AAACES convention in 1905, Henry Armsby of the Pennsylvania agricultural college had already sensed that perhaps farm management represented an attempt to routinize farmers' work in such a way as to fail to "teach him [the farmer] to think for himself." Whitman Jordan of New York added his speculation that the fledgling form of instruction might lead to a passivity wherein the husbandman thinks "he is dependent upon some other agency than himself for his success." Spillman listened patiently to these expressions of apprehension, and then allayed the uneasiness by pointing out that

while there is danger, and I realize it as fully as any of you, of getting the farmer to rely too much upon us, there is an opportunity which is unexcelled of improving agricultural practice in this country by studying the farmer and his immediate problems, and making recommendations where we understand the conditions.¹⁰⁴

In summary, farm management proposed to fuel the universalization of Taylor's factory by "studying the farmer," by systematizing the findings, and by returning to the countryside simplified instructions for procedural execution. By concentrating synoptic grasp of the farm process with managers and through reducing mass vision to a hold on fragmented tasks, this mode of knowledge transformation promised to secure popular consent to corporatization in husbandry. The masses would not know enough about the design that

conditioned their farming to do otherwise. Moreover, the large-scale, capital-intensive farms of corporatization might one day link with county agents in an expanded state apparatus committed to the abundant production that could maintain the new nation.

Living in a Corporation

Since the aforementioned forms of organization relied on the corporate principles of centralization of authority and differentiation or fragmentation of functions, and since agricultural college leaders contributed to other efforts that raised the priority of office over individual,¹⁰⁵ farming people confronted a movement for their assimilation into an organized mode of life that proceeded as if inside a business corporation. Caught up in the belief that this locomotion represented the tide of evolutionary inevitability, important farm journals eased the absorption by toning down pejorative references to the large enterprise as "empire," "monopoly," "trust," "octopus," and "serpent," and by politely rewording the designations as "firm," "company," and "business."¹⁰⁶

Among college leaders, Thomas Hunt observed the organizational momentum of the period and pondered the possibility that Americans "shall have eventually a bureaucratic rather than a democratic form of government." He insisted that whichever outcome came to pass depended on the choices of his contemporaries regarding whether to establish a "decentralization" or a "centralization of power." Hunt affirmed that democracy accorded with the former, but he wished to preserve both. He thus called for their union on the

basis of sound "business principles," a fusion contingent on "the most efficient co-ordination" and exemplified in the collegiate effort to construct a tripartite organization that decentralized various activities while retaining centralized charge of the overall structure.¹⁰⁷ Hunt did not ask if decentralization of functions equalled decentralization of authority.

By the end of the era, college leaders and their allies possessed an organizational design complete with incipient forms to embody it. The leadership supported and awaited the finish of infrastructural developments such as improved roads that would enable the thorough conveyance of the plan to the remote farms of the countryside. Once conveyed, the arrangement promised to revolutionize the decentralized patterns of behavior in farming neighborhoods.¹⁰⁸

Denouement: The Swan Song of Liberty Hyde Bailey

Born in South Haven, Michigan, and endowed with a formative farm upbringing, Liberty Hyde Bailey (1858-1954) earned B.S. and M.S. degrees from Michigan Agricultural College in 1882 and 1886. The admixture of botanical training under Asa Gray of Harvard helped Bailey secure the chair in horticulture at Cornell in 1888. By 1903 the horticulturist rose to the deanship of Cornell's College of Agriculture.¹⁰⁹

Bailey's friendship with Theodore Roosevelt bore fruit when, in 1908, the President invited him to be the chairman of the famous Commission on Country Life. This position, coupled with his prolific work as an author (who used the

"progressive" years to compose many of his some 50 books and approximately 700 articles) on a wide range of agricultural and rural subjects, catapulted Bailey into the limelight as the chief spokesman for the Country Life Movement. In addition to his prominence as a reformer, the educator's vita swelled with his service to multiple professional associations. He served, for example, as president of each of the following organizations: the American Society for Horticultural Science (1903-07 and a founder), the Association of American Agricultural Colleges and Experiment Stations (1906), the American Nature-Study Society (1914-15), the American Pomological Society (1917-22), the Fourth International Botanical Congress (1926), and the American Society of Plant Taxonomists (1939).¹¹⁰

During the first two decades of the twentieth century, middle and New-Class contemporaries honored Bailey as a leading "philosopher of country life."¹¹¹ His philosophy combined a romantic naturalism that loved the raw outdoors with a Jeffersonian liberalism that celebrated farmers as nature's exemplary models of democratic independence. Bailey also wrote as a humanistic naturalist who espoused "nature study" as a pedagogical means to induce the individual's moral and creative development through immediate relation to natural phenomena, a method that he believed would spontaneously generate an attitude of openness to the expression of Deweyesque communal affections.¹¹² Moreover, he spoke as a nineteenth-century moralist who valued farm life for its apparent inculcation of character as manifest in the practice of thrift, frugality, perseverance, and the rest of the virtues associated with liberal individuality.¹¹³

Yet, as Kenyon Butterfield observed, Bailey viewed the world "with two eyes."¹¹⁴ That is, the Cornell leader saw with one "eye" the value of the heritage of decentralization and individualism. With the other, however, he prized the new nationalism and the corporate mode of organizing it under centralized authority vested in a meritocratic leadership. And, on the one hand, his love for the unspoiled outdoors led him to denounce efforts to treat nature only as an object of human conquest; while, on the other, his devotion to Enlightenment science made him equally determined to subdue natural processes for human benefit. Again, he esteemed farmers' distance from social control, but embraced farm management and the farm bureaus as ways to sway farming people toward a professionally coordinated teamwork.¹¹⁵

Bailey deemed that the evolutionary development of industrial interdependence had reached the point of requiring such organized cooperation, had progressed to the stage of demanding such concerted action as the bulwark of the general welfare, and hence had arrived at the moment when experts needed to interfere with autonomous husbandry for the good of all. "Every farm in every state should be considered as one part in an underlying fabric of human evolution," and "in the interest of society every farm should ultimately be known to some one who represents society [a state official], to the end that that farm may be made a more effective unit in the great plan."¹¹⁶

At the same time, Bailey could never bring himself to share Butterfield's envelopment in the passion for elite coordination.¹¹⁷ The former repeatedly returned his attention to what he saw as a primary principle of democracy, "which

is to let the control of policies and affairs rest directly back on the people." He was disturbed by the period's trend toward concentrated authority, and motioned

to give the [farming] people in the neighborhoods all the freedom and all the responsibility they ought to have for their own best development. The future will care very little for the mechanism of administration, but it will care very much for the [democratic] results in the training of the folk.¹¹⁸

Bailey found himself opposing a centralization that he simultaneously supported, a contradiction that tore at his consciousness as it did the social relations around him. His intimacy with this opposition and willingness to grapple with it in his writings made him a figure of special importance to subsequent commentators because his thought seemed to epitomize America's problematic transition from one world to another.¹¹⁹ Bailey looked at the nation and delivered the following observation: "How to strike the balance between the needful individualism and social crystallization is probably the most difficult question before society."¹²⁰

He sought to resolve his own ambivalence in 1913 by retiring from the deanship at Cornell. Although a number of reasons informed his decision to depart from the office,¹²¹ he emphasized his desire "to get out of harness" and restore his individuality as a "separate soul" apart from bureaucratic entanglements that undermined his freedom to weigh the course of human events with independent judgment.¹²² Free from institutional duties, his mind might become less divided against itself.

In ensuing years, Bailey wrote a series of "Background Books" that fulfilled his wish to criticize without constraint: *The Holy Earth* (1915); *Wind and Weather* (1916); *Universal Service* (1918); *What Is Democracy?* (1918); *The Seven Stars* (1923); *The Harvest of the Year* (1927); and *The Garden Lover* (1928). These volumes did not mark a complete discontinuity with the thought exhibited during the pre-retirement phase of his life, but those published before 1920 comprised a last composition on the "progressive" years and signalled a decisive shift toward a social criticism that warned contemporaries of dangerous tendencies just then in motion.¹²³

Bailey used this literary production as an opportunity to explain that democracy was not so much a form of government as it was a spontaneous sentiment, an immediately lived experience engendered by the "backgrounds" -- the sky, sea, tundra, deserts, mountains, winds, open fields, and forest -- whose vastness reduced human life to the terms of equality, and whose immense variation stimulated the expression of unique individuality.¹²⁴ Living in greater proximity than others to "the facts and situations that stand at our backs," the farmer constituted "the fundamental fact in a democracy." Moreover, lest the nation sacrifice this anchor of self-determination, it was necessary to apportion land in divisions small enough to allow wide access to the practice of farming: "However free a people may be politically, however democratic in its feeling, if a large part of the land is held by a relatively few families and beyond the reach of others, that people cannot be a complete democracy."¹²⁵

While farm life invited individual variegation, Bailey observed a contemporary tendency toward a social engineering that proposed to eradicate the unique.

Variations of personality are to be encouraged rather than eliminated. The modern processes of standardization, resulting from the machinery habit, whereby all the wrinkles of society are ironed out, have in them much danger to a satisfying social order. The standardizing in large industrial establishments is justified in its manufacturing results rather than in its human results. The standardizing in politics and in governmental processes is no less dangerous. We have committed ourselves to this domination in the public schools. . . . In these days, the machine dominates our philosophy. We must take special care that the forces of variability are encouraged, to counteract these great dangers.¹²⁶

He noted that the emerging social machinery relied for its guidance on the "concept of the Perfect Plan," and for its vision on the "idea of the Perfect State." Both manifested "a species of idolatry" that worshipped "at the feet of the God of Efficiency." This fetish could sap the popular initiative required for self-government because it educated for functional fitness at the expense of civic understanding: "Even the technical education of the masses may be highly developed and yet the people may remain undeveloped in political education."¹²⁷

To Bailey, the "Perfect Paper-plan" found expression in the Smith-Lever Act's

'projects' for agriculture and education, made and approved in offices. One would think we are coming to an office-farming, as we have already come to an office-education. In one form or another, the project-idea is so stuck in our minds that we seem to be unable to see around it. So is it difficult to develop in certain observers a view of agriculture from the earth rather than from the office and the workshop; yet democracy comes out of the earth: the living creation in a state of nature is a vast democracy.¹²⁸

He knew "no reason why projects of rural community work in New York and California should be approved by the Secretary of Agriculture," unless one accepted the argument "that this approval insures uniformity." But he replied "that uniformity is the very thing we do not want." For this invariability routinized farm practices and undermined farmers' self-reliance through "the unifying, standardizing and formalizing of all affairs," through "the pressing out of the variations that make men to be men rather than copyists and that put into life the personality which makes it worth the living." Such "mechanical routine-making" clung to "the idea of the perfect scheme, devised by superior intelligence, and controlled arbitrarily as a matter of form." And this reliance on the centralized authority of select intellectuals contradicted "the free play of local needs . . . on which democracy, as distinguished from government, must rest." Therefore, since it contributed to the concentration of power in distant centers of influence, and since it helped to strip farming of its natural sentiment, the Smith-Lever Act assisted in the rise of an "impersonal and anti-democratic drift."¹²⁹

"In proportion as society becomes organized and involved," Bailey wrote in *The Holy Earth*, "do we need the separate spirit and persons who are responsible beings on their own account."¹³⁰ After his retirement, he conceived of himself as such a "spirit" and explained that the exigency derived from organizational pressures that swamped people with a busyness that made them forgetful of the dangerous developments in which they participated. He would use his separation from those troubles as an opportunity to help his contemporaries to remember.¹³¹

Endnotes

¹F.B. Linfield, "The Relationship of Agricultural Experiment Station Work to Agricultural Extension," SPAS, Proc. (1915), 47.

²*Ibid.*

³E.A. Bryan, "Presidential Address: A National System of Education," AAACES, Proc. (1915), 72, 74, 79, 80, 81.

⁴E.J. Wickson, "The Agricultural College and Its Relationship to the Scheme of National Education," Journal of Proceedings and Addresses of the Forty-Fifth Annual Meeting of the National Educational Association Held at Los Angeles, California, 8 July to 12 July 1907 (N.p.: The Association, 1907), 1045, 1048.

⁵Quoted in R. Jeffrey Lustig, Corporate Liberalism: The Origins of Modern American Political Theory, 1890-1920 (Berkeley: University of California Press, 1982), 30, 213, 326n.

⁶Quoted in *Ibid.*, 211, 214, 215.

⁷Quoted in *Ibid.*, 216.

⁸Justice has a traditional sense of harmonizing one's pursuits with those of others in society. This harmony could be produced through elite administrative direction. And though Martin J. Sklar, The Corporate Reconstruction of American Capitalism, 1890-1916: The Market, the Law, and Politics (Cambridge: Cambridge University Press, 1988), 36, notes that Roosevelt embraced the distributive sense, it is also clear that the President favored increasing centralization of regulatory authority while simultaneously refusing to oppose the corporate form of organization that enabled the acquisition of disproportionate market power. Thus, in practical terms, Roosevelt accepted justice as meaning expert-directed, professionally derived harmonization, i.e. instead of searching for means to eradicate the corporation, he used regulation as a way to secure popular adjustment to the large-scale business device (see pp. 37-39, for a summary of matters pertaining to the adaptation).

⁹Quoted in Lustig, 209.

¹⁰Wilson, in keeping with his program of "New Freedom" from excessive regulation of corporations, parted from Roosevelt's more pronounced inclination

toward governmental direction of corporate activity. For example, the former departed from the latter's position in support of federal licensing of companies. Wilson advocated a trade commission that would supervise without the power to register. Both, however, strongly favored (albeit with different degrees of enforcement authority) a positive rôle for government in the economy. See Sklar, 37-38, 325, 420-421.

¹¹"Government is not a machine," Wilson argued on one occasion, "but a living thing." Notwithstanding this posing of contraries, the organic and mechanistic conceptions both arrived at the same destination, i.e. centralized control of functionally differentiated activities. For the quote above and for Wilson's view of the corporation, see Lustig, 204, 205-206.

¹²Quoted in *Ibid.*, 205.

¹³The 1942 comments of the political scientist, Elmer E. Schattschneider, quoted in *Ibid.*, 226.

¹⁴W.D. Hurd, "Shall Extension Service Include the Social, Recreational and Educational Improvement of Rural and Urban Districts?" AAACES, *Proc.* (1915), 234. Hurd argued that the full variety of extension activities must address a national situation where "the average acre production of our great staple crops has not increased" during the previous "fifty years" (p. 233).

¹⁵E.A. Burnett, "The Function of the Land-Grant College in Promoting Agricultural Education in Secondary Schools," AAACES, *Proc.* (1910), 88, 89. To Burnett, secondary schools could supplement collegiate means of professionalizing a future crop of farmers.

¹⁶E.B. Voorhees, "Annual Address of the President of the Association," AAACES, *Proc.* (1906), 33, 34.

¹⁷Eugene Davenport, "Recent Progress in Agriculture," AAFIW, *Proc.* (1915), 44; and Eugene Davenport, Education for Efficiency: A Discussion of Certain Phases of the Problem of Universal Education with Special Reference to Academic Ideals and Methods, rev. ed. (New York: D.C. Heath, 1914), 150.

¹⁸Wickson, 1045.

¹⁹[Carl S. Vrooman], "The Assistant Secretary of Agriculture," AAACES, *Proc.* (1915), 129.

²⁰Lustig, 234, makes the general observation that abundant economic production provided the most important purpose justifying movement toward a centralized national order characterized by "common allegiance" to hierarchical

rule. If this form of direction boded the satisfaction of all material wants, its manner of control could be accepted as the necessary price of progress.

²¹A.M. Soule, "President's Address," AAFIW, Proc. (1912), 25, 27.

²²*Ibid.*, 29.

²³Editorial, ESR 30 (1914): 607. Such changes could include adoption of the "highest type" of "practices in irrigation, in seed improvement, in soil renovation, in dairy sanitation, and in many other lines."

²⁴D.F. Houston, "Address of Welcome," AAACES, Proc. (1914), 20.

²⁵J.C. Ketcham, "A Balanced Ration for a Community," AAAFIW, Proc. (1917), 72, 73.

²⁶Quoted in L.A. Clinton, Discussion, AAACES, Proc. (1914), 257.

²⁷E. Davenport, "Obstacles to Progress in Agricultural Science: President's Address," SPAS, Proc. (1913), 11. Davenport viewed this isolation as an obstacle or danger to the progress of the nation, because the separation kept too many farmers beyond the reach of the news that investigative results needed widespread application if they were to enhance national farm production.

²⁸Thomas F. Hunt, "American System of Agricultural Extension -- Qualifying Teachers," College Extension in Agriculture: Discussions Before the Graduate School of Agriculture at the Iowa State College, Ames, Iowa, 4 July to 27 July 1910, ed. John Hamilton, OES, Bulletin no. 231 (1910), 85, 86.

²⁹F.H. Rankin, "Agricultural Extension as a Factor in College and Station Work," AAACES, Proc. (1907), 78, 79.

³⁰C.H. Hinman, Discussion, AAACES, Proc. (1911), 198, 199.

³¹Collegiate identification with such farmers is exemplified in Sally Maggard, "From Farmers to Miners: The Decline of Agriculture in Eastern Kentucky," Science and Agricultural Development, ed. Lawrence Busch (Totowa: Allanheld, Osmun, 1981), 42-43. The growing capital requirements are treated in a twentieth-century agricultural overview by S. Buik Mohammadi, "American Capitalism and Agricultural Development," ed. Busch, 21.

³²W.J. Spillman, "Farming as an Occupation for City-Bred Men," USDA, Year. (1910): 243. Spillman concerned himself primarily with detailing the kinds of assistance available to urban businessmen seeking to acquire farms (see pp. 242-248, particularly p. 248). On the effort to supply managers, see also L.H.

Bailey, "College Men as Farm Managers," The Century Magazine, November 1908: 147-152.

³³Grading practice is described succinctly in Lowell K. Dyson, Farmers' Organizations (New York: Greenwood, 1986), 257-258. Robert L. Morlan, Political Prairie Fire: The Nonpartisan League, 1915-1922 (Minneapolis: University of Minnesota Press, 1955), ch. 1, captures North Dakota farmers' anger over their economic distress.

³⁴Compare the educational activity of Populism discussed in C.S. Walker, "The Farmers' Movement," Agrarianism in American History, ed. Louis H. Douglas (Lexington, MA: D.C. Heath, 1969), 91, with that of the League described in Morlan, ch. 2, particularly pp. 28-33. On other matters in the paragraph, see Dyson, 259-262.

³⁵Rising League membership and North Dakota electoral results are noted in Dyson, 262, 269.

³⁶On the radical liberalism of League supporters and the renunciation of individual blame, see *ibid.*, 259, 261. These issues and the language of justice are also taken up in Morlan, ch. 3, pp. 19-20, 34, 93-94, 355.

³⁷Quoted in Morlan, 208. Morlan notes that Townley probably, but not certainly, said this.

³⁸See Dyson, 261. The adversaries likely meant anarchism in the sense of chaos, and not in the sense of a belief in elimination of government.

³⁹Leaguers conceived of classical liberal instruments -- the suffrage and representative government -- as the means to achieve the radical objectives of the NPL. See Morlan, 269, 353-359; and Dyson, 263. On those tools, see ch. 1, n. 64 above.

⁴⁰On the departure from the Socialists, see Morlan, 269, 353-359.

⁴¹On the spread of the League and its assumption of a national name, see Dyson, 263.

⁴²William C. Hunter, Beacon Across the Prairie: North Dakota's Land-Grant College (Fargo: North Dakota Institute for Regional Studies, 1961), 31, 33, discusses Worst's presidency; while Morlan, 8, 15, 18, 81-82, details his receptivity toward the NPL. Organizing activities of graduates are mentioned in Louis G. Geiger, Higher Education in a Maturing Democracy (Lincoln: University of Nebraska Press, 1963), 69.

⁴³Quoted in Hunter, 50. Hunter also discusses the bulletin (see p. 49).

⁴⁴See Dyson, 260.

⁴⁵Quoted in Morlan, 3.

⁴⁶Arland D. Weeks, "Ways in Which the Higher Institutions May Serve Rural Communities," Educational Review 40 (October 1910): 230, 231.

⁴⁷See Dyson, 267.

⁴⁸For the details in the paragraph, see Hunter, 58-60. Hunter observes that Leaguers, unlike Better Farming advocates, saw the answer to farmers' problems "in control of the grain market and belittled diversification" (pp. 59-60).

⁴⁹Another reason for the decline of the League resided in the business community's exploitation of the fears of communism that erupted in America after the Russian revolution. By associating the NPL with bolshevism, businessmen discredited the League in the eyes of many. See Dyson, 265-267. And on the merger, Cooper's orders, and the departure of Worst, see Hunter, 61-62.

⁵⁰Davenport, Education for Efficiency, 47; and E.L. Morgan, "An Experiment in Rural Community Planning," AAACES, Proc. (1915), 103.

⁵¹J.E. Stubbs, "President's Address: What Is of Most Worth in Modern Education?" AAACES, Proc. (1901), 38, 39. In backward-looking reflections, Stubbs tied national preservation to promotion of the worthy ideal of (moral) character development, which constituted the capstone "of ceaseless progress toward educational perfection" (p. 33).

⁵²Kenyon L. Butterfield, Chapters in Rural Progress (Chicago: University of Chicago Press, 1907), 18, 23.

⁵³Quoted in James E. Pollard, William Oxley Thompson: "Evangel of Education" (Columbus: Ohio State University, 1955), 71.

⁵⁴W.J. Kennedy, "The Obligation of the Farmers' Institute to the Country Woman, the Country Boy, and the Country Girl," AAFIW, Proc. (1914), 51, 50.

⁵⁵H.J. Waters, "The Farmers' Responsibilities," AAFIW, Proc. (1915), 69, 71.

⁵⁶Houston, 22.

⁵⁷For example, John Hamilton, "The Farmers' Institute as a Factor in Creating a Desire for an Agricultural Education," AAFIW, Proc. (1902), 68-69, thought that

extension activities might place modern enticements before the husbandman, and thus be for "the farmer what the show window was to the stroller along the street or the railroad to the primitive town. It first attracted attention. Then its exhibit of new ideas and of improved methods was examined. Their value and adaptability were discussed until at length many of the suggestions were appropriated and put in practice."

⁵⁸For example, note the following contention of Eugene Davenport: "Many individuals will be crowded out as agriculture exacts more knowledge and skill. . . . The great laws of evolution and the survival of the fittest will continue to operate, and, in the interest of progress, they ought to operate. Progress is not in the interest of the individual, and it cannot stop because of individuals. Everything must surrender to the central idea that this [the industrialization of agriculture] is a movement for the highest attainable agriculture in the fullest possible sense of the term." Quoted in David B. Danbom, The Resisted Revolution: Urban America and the Industrialization of Agriculture, 1900-1930 (Ames: Iowa State University Press, 1979), 40.

⁵⁹Lawrence Busch and William B. Lacy, Science, Agriculture, and the Politics of Research (Boulder: Westview, 1983), 26-27, note that commodity groups -- cotton growers, et al. -- viewed the world in restricted terms (i.e. fixated on their product at the expense of a total perspective on the agricultural system); while Grant McConnell, The Decline of Agrarian Democracy (Berkeley: University of California Press, 1953), 39-42, explains that the Cooperative Union, the Society of Equity, and other associations differed from their Populist predecessor by embracing "narrower and more specific" proposals, an embrace that usually translated into an "intensification of emphasis on prices" (pp. 39, 42). Dyson, 57-60, finds similarly that cooperatives came to substitute particularity for "more radical schemes" of organization (p. 59). Both the college and USDA leadership believed that such narrowly focused groups (especially testing associations) were capable of responding well to central direction. The respective leaders also prized the groupings for their frequent responsiveness to calls for greater farm production. See C.W. Thompson, "How the Department of Agriculture Promotes Organization in Rural Life," USDA, Year. (1916): 272A-272P, particularly 272P.

⁶⁰Fortifying the reasoning of the paragraph, Ray Ginger, Age of Excess: The United States from 1877 to 1914 (New York: Macmillan, 1965), 181, observes that before the decline of Midwestern Populism in the latter half of the 1890s, Populists took interest "not just in higher prices but also in social reconstruction." This concern subsequently faded as Party members retreated to organizations that "sought to gain narrowly economic ends by pressure politics." And McConnell, 19, 43, notes that Populist resistance to business leaders transmuted in the early twentieth century into the isolation of organized "wheat growers, cotton producers, tobacco planters, and others" who were "mere fragments" that could not "be welded together on any pattern inherited from the old Farmers'

Alliance" (p. 43). For further discussion of piecemeal objectives, see n. 59 above. The USDA data are from Richard Hofstadter, The Age of Reform: From Bryan to F.D.R. (New York: Vintage, 1955), 113.

⁶¹A.D. Wilson, "Promoting Co-operation Through Farmers' Institutes," AAFIW, Proc. (1915), 61.

⁶²Kenyon L. Butterfield, "Leagues for Rural Progress," Farm and Community, vol. 4 of Cyclopedia of American Agriculture, ed. L.H. Bailey, 5th ed. (New York: Macmillan, 1917), 310, 311. These Leagues received initial inspiration from a 1902 conference at Michigan Agricultural College and spread in the first decade to various parts of New England. This meeting and its offspring contemplated ways to formally federate practically the entire scope of rural institutions (see p. 310).

⁶³W.E. Stone, "A Degree Course in Home Economics," AAACES, Proc. (1906), 94.

⁶⁴The origin of the bureaus is treated in a balanced fashion by Dyson, 15. A fair and classic critical appraisal is in McConnell, 47. Samuel R. Berger, Dollar Harvest: The Story of the Farm Bureau (Lexington, MA: D.C. Heath, 1971), 91, provides criticism that tilts toward polemical overstatement; while uncritical celebration is the norm in the official histories by O.M. Kile, The Farm Bureau Movement (New York: Macmillan, 1921); and O.M. Kile, The Farm Bureau Through Three Decades (Baltimore: Waverly, 1948).

⁶⁵On, respectively, the corporate participation in reproducing the Broome creation, the continued reliance on business backing, and agents' formation of bureaus, see Dyson, 15-16. Notably, L.A. Clinton, Discussion, AAACES, Proc. (1915), p. 225, said, "The starting point of the farm bureau is with a few men in the county, perhaps a chamber of commerce, or a board of trade." Moreover, given the weight of businessmen and educators in the county associations, there was, as Dyson, 14, notes, some question as to whether the bureaus constituted farmers' organizations. And the USDA's hope is detailed in McConnell, 47.

⁶⁶College and federal officials (particularly the latter) responded by maintaining that the state federations and the national combination amounted to surprisingly sudden developments that could not have been apprehended in advance, but whose nonpublic character required a clear distinction of extension from the bureaus. See McConnell, 50-53. Thus, in 1921, A.C. True of the USDA's States Relations Service and President James R. Howard of the Federation signed an agreement that allowed agents to give advice and assistance to the bureaus, but which prohibited the educators from taking a direct interest in the management of the county organizations. On this accord and the complaints of other farmers' associations, see William J. Block, The

Separation of the Farm Bureau and the Extension Service: Political Issue in a Federal System (Urbana: University of Illinois Press, 1960), 10-11, 13-14.

⁶⁷M.C. Burritt, The County Agent and the Farm Bureau (New York: Harcourt, Brace, 1922), 66, 105, 78.

⁶⁸On the twentieth-century translation of elements of traditional liberalism into "conservatism," see ch. 3, n. 320 above.

⁶⁹McConnell, ch. 15, contrasts with the implication of this paragraph by arguing that the Bureau strove for a disjunction between federal authority and local operations sufficient to allow the Federation largely unhampered interaction both with college extension departments and with agents at the county level. Nonetheless, regardless of the wish to attenuate national control, it was obvious that the individual bureaus stood in close proximity to the agents who, after all, remained local linkages to an apparatus that culminated in Washington. Moreover, in order to prevent disruption of the power that derived from that nearness, in the early 1940s, for example, the Federation successfully precluded the Farm Security Administration from giving disadvantaged farmers a pipeline to the USDA that might rival the extension channel of the Bureau. On this prevention and the "conservatism" of the Federation, see Dyson, 18-20, 22.

⁷⁰See Busch and Lacy, 26. It should be noted that the bureaus organized on the basis of a class appeal to "superior farmers," while producer groups -- livestock, dairy, and like organizations -- organized on the foundation of a commodity. This discrepancy occasionally placed the two kinds of association at cross-purposes, i.e. a "superior" farmer also produced a respective product and might favor a specific policy of advantage to that crop, but of disadvantage to others in the class. Each of the associated efforts, however, embraced a narrow emphasis on such things as price policy, and this constriction of accent helped to smooth away the conflict. See McConnell, 170; and Burritt, 80.

⁷¹Burritt, 78.

⁷²For example, in Iowa in 1918, farmers began actively involving themselves in the NPL. The Governor of the state feared the involvement would become widespread, and called for a bureau campaign that would steer the husbandmen clear of the radical threat. Agents of the county organizations promptly conducted a windstorm effort that forestalled the advance of the League. See Morlan, 202-203. For commentary on the frequent occurrence of such campaigns (which occasionally received the direct assistance of the USDA) in other areas, see Dyson, 15.

⁷³B.T. Galloway, "The Organization of Cooperative Extension Work, Machinery and Method (In the State)," AAACES, Proc. (1915), 224. Galloway had

previously served in the USDA. C.B. Smith, "The Relation of Farm Bureaus to Farmers' Institute Work," AAAFIW, Proc. (1915), 52, raised a more exalted conception of each bureau as a "permanent church" of enlightened influence in the countryside.

⁷⁴Dyson, 15, notes that the county agents valued the "progressive" farmers in the bureaus as adopters of the latest methods and technology, making the latter "models for their poorer . . . brethren."

⁷⁵A standard work on the clubs is Franklin M. Reck, The 4-H Story: A History of 4-H Club Work (Ames: Iowa State College Press, 1951). But for a study that builds on Reck and adds information subsequent to the period he considered, and which provides the material for this paragraph's mention of Graham, Kern, Otwell, and Knapp, see Thomas Wessel and Marilyn Wessel, 4-H: An American Idea, 1900-1980 (Chevy Chase: National 4-H Council, 1982), 3-5, 12-13. For a contemporary view of the activity of Otwell, Kern, and Graham, see Dick J. Crosby, "Boys' Agricultural Clubs," USDA, Year. (1905): 489-493.

⁷⁶On the nature of club instruction, see I.O. Schaub, "The Boys' and Girls' Club Work," Discussion, AAACES, Proc. (1912), 214. The involvement of businessmen in the youth associations reoccurred during and after the period. On this inclusion and the incentives to value competition, see Wessel and Wessel, 6-7, 14, 34-39.

⁷⁷School officials in the South, however, tended in many instances to retain control of the clubs. See Dyson, 135.

⁷⁸The significance of the Smith-Lever Act and the issue of control are succinctly handled in *ibid.* On the multiple commodities and activities that could ground clubs, see Wessel and Wessel, 10-19 *passim*; and Schaub, 214.

⁷⁹Wessel and Wessel, 8-10, 19, discuss the emergence of the 4-H symbol; while Dyson, 135, notes the reference in the mid-1920s to 4-H clubs.

⁸⁰Quoted in Edward Wiest, Agricultural Organization in the United States (Lexington, KY: University of Kentucky, 1923), 246.

⁸¹William D. Hurd, "Boys' and Girls' Club Work in Relation to Agricultural Education," SPAS, Proc. (1917), 43, 38.

⁸²F.W. Howe, Boys' and Girls' Agricultural Clubs, U.S. Department of Agriculture, Farmers' Bulletin no. 385 (Washington: GPO, 1910), 6.

⁸³Crosby, 496.

⁸⁴Howe, 5, 6, 13.

⁸⁵George I. Christie, Educational Contests in Agriculture and Home Economics, OES, Bulletin no. 255 (1913), 5.

⁸⁶Samuel Haber, Efficiency and Uplift: Scientific Management in the Progressive Era, 1890-1920 (Chicago: University of Chicago Press, 1964), 21-25, 29, 69, provides information on Taylor's background; while Raymond E. Callahan, Education and the Cult of Efficiency: A Study of the Social Forces that Have Shaped the Administration of the Public Schools (Chicago: University of Chicago Press, 1962), 21, notes the varying names for the Philadelphian's undertaking.

⁸⁷The points in this paragraph are taken from the classic criticism of Taylor's work by Harry Braverman, Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century (New York: Monthly Review Press, 1974), 90, 102, 107-112.

⁸⁸Taylor quoted in *Ibid.*, 112, 113.

⁸⁹Quoted in *Ibid.*, 115, 118.

⁹⁰See *Ibid.*, 87-88, 119-120. Although the "human relations" approach to industrial psychology and "personnel management" later attempted to inject a "human" regard for workers' emotional needs into the intensely mechanized regime of Taylorism, the latter-day development did not quarrel with the separation of conception from execution, i.e. it did not dispute the principle that authority should be centralized in managerial hands. See David F. Noble, America by Design: Science, Technology, and the Rise of Corporate Capitalism (New York: Oxford University Press, 1977), 286-290, 296-298.

⁹¹W.J. Spillman, "Systems of Farm Management in the United States," USDA, Year. (1903): 343, 344. On Spillman's background, see "Spillman, William Jasper," Dictionary of American Biography, ed. Dumas Malone, 17 (New York: Scribners, 1935) 458-459.

⁹²Spillman, "Systems of Farm Management," 345; and W.J. Spillman, Discussion, AAACES, Proc. (1913), 145.

⁹³The distinction of farm management from agronomy and animal husbandry is succinctly summarized in W.J. Spillman, "The Relation of Farm Management Work to Other Departments of the College and Experiment Station," Discussion, AAACES, Proc. (1913), 167-168. E.H. Thomson and H.M. Dixon, A Method of Analyzing the Farm Business, U.S. Department of Agriculture, Farmers' Bulletin no. 661 (Washington: GPO, 1917), 1-13, address organizational issues; while G.F. Warren, "Farm Management," ed. Bailey, Farm and Community, 438-439; and

G.N. Lauman, "Rural Economy," ed. Bailey, Farm and Community, 439-441, demonstrate the difference between farm management and rural economics.

⁹⁴Alfred Charles True, A History of Agricultural Education in the United States, 1785-1925, U.S. Department of Agriculture, Miscellaneous Publication no. 36 (Washington: GPO, 1929), 254-255, notes collegiate participation in the development of the new field. The formation of the Farm Management Association is discussed in Harry C. McDean, "Professionalism in the Rural Social Sciences, 1896-1919," Agricultural History 58 (July 1984): 388. And Richard S. Kirkendall, "The Agricultural Colleges: Between Tradition and Modernization," Agricultural History 60 (Spring 1986): 14, comments on Warren's counsel.

⁹⁵C.R. Jones, "Scientific Management as Applied to the Farm, Home and Manufacturing Plants," AAACES, Proc. (1917), 111, 110.

⁹⁶*Ibid.*, 112.

⁹⁷*Ibid.*

⁹⁸He observed that farm-management organization best suited operations with a big capital investment in extensive land area, advanced machinery, and managerial knowhow. This suitability owed to the magnitude of the new system's push for large profits through comprehensively reconstructing cropping schemes, patterns of labor performance, ways of exacting returns from work effort expended, and the like. See W.J. Spillman, "Factors of Efficiency in Farming," USDA, Year. (1914): 93-108.

⁹⁹W.J. Spillman, "The Layout of the Farm," ed. Bailey, vol. 1, Farms, 145; and W.J. Spillman, What Is Farm Management? U.S. Department of Agriculture, Bureau of Plant Industry, Bulletin no. 259 (Washington: GPO, 1912), 8.

¹⁰⁰Spillman, What Is Farm Management? 38.

¹⁰¹Bailey, Farm and Community, 454.

¹⁰²Carl S. Vrooman, "The Work of the U.S. Department of Agriculture for Farmers and Farmers' Institutes," AAFIW, Proc. (1915), 47. Vrooman hoped that the institutes would join farm management (the "most important single proposition" of the agricultural moment) in the "job of bringing a farm up to farm it scientifically" (pp. 47, 49).

¹⁰³E.A. Bryan, Discussion, AAACES, Proc. (1914), 159.

¹⁰⁴H.P. Armsby, W.H. Jordan, and W.J. Spillman, Discussion, AAACES, Proc. (1906), 185, 186.

¹⁰⁵For example, in the traditional one-room district schools of farming neighborhoods, the instructor's authority depended on his or her manifestation of individual character (as well as on being a good hunting companion or a useful helpmate with the farm work of an area). But through the 1907 Nelson Amendment to the fiscal 1908 USDA appropriations bill (an addition that provided for "courses for the special preparation of instructors for teaching the elements of agriculture and the mechanic arts"), college leaders discovered means to furnish teachers for the emerging consolidated schools, and thus assisted in the advancement of the new institutions as organizations based on the principle that the instructor's authority inhered in the office of teacher. Moreover, consolidation represented a drive for centralization that proposed to move children from the neighborhood rooms to centrally located township or county buildings. The text of the Nelson Amendment can be found in numerous documents. Here it is quoted in Henry S. Brunner, Land-Grant Colleges and Universities, 1862-1962, U.S. Department of Health, Education, and Welfare, Office of Education, Bulletin no. 13 (Washington: GPO, 1962), 61. The purpose of the Amendment (which also supported the training of teachers for institutions such as normal schools) receives detailed consideration in A. Ross Hill, "The Preparation of Teachers as Contemplated in the Nelson Amendment," AAACES, Proc. (1915), 96-100. Ironically, one of the best treatments of rural consolidation and the different sources of teacher authority is in the study of urban education by David B. Tyack, The One Best System: A History of American Urban Education (Cambridge: Harvard University Press, 1974), pt. 1. But the reader should not overlook the incisive critique of the push for centralization contained in the regional work of Wayne E. Fuller, The Old Country School: The Story of Rural Education in the Middle West (Chicago: University of Chicago Press, 1982), chs. 3, 6-7, 11 *passim*. Further, Willet M. Hays, Education for Country Life, OES, Circular no. 84 (1909), 9; and W.M. Hays, Country Life Education, OES, Circular no. 73 (1907), 1, professor of agriculture at the University of Minnesota before becoming the USDA's Assistant Secretary of Agriculture in 1904, argued that although the one-room schools had fortified local autonomy and though they had thus "fostered the spirit of world-wide republicanism," each of the consolidated enterprises surpassed them by forming "a wheel in the educational machinery" of a functionally differentiated school ladder that sorted people into the specialized occupational roles of an efficient democracy (see also Hays, Education for Country Life, 10-12).

¹⁰⁶The mollification of references occurred, in particular, in the (Ga.) Southern Cultivator, the (Ill.) Farmers' Review, and the (Ia.) Wallace's Farmer. See Louis Galambos, "The Agrarian Image of the Large Corporation, 1879-1920: A Study in Social Accommodation," The Journal of Economic History 28 (September 1968): 343-344, 349.

¹⁰⁷Thomas F. Hunt, "Co-ordination in the Promotion of Agriculture: President's Address," SPAS, Proc. (1909), 31, 32, 34.

¹⁰⁸College leaders also supported the spread of infrastructural developments in the form of telephones and other household mechanization, e.g. central heating, sewing machines, electric lighting, and the like. See Danbom, 44, 62, 67, 84.

¹⁰⁹The paragraph's biographical details are from "Bailey, Liberty Hyde," The National Cyclopaedia of American Biography, 43 (New York: James T. White, 1961), 514-515.

¹¹⁰On Bailey's friendship with Roosevelt and chairmanship of the Commission, see Philip Dorf, Liberty Hyde Bailey: An Informal Biography (Ithaca: Cornell University Press, 1956), 156; and Andrew Denny Rodgers, III, Liberty Hyde Bailey: A Story of American Plant Sciences (Princeton: Princeton University Press, 1949), 358. William L. Bowers, The Country Life Movement in America, 1900-1920 (Port Washington: Kennikat, 1974), 45, notes the educator's prominence as a reformer; while his prolific work as an author and his service to professional associations are detailed in "Bailey," 514-515.

¹¹¹On Bailey's role as such a philosopher, see Bowers, ch. 4, particularly pp. 45-46.

¹¹²Bailey, Farm and Community, 469, 470, explained that the purpose of nature study was to "develop the child's native interest in himself and his surroundings." This aim would be realized by focusing the pupil on "general, common, normal . . . phenomena," a direction of attention that would release spontaneous sociability, the natural desire to harmonize with others. Nature study also sought to cultivate the "subjective habit" of meditating on the "spiritual" oneness of self with not-self. Bailey contended that the very act of attending to the ordinary objects of the natural environment induced this meditative frame of mind. For further exploration of nature -- sky, plants, animals, et al. -- as a releaser of spontaneity, see L.H. Bailey, The Outlook to Nature, rev. ed. (New York: Macmillan, 1911), 3-10. Meanwhile, Christopher Lasch, The New Radicalism in America, 1889-1963: The Intellectual as a Social Type (New York: Vintage, 1965), 144, notes that John Dewey, too, favored pedagogical ways of expressing the belief that "the inner self represented above all a fund of natural affection and sociability." And Dorf, 190, 192, mentions Bailey's romance with nature and his attachment to Jefferson.

¹¹³See Dorf, 192; and Rodgers, 412.

¹¹⁴Quoted in Rodgers, 365.

¹¹⁵On Bailey's favorable attitude toward nationalism, see ch. 2, nn. 212 and 213 above. His liking for the corporate mode of organization is suggested in n. 101 above. Defense of the unspoiled outdoors reoccurs in Bailey, Outlook to

Nature, *passim*. L.H. Bailey, Universal Service: The Hope of Humanity (New York: Sturgis and Walton, 1918), 78-91, presumes the value of a meritocratic leadership able to diffuse the enlightened "science-spirit" as a substitute for partisan loyalty to parties in the government of society; while L.H. Bailey, The Country-Life Movement in the United States (New York: Macmillan, 1911), 59-60, counsels mastery and conquest of nature. For his embrace of teamwork and farm management, see L.H. Bailey, The Training of Farmers (New York: Century, 1909), 69-75, 195-216. Bailey, Universal Service, 148-149, 154, saluted the farm-bureau "theory" that "every farmer should cooperate" (p. 154).

¹¹⁶Bailey, Training of Farmers, 256. He found the industrial interdependence of the heightened machine age to be not only a necessary development, but a desirable sign of progress as well (see pp. 227-263, particularly pp. 238-240, 250, 263). Moreover, Bailey's evolutionary depiction of social movement was consistent with his Darwinism. See Bailey, Outlook to Nature, ch. 4.

¹¹⁷Note the contrast between the two presented in Orrin L. Keener, Struggle for Equal Opportunity: Dirt Farmers and the American Country Life Association (New York: Vantage Press, 1961), 184. To Bailey, rural development "depends upon the people themselves." To Butterfield, on the other hand, it "depends upon organizational effort."

¹¹⁸Quoted in Editorial, ESR 32 (1915): 104. For an earlier piece that presents a comparable defense of democracy, see L.H. Bailey, "The Rural School; How Can the Farmers' Institute Aid in Improving?" AAFIW, Proc. (1907), 54-55.

¹¹⁹One such commentator is Bowers, 54, 59, 61. Gould P. Colman, Education and Agriculture: A History of the New York State College of Agriculture at Cornell University (Ithaca: Cornell University, 1963), 193, also notes the contradiction that tore at Bailey's consciousness.

¹²⁰Quoted in Rodgers, 423.

¹²¹Bailey's decision conformed to his initial intention to remain in office for only 10 years (1903-13). It also complied with the plan he drew up while still a youth. The blueprint called for the reservation of the final third of his life for activity other than direct public service. See Dorf, 157-165; and Rodgers, 381-385.

¹²²Quoted in Dorf, 159, 165.

¹²³On the Background Books and the shift toward social criticism, see Rodgers, 413-437 *passim*; and Dorf, 189-193. For an example of continuity with his pre-retirement thought, see Bailey, Universal Service, 4-10, 64-77, 92-125.

Reflecting the context of world war that influenced its composition, this book mounted a continuation of earlier calls for cooperative teamwork by arguing that even though military preparedness served the destructive "Principle of Enmity," the preparation also demonstrated the praiseworthy willingness of millions to make sacrifices for what they understood to be the common good (see, in particular, p. 4). On Bailey's previous advocacy of teamwork, see n. 115 above.

¹²⁴See Rodgers, 406-408, 412-413, 426, 437.

¹²⁵Quoted in *Ibid.*, 426; and L.H. Bailey, What Is Democracy? (Ithaca: Comstock, 1918), 105, 106. Here Bailey thinks of politics in terms of governmental forms that announce the intention to protect the citizenry's free exercise of "equal privileges" (p. 106).

¹²⁶Bailey, What Is Democracy? 64-65.

¹²⁷*Ibid.*, 90, 168; and L.H. Bailey, "The Present Responsibility of the Rural People," AAFIW, Proc. (1915), 117. In its social criticism, this address expressed a thematic unity with Bailey's Background Books.

¹²⁸Bailey, What Is Democracy? 91.

¹²⁹*Ibid.*, 92, 93, 91, 94. For a comparable critique of the Smith-Lever Act, see L.H. Bailey, Ground-Levels in Democracy (Ithaca: n.p., 1916), 49-55.

¹³⁰Quoted in Rodgers, 422.

¹³¹See Dorf, 165, 190.

CHAPTER 5

SUMMARY AND CONCLUDING THOUGHTS

Summary

In that late nineteenth century the political hegemony of American liberalism ruptured. Traditional middle-class principles of individual freedom, moral character, decentralized authority, and producer equality lost their capacity to be confirmed in economic reality as the terrain of entrepreneurial capitalism yielded to that of corporate capitalism. Depression accompanied the rise of large-scale organization that undermined faith in individualism. Labor and farm movements responded to the failed expectations of liberalism by challenging the emerging rule of upper middle-class corporations. Populist farmers, in particular, proposed a comprehensive reform program to advance distributive justice. But governmental force quelled mass initiatives.

Concurrently, a rising New-Class of professionals contradicted older esteem for common-sense practicality by seeking to establish an intellectual meritocracy whose administrative state could adapt popular aspirations to the corporate terrain. Enlightened administration might thereby replace the use of physical violence as a basis for social order. }

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In land-grant circles, the rupture appeared in the breach that opened at Kansas State Agricultural College between the 1862 Morrill Act's heritage of self-help and the Populist radicalism that sought to turn the institution's liberalism toward a critique of concentrated wealth and privilege. Most agricultural college leaders avoided replicating the Kansas experiment and focused instead on creating a centralized apparatus (exemplified by the expanding supervisory power of the Office of Experiment Stations of the United States Department of Agriculture). Here the leadership joined others in the New Class in forging vertical structures and behavior compatible with corporate concentration.

By the early twentieth century, amid heightened industrialization and the greater prosperity of the corporation, business leaders spearheaded an "organizational revolution" that aimed at an efficient arrangement of national parts. New-Class technical intelligence assisted in the societal transformation. But class contradictions fractured the nation, preventing the establishment of a social machine characterized by harmonious efficiency. For example, the residue of middle-class principles -- individualism, practicality, and the like -- provided opposition to the esoteric pursuits of scientific experts whose knowledge grounded the hope for mechanical harmony. And the mass of spatially isolated farming people rejected calls to perform as an interdependent cog in the wheel of society. Corporate capitalism consequently faced production shortfalls in agriculture that boded the illegitimacy of the new regime for failing to "deliver the goods."

In their sphere of influence, agricultural college leaders established a tripartite structure of differentiated compromise that responded both to middle-class demands for utilitarian knowhow and to professional desires to pursue advanced undertakings. Resident instruction channeled a prospective New-Class leadership into four-year and graduate degree programs and guided the worldly-minded into practical short courses. Agricultural research increasingly offered the main experiment stations as domains of esoteric inquiry (supported by the Adams Act of 1906) and moved questions of immediate practicality toward substations and other branch activity. Agricultural extension both impressed trickle-down respect for professional knowledge and quartered the cause of utility by incorporating Seaman Knapp's demonstration technique into the national extension system. (The 1914 Smith-Lever Act legislated this incorporation.)

The tripartite organization formed a historical bloc or bond that accommodated competing class interests and ideals. Rural entrepreneurs and organized farmers found that the "tripod" opened out to the transmission of techniques that bolstered profitability and independence in the marketplace. New-Class agriculturists discovered that the tripodal structure could house academic freedom to explore specialized subjects. Business leaders, who acted as the catalyst for nationalized extension work, welcomed the triune arrangement as a means to integrate farming people into the corporate order, and as a way to improve the corporation's public relations through association with the beneficent purposes of education. In turn, the collegiate leadership garnered legitimacy in middle-class perception because the tripod secured the proximity of the colleges

to business practicality, an acquisition that allowed the professionals to reap financial rewards that flowed from the interclass union.

The tripartite organization also signified the embodiment of the Newtonian world machine in the agricultural colleges as business corporations. The subdivided framework of the triune system marked a tangible realization of mechanistic imagining, an actualization based on corporatist principles -- centralization of authority, priority of office over individual, and fragmentation of functions. These assumptions congealed in collegiate practice as sedimentation or taken-for-granted truths regarding the way institutions should work. Like other New-Class efforts, however, this cultural congealment depended on a modification of the Newtonian conception: Instead of relying on natural law to make the machine self-regulating, professional agriculturists substituted their own centralized direction of mechanical processes. By helping to distinguish college from secondary instruction, and "original" from utilitarian research, Alfred True and his colleagues in the Office of Experiment Stations provided much of this guidance.

In order to realize an image of the social world as a machine, the collegiate leadership participated in the larger "progressive" movement to incorporate liberal individualism into an emergent corporate liberalism, into a politics of bureaucratic coordination that arranged functionally atomized groups under a professional management allied with business leaders. This arrangement signalled the reconstitution of liberal agency as a group origination. Power of action derived less from individual self-government and more from the organizational capacity

to assemble individuals as functional atoms for a collective purpose (evidenced, for example, in the recasting of independent inventors as team playing experiment station scientists). Corporate liberalism constituted a fresh way to shape the social destiny of Americans and thus formed a new political hegemony.] (X)

This rising form of rule depended for its ultimate victory, however, on obtaining the loyalty of the farming masses to an ideal of national cohesion, to a vision of harmonious industrial interdependence that imagined the countryside as a site of productive support for the mechanical whole. Agricultural college leaders joined others in the New Class in equating this sustenance with the general good and in constructing the common welfare to depend on the expertise that understood the machine's operation. The sovereignty of individuals and majorities of such might become increasingly meaningless in a nation where only a relative few possessed the requisite knowledge to be the arbiter of social decisions. But farming people had a custom of making their own choices.

College leaders helped start the requisition of mass obligation to the new order by contributing to the construction and conveyance of organizational forms -- the farm bureaus, boys' and girls' clubs, and farm management -- that embodied corporatist principles, and thus expressed the design of corporatism, the strategy of establishing functionally narrow organizations with the potential to be welded into harmonious interaction under centralized authority. Unlike the comprehensive reform program of the neo-Populist Nonpartisan League, these associations relied less on the majoritarian demonstration of bottom-up initiative and more on consent to top-down coordination of single-issue objectives.

Marked notably in the practice of farm management, organized corporatism also sought to universalize Frederick W. Taylor's factory by concentrating synoptic vision with New-Class managers and by reducing mass comprehension to a grasp of fragmented tasks. To the extent that the reduction could be successfully conducted, popular behavior might assume the posture of political passivity characteristic of people who are ignorant of the power relations that condition the whole of societal life. Hence, the era's organizational revolution worked as a passive revolution, a fundamental reconstruction of society, in which the internal operation of the business corporation became increasingly externalized as a "Fordized" form of American order that rendered those on the national shop floor unable to control their social destiny.

After his retirement from the agricultural deanship at Cornell University, Liberty Hyde Bailey criticized the rising culture of organized social machinery for its standardized removal of natural spontaneity. He critiqued the Smith-Lever Act, in particular, for being an anti-democratic manifestation of an organizational tendency to centralize decision-making power. Bailey made his judgments in the name of naturalistic and agrarian liberal conceptions of democracy as the preservation of unique individuality and decentralized authority.

Indeed, whether judged from the naturalist vantage point of Bailey, from the liberal perspective of the traditional middle class, from the egalitarian outlook of the Populists, or from the viewpoint of the "practical anarchy" of the farming neighborhoods, the "democracy of efficiency" of New-Class college leaders must be grasped as having actually constituted an anti-democratic effort to create a

meritocracy of self-appointed governors who grounded the general good in their own orchestration of mechanical harmony: administered justice. Further, if the fair society depends on Bailey's "free play" of local authority or on Populist access to the tools of self-determination, then the administrative conception of a just world, however productive of social concert, fails to author the right order.

Concluding Thoughts

In the second half of the twentieth century, observers located the acceleration in America of an "organizational imperative" that subsumed the individual's aspirations under a drive for the maintenance, growth, and general health of organizations, and that veered in the "totalitarian" direction of acquiring sufficient means of control to ensure total conformity with large-scale purposes.¹ This observation was consistent with the unfoldment of the corporatist principle of priority of office (read: organization) over individual and marked a graduated age of popular dependence on the good offices of bureaucracy. In fact, as mass experience of government came increasingly to consist in contact with one or another administrative department, electoral processes of representation and recourse to nonbureaucratic authority became, as a matter of daily life, of less and less consequence.²

After decades of losing the capital-intensive race of competition, most farming people turned into working people and those that remained on the land found themselves caught between twin embodiments of the organizational imperative. On one side, large "agribusiness" input firms determined the cost of

farm supplies, and, on the other, output counterparts in processing and marketing shaped the price of commodities.³ This corporate squeeze and a decade of financial crisis in agriculture in the 1980s so reduced the farm population that it became possible to speak, in Jefferson's nation, of "the last farmer."⁴

Meanwhile, agricultural college leaders continued their alliance with the leadership of corporations and scarcely relaxed collegiate devotion to the culture of organized social machinery.⁵ The neo-Populist poet and farmer, Wendell Berry, wrote that instead of embracing a "governing human metaphor" that was "pastoral" and rooted in "the natural cycles of birth, growth, death, and decay," land-grant figures helped build a modern world whose "governing metaphor is that of the machine," and whose imagination views "the whole Creation merely as raw material, to be transformed by machines into a manufactured Paradise." College officials, he continued, wished to construct megafarms both to embody this image of perfection and to express the "essential totalitarianism" of the "specialist mind" that approached "the living substance of farming" with the aim "only of subjecting it to total control, of turning it into a machine." He concluded with a forecast of unsettling import for democrats.

The future is already surveyed and ribboned according to the claims of these [professional] people and their clients, the corporate industrialists and big businessmen. It is their New World, and they are its self-elected ruling class.⁶

For the democratic remnant who remain to challenge this brave new destiny, whatever their ideology or other sources of division, it will be necessary to call

Americans back to the egalitarian hope embedded in their beginnings. The land-grant institutions, in particular, must be reminded of Jonathan Turner's desire to prevent any stratum from wielding "their power more or less for their own exclusive interests, and the interests of their friends." The leadership of these schools need to be summoned away from the bond with corporations and to be asked to seek out and serve the cause of popular liberation wherever it may be found.⁷ Thomas Paine once said that common sense demanded freedom from aristocracy, and that in America, "Independance is the only BOND that can tye and keep us together."⁸ In the late twentieth century, we are confronted with an aristocracy of intelligence; common sense makes the same demand for independence.

Endnotes

¹See William G. Scott and David K. Hart, Organizational America (Boston: Houghton Mifflin, 1979), 43-48, 207-214.

²On the mass experience of government and the decline of electoral significance, see Jacques Ellul, The Political Illusion, trans. Konrad Kellen (New York: Vintage, 1967).

³For an excellent critique of the "agribusiness" impact on farmers, see Ingolf Vogeler, The Myth of the Family Farm: Agribusiness Dominance of U.S. Agriculture (Boulder: Westview, 1981), ch. 7.

⁴See Howard Kohn, The Last Farmer: An American Memoir (New York: Summit Books, 1988).

⁵On the continuation of this alliance, see Vogeler, ch. 10; and Jim Hightower, Hard Tomatoes, Hard Times: A Report of the Agribusiness Accountability Project on the Failure of America's Land-Grant College Complex (Cambridge: Schenkman, 1973).

⁶Wendell Berry, The Unsettling of America: Culture and Agriculture (New York: Avon, 1977), 56, 70, 168.

⁷A like recommendation can be found in Edward T. Silva and Sheila Slaughter, "Towards a Political Economy of Retrenchment: The American Public Research Universities," The Review of Higher Education 8 (Summer 1985): 311-316.

⁸Thomas Paine, Common Sense, ed. and introd. Isaac Kramnick (1776; rpt., New York: Penguin, 1976), 121.

BIBLIOGRAPHICAL NOTE

At the beginning of his study of the agricultural colleges in the "progressive" era, the author encountered a scarcity of secondary material devoted exclusively to collegiate development during that period. One can partly compensate for this dearth by searching such general treatments of agricultural professionalism as Harry C. McDean, "Professionalism in the Rural Social Sciences, 1896-1919," Agricultural History 58 (July 1984): 373-392, for specific commentary on the colleges. Or one can probe overviews like Richard S. Kirkendall, "The Agricultural Colleges: Between Tradition and Modernization," Agricultural History 60 (Spring 1986): 3-21, for their brief but informative insights into the era's college activity.

Finally, of course, the student must work from scratch and use primary material to build an understanding of the period's collegiate unfoldment. Here the author found the Proceedings of the national land-grant association to be of most value, especially for a careful tracking of the rise of the tripartite organization. While each is too often overlooked, the Proceedings of the Society for the Promotion of Agricultural Science provide an invaluable record of the concerns of experiment station directors, and the Proceedings of the American Association of Farmers' Institute Workers do the same for extension leaders. The latter also document the rivalry between college officials and farmers' representatives for

control of the institutes. Moreover, and again little used, the discussions following addresses in the land-grant and institute Proceedings offer greater access to spontaneous opinions than is usually the case in official documents. The editorials in the Experiment Station Record of the United States Department of Agriculture give a running summary of practically all important college developments. One should be aware, however, that the Record reflects the cosmopolitan orientation of Alfred True and the Office of Experiment Stations, and thus affords scant admission to various state perspectives. The Annual Reports, Bulletins, and Circulars of the Office manifest a like detachment from local viewpoints, but still furnish both an abundance of useful data and a grasp of mainstream collegiate thinking on a panoply of topics. Articles in the Yearbook of the national Department yield incisive statements on many subjects, but often address issues outside the range of college activity *per se* (notably, Seaman Knapp's Cooperative Demonstration Work and William Spillman's efforts in farm management). All these public documents tend more or less to observe official strictures against airing intraleadership controversies. Yet, as in the instance of this dissertation, if one is interested in the inherently open nature of cultural creation and transmission, then these sources can be of considerable worth.

It should be noted that scholars in the field of higher education have relied for their understanding of college history on works such as Earl F. Cheit, The Useful Arts and the Liberal Tradition (New York: McGraw-Hill, 1975), ch. 3, and this reliance has prevented them from receiving bibliographic direction to the

Agricultural History journal. For decades, this publication has presented investigations into resident instruction, research, and extension. If they do not attend to these studies, higher educators will miss some of the most important material on the agricultural colleges.

In order to understand collegiate beginnings in the nineteenth century, the student should start with Earle D. Ross, Democracy's College: The Land-Grant Movement in the Formative Stage (Ames: Iowa State College Press, 1942), and Edward Danforth Eddy, Jr., Colleges for Our Land and Time: The Land-Grant Idea in American Education (New York: Harper, 1956). These books did much to author the conventional interpretation that celebrates the land-grant institutions as paragons of democracy, and thus are of limited help to critical scholarship. But the books continue to provide a wealth of factual information. Standards on the 1862 Morrill Act are John H. Florer, "Major Issues in the Congressional Debate of the Morrill Act of 1862," History of Education Quarterly 8 (Winter 1968): 459-478, and John Y. Simon, "The Politics of the Morrill Act," Agricultural History 37 (April 1963): 103-111. The indispensable source on Jonathan Turner is Mary Turner Carriel, The Life of Jonathan Baldwin Turner (1911; rpt., Urbana: University of Illinois Press, 1961). For its thorough investigation into the production of the Hatch Act, Alan I. Marcus's, Agricultural Science and the Quest for Legitimacy: Farmers, Agricultural Colleges, and Experiment Stations, 1870-1890 (Ames: Iowa State University Press, 1985), should now be recognized as the basic work on that law. Although researchers have neglected it, L.H. Bailey,

ed., Cyclopedia of American Agriculture, 4 vols., 5th ed. (New York: Macmillan, 1917), 4: 386-430, provides exhaustive detail on nineteenth-century topics.

After entertaining the overview of the significance of the tripartite organization contained in Joseph Bailey Edmond, The Magnificent Charter: The Origin and Role of the Morrill Land-Grant Colleges and Universities (Hicksville: Exposition Press, 1978), chs. 4-6, the investigator should proceed to specialized studies of each of the three divisions. Characterized by the official reluctance to air controversies, but still invaluable as compilations of data on the triune structure, are the classic volumes by Alfred Charles True, A History of Agricultural Education in the United States, 1785-1925, U.S. Department of Agriculture, Miscellaneous Publication no. 36 (Washington: GPO, 1929), Alfred Charles True, A History of Agricultural Experimentation and Research in the United States, 1607-1925, U.S. Department of Agriculture, Miscellaneous Publication no. 251 (Washington: GPO, 1937), and Alfred Charles True, A History of Agricultural Extension Work in the United States, 1785-1923, U.S. Department of Agriculture, Miscellaneous Publication no. 15 (Washington: GPO, 1928). With respect to short-course resident instruction, one must consult Vernon C. Larson, "The Development of Short Courses at the Land Grant Institutions," Agricultural History 31 (April 1957): 31-35. Margaret W. Rossiter, "Graduate Work in the Agricultural Sciences, 1900-1970," Agricultural History 60 (Spring 1986): 37-57, helps to fill a yawning gap in the study of graduate teaching. The best treatment of the struggle between professional scientists and organized farmers for control of the direction of experiment station research is in Charles E. Rosenberg, No Other

Gods: On Science and American Social Thought (Baltimore: Johns Hopkins University Press, 1976), chs. 9-10. David B. Danbom, "The Agricultural Experiment Station and Professionalization: Scientists' Goals for Agriculture," Agricultural History 60 (Spring 1986): 246-255, deepens Rosenberg's work by giving greater attention to scientific efforts to professionalize farmers. Unsurpassed in its exploration of policy debates about the organization of the stations, is H.C. Knoblauch et al., State Agricultural Experiment Stations: A History of Research Policy and Procedure, U.S. Department of Agriculture, Miscellaneous Publication no. 904 (Washington: GPO, 1962). For a study of extension that is important for its rich detail and for its unequalled discussion of corporate involvement in diffusion, read Roy V. Scott, The Reluctant Farmer: The Rise of Agricultural Extension to 1914 (Urbana: University of Illinois Press, 1970). Wayne D. Rasmussen, Taking the University to the People: Seventy-Five Years of Cooperative Extension (Ames: Iowa State University Press, 1989), is valuable both for its biographical information on extension leaders and for adding insight into developments that came after the Smith-Lever Act. But it remains wedded to the ethos of conventional celebration. Still, Rasmussen supersedes Gladys Baker, The County Agent (Chicago: University of Chicago Press, 1939), as the principal source on post-Smith-Lever extension history.

The student may be interested in further reading on the mechanistic culture of college leaders. One of the preeminent examples of such mechanical valuation is Eugene Davenport, Education for Efficiency: A Discussion of Certain

Phases of the Problem of Universal Education with Special Reference to Academic Ideals and Methods, rev. ed. (New York: D.C. Heath, 1914).

Collegiate participation in the new nationalist reconstruction of behavior in the countryside is exemplified in the call for rural contributions to an efficient nation that issues from Kenyon L. Butterfield, Chapters in Rural Progress (Chicago: University of Chicago Press, 1907). The farm bureaus and boys' and girls' clubs constituted organizational forms of that reestablishment, and the literature on these organizations receives sufficient review in the notes to Chapter 4 above. Surprisingly, however, the farm-management form draws little secondary attention. This neglect is all the more surprising when one considers that the "progressive" era was the formative period of the managerial effort. One should begin an appraisal of this endeavor by examining W.J. Spillman, What Is Farm Management? U.S. Department of Agriculture, Bureau of Plant Industry, Bulletin no. 259 (Washington: GPO, 1912), and W.J. Spillman, "Systems of Farm Management in the United States," U.S. Department of Agriculture, Yearbook (Washington: GPO, 1903): 343-364. The student should also be aware that college leaders participated actively in the Country Life Movement, and thus the treatment of the Movement by David B. Danbom, The Resisted Revolution: Urban America and the Industrialization of Agriculture, 1900-1930 (Ames: Iowa State University Press, 1979), offers insight into the nature of collegiate activity in the countryside. Danbom's thesis that traditional farming customs formed a line of resistance to the urban organizational revolution dovetails nicely with this author's argument that a passive revolution countered farm opposition.

Several biographies are available to those who wish to study individual college leaders. The combination of Philip Dorf, Liberty Hyde Bailey: An Informal Biography (Ithaca: Cornell University Press, 1956), and Andrew Denny Rodgers, III, Liberty Hyde Bailey: A Story of American Plant Sciences (Princeton: Princeton University Press, 1949), gives a balanced appreciation of Bailey the man and Bailey the horticulturist. Other figures are ably depicted in James E. Pollard, William Oxley Thompson: "Evangel of Education" (Columbus: Ohio State University, 1955), Edward H. Beardsley, Harry L. Russell and Agricultural Science in Wisconsin (Madison: University of Wisconsin Press, 1969), Selman A. Waksman, Jacob G. Lipman: Agricultural Scientist, Humanitarian (New Brunswick: Rutgers University Press, 1966), and Mabel Hardy Pollitt, A Biography of James Kennedy Patterson: President of the University of Kentucky, from 1869 to 1910 (Louisville: Westerfield-Bonte, 1925).

This bibliographical note merely highlights some of the material that the author found helpful in his work on the agricultural college leadership. For further information on these leaders and for guidance to the documentation that undergirds his discussion both of theoretical method and of larger "progressive" issues, the reader should consult the notes to the chapters above.

BIBLIOGRAPHY

Primary Material: Convention Proceedings
and Government Documents

Convention Proceedings

American Association of Farmers' Institute Workers. Proceedings of the Sixth Annual Meeting of the American Association of Farmers' Institute Workers Held at Buffalo, New York, 18 Sept. to 19 Sept. 1901. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 110. Washington: GPO, 1902.

_____. Proceedings of the Seventh Annual Meeting of the American Association of Farmers' Institute Workers Held at Washington, D.C., 24 June to 26 June 1902. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 120. Washington: GPO, 1902.

_____. Proceedings of the Eighth Annual Meeting of the American Association of Farmers' Institute Workers Held at Toronto, Ontario, 23 June to 26 June 1903. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 138. Washington: GPO, 1903.

_____. Proceedings of the Ninth Annual Meeting of the American Association of Farmers' Institute Workers Held at St. Louis, Missouri, 18 Oct. to 20 Oct. 1904. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 154. Washington: GPO, 1905.

_____. Proceedings of the Tenth Annual Meeting of the American Association of Farmers' Institute Workers Held at Washington, D.C., 9 Nov. to 11 Nov. 1905. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 165. Washington: GPO, 1906.

_____. Proceedings of the Eleventh Annual Meeting of the American Association of Farmers' Institute Workers Held at Baton Rouge, Louisiana, 12 Nov. to 14 Nov. 1906. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 182. Washington: GPO, 1907.

_____. Proceedings of the Twelfth Annual Meeting of the American Association of Farmers' Institute Workers Held at Washington, D.C., 23 Oct. to 24 Oct. 1907. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 199. Washington: GPO, 1908.

_____. Proceedings of the Thirteenth Annual Meeting of the American Association of Farmers' Institute Workers Held at Washington, D.C., 16 Nov. to 17 Nov. 1908. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 213. Washington: GPO, 1909.

_____. Proceedings of the Fourteenth Annual Meeting of the American Association of Farmers' Institute Workers Held at Portland, Oregon, 16 Aug. to 17 Aug. 1909. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 225. Washington: GPO, 1910.

_____. Proceedings of the Fifteenth Annual Meeting of the American Association of Farmers' Institute Workers Held at Washington, D.C., 14 Nov. to 15 Nov. 1910. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 238. Washington: GPO, 1911.

_____. Proceedings of the Sixteenth Annual Meeting of the American Association of Farmers' Institute Workers Held at Columbus, Ohio, 13 Nov. to 14 Nov. 1911. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 251. Washington: GPO, 1912.

_____. Proceedings of the Seventeenth Annual Meeting of the American Association of Farmers' Institute Workers Held at Atlanta, Georgia, 11 Nov. to 13 Nov. 1912. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 256. Washington: GPO, 1913.

_____. Proceedings of the Eighteenth Annual Meeting of the American Association of Farmers' Institute Workers Held at Washington, D.C., 10 Nov. to 12 Nov. 1913. East Lansing: n.p., 1914.

_____. Proceedings of the Nineteenth Annual Meeting of the American Association of Farmers' Institute Workers Held at Washington, D.C., 9 Nov. to 11 Nov. 1914. East Lansing: n.p., 1915.

_____. Proceedings of the Twentieth Annual Meeting of the American Association of Farmers' Institute Workers Held at Berkeley, California, 12 Aug. to 14 Aug. 1915. East Lansing: n.p., 1915.

_____. Proceedings of the Twenty-First Annual Meeting of the American Association of Farmers' Institute Workers Held at Washington, D.C., 13 Nov. to 15 Nov. 1916. East Lansing: n.p., 1917.

Association of American Agricultural Colleges and Experiment Stations. Proceedings of the Twelfth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Washington, D.C., 15 Nov. to 17 Nov. 1898. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 65. Washington: GPO, 1899.

_____. Proceedings of the Thirteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at San Francisco, California, 5 July to 7 July 1899. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 76. Washington: GPO, 1900.

_____. Proceedings of the Fourteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at New Haven and Middletown, Connecticut, 13 Nov. to 15 Nov. 1900. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 99. Washington: GPO, 1901.

_____. Proceedings of the Fifteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Washington, D.C., 12 Nov. to 14 Nov. 1901. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 115. Washington: GPO, 1902.

_____. Proceedings of the Sixteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Atlanta, Georgia, 7 Oct. to 9 Oct. 1902. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 123. Washington: GPO, 1903.

_____. Proceedings of the Seventeenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Washington, D.C., 17 Nov. to 19 Nov. 1903. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 142. Washington: GPO, 1904.

_____. Proceedings of the Eighteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Des Moines, Iowa, 1 Nov. to 3 Nov. 1904. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 153. Washington: GPO, 1905.

_____. Proceedings of the Nineteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Washington, D.C., 14 Nov. to 16 Nov. 1905. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 164. Washington: GPO, 1906.

_____. Proceedings of the Twentieth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Baton Rouge, Louisiana, 14 Nov. to 16 Nov. 1906. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 184. Washington: GPO, 1907.

_____. Proceedings of the Twenty-First Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Lansing, Michigan, 28 May to 30 May 1907. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 196. Washington: GPO, 1907.

_____. Proceedings of the Twenty-Second Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Washington, D.C., 18 Nov. to 20 Nov. 1908. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 212. Washington: GPO, 1909.

_____. Proceedings of the Twenty-Third Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Portland, Oregon, 18 Aug. to 20 Aug. 1909. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 228. Washington: GPO, 1910.

_____. Proceedings of the Twenty-Fourth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Washington, D.C., 16 Nov. to 18 Nov. 1910. Montpelier: Capital City Press, 1911.

_____. Proceedings of the Twenty-Fifth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Columbus, Ohio, 15 Nov. to 17 Nov. 1911. Montpelier: Capital City Press, 1912.

_____. Proceedings of the Twenty-Sixth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Atlanta, Georgia, 13 Nov. to 15 Nov. 1912. Burlington: Free Press Printing, 1913.

_____. Proceedings of the Twenty-Seventh Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Washington, D.C., 12 Nov. to 14 Nov. 1913. Montpelier: Capital City Press, 1914.

_____. Proceedings of the Twenty-Eighth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Washington, D.C., 11 Nov. to 13 Nov. 1914. Montpelier: Capital City Press, 1915.

- _____. Proceedings of the Twenty-Ninth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Berkeley, California, 11 Aug. to 13 Aug. 1915. Montpelier: Capital City Press, 1915.
- _____. Proceedings of the Thirtieth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations Held at Washington, D.C., 15 Nov. to 17 Nov. 1916. Burlington: Free Press Printing, 1917.
- National Educational Association. Journal of Proceedings and Addresses of the Forty-Fifth Annual Meeting of the National Educational Association Held at Los Angeles, California, 8 July to 12 July 1907. N.p.: The Association, 1907.
- National Education Association. Journal of Proceedings and Addresses of the Fifty-First Annual Meeting of the National Education Association Held at Salt Lake City, Utah, 5 July to 11 July 1913. N.p.: The Association, 1913.
- Society for the Promotion of Agricultural Science. Proceedings of the Twenty-First Annual Meeting of the Society for the Promotion of Agricultural Science Held at New York City, New York, 1900. N.p.: The Society, 1900.
- _____. Proceedings of the Twenty-Second Annual Meeting of the Society for the Promotion of Agricultural Science Held at Denver, Colorado, 1901. N.p.: The Society, 1901.
- _____. Proceedings of the Twenty-Third Annual Meeting of the Society for the Promotion of Agricultural Science Held at Pittsburgh, Pennsylvania, 1902. N.p.: The Society, 1902.
- _____. Proceedings of the Twenty-Fourth Annual Meeting of the Society for the Promotion of Agricultural Science Held at Washington, D.C., 1903. N.p.: The Society, 1903.
- _____. Proceedings of the Twenty-Fifth Annual Meeting of the Society for the Promotion of Agricultural Science Held at St. Louis, Missouri, 1904. N.p.: The Society, 1904.
- _____. Proceedings of the Twenty-Sixth Annual Meeting of the Society for the Promotion of Agricultural Science Held at Philadelphia, Pennsylvania, 1905. N.p.: The Society, 1905.
- _____. Proceedings of the Twenty-Seventh Annual Meeting of the Society for the Promotion of Agricultural Science Held at Baton Rouge, Louisiana, 1906. N.p.: The Society, 1906.

- _____. Proceedings of the Twenty-Eighth Annual Meeting of the Society for the Promotion of Agricultural Science Held at Lansing, Michigan, 1907. N.p.: The Society, 1907.
- _____. Proceedings of the Twenty-Ninth Annual Meeting of the Society for the Promotion of Agricultural Science Held at Washington, D.C., 1908. N.p.: The Society, 1908.
- _____. Proceedings of the Thirtieth Annual Meeting of the Society for the Promotion of Agricultural Science Held at Portland, Oregon, 1909. N.p.: The Society, 1909.
- _____. Proceedings of the Thirty-First Annual Meeting of the Society for the Promotion of Agricultural Science Held at Washington, D.C., 15 Nov. 1910. N.p.: The Society, 1911.
- _____. Proceedings of the Thirty-Third Annual Meeting of the Society for the Promotion of Agricultural Science Held at Atlanta, Georgia, 12 Nov. 1912. N.p.: The Society, 1913.
- _____. Proceedings of the Thirty-Fifth Annual Meeting of the Society for the Promotion of Agricultural Science Held at Washington, D.C., 10 Nov. 1914. N.p.: The Society, 1915.
- _____. Proceedings of the Thirty-Seventh Annual Meeting of the Society for the Promotion of Agricultural Science Held at Washington, D.C., 13 Nov. to 14 Nov. 1916. N.p.: The Society, 1917.

Government Documents

- Bailey, L.H. Farmers' Institutes: History and Status in the United States and Canada. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 79. Washington: GPO, 1900.
- Benedict, Francis G., and Thorne M. Carpenter. The Influence of Muscular and Mental Work on Metabolism and the Efficiency of the Human Body as a Machine. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 208. Washington: GPO, 1909.
- Buttrick, Wallace. "Origin and Development of the Work." Education in the South: Abstracts of Papers Read at the Sixteenth Conference for Education in the South Held at Richmond, Virginia, 15 Apr. to 18 Apr. 1913. U.S. Department of the Interior, Bureau of Education, Bulletin no. 30. Washington: GPO, 1913.

Carver, T.N. "The Organization of Rural Interests." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1914): 239-258.

_____. "The Organization of a Rural Community." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1915): 89-138.

Christie, George I. Educational Contests in Agriculture and Home Economics. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 255. Washington: GPO, 1913.

Crosby, Dick J. "Boys' Agricultural Clubs." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1905): 489-496.

Dabney, Charles W., Jr. Civil Service in the Department of Agriculture. U.S. Department of Agriculture, Office of Experiment Stations, Circular no. 33. Washington: GPO, 1897.

Editorial. Experiment Station Record. U.S. Department of Agriculture, Office of Experiment Stations and States Relations Service, 11-35. Washington: GPO, 1900-17.

Hamilton, John. "The Farmers' Institutes." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1904): 149-158.

_____. Form of Organization for Movable Schools of Agriculture. U.S. Department of Agriculture, Office of Experiment Stations, Circular no. 79. Washington: GPO, 1908.

_____. The Transportation Companies as Factors in Agricultural Extension. U.S. Department of Agriculture, Office of Experiment Stations, Circular no. 112. Washington: GPO, 1911.

Hamilton, John, comp. History of Farmers' Institutes in the United States. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 174. Washington: GPO, 1906.

Hamilton, John, ed. College Extension in Agriculture: Discussions Before the Graduate School of Agriculture at the Iowa State College, Ames, Iowa, 4 July to 27 July 1910. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 231. Washington: GPO, 1910.

Hamilton, John, and J.M. Stedman. Farmers' Institutes for Young People. U.S. Department of Agriculture, Office of Experiment Stations, Circular no. 99. Washington: GPO, 1910.

Hays, W.M. Country Life Education. U.S. Department of Agriculture, Office of Experiment Stations, Circular no. 73. Washington: GPO, 1907.

Hays, Willet M. Education for Country Life. U.S. Department of Agriculture, Office of Experiment Stations, Circular no. 84. Washington: GPO, 1909.

Howe, F.W. Boys' and Girls' Agricultural Clubs. U.S. Department of Agriculture, Farmers' Bulletin no. 385. Washington: GPO, 1910.

Jarvis, C.D. Administrative Organization of the College of Agriculture. U.S. Department of the Interior, Bureau of Education, Higher Education Circular no. 8. Washington: GPO, 1918.

Knapp, S.A. "Causes of Southern Rural Conditions and the Small Farm as an Important Remedy." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1909): 311-320.

_____. "The Farmers' Cooperative Demonstration Work." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1910): 153-160.

Report of Committee on Station Organization and Policy. U.S. Department of Agriculture, Office of Experiment Stations, Circular no. 82. Washington: GPO, 1908.

Spillman, W.J. "Factors of Efficiency in Farming." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1914): 93-108.

_____. "Farming as an Occupation for City-Bred Men." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1910): 239-248.

_____. "Systems of Farm Management in the United States." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1903): 343-364.

_____. What Is Farm Management? U.S. Department of Agriculture, Bureau of Plant Industry, Bulletin no. 259. Washington: GPO, 1912.

Thompson, C.W. "How the Department of Agriculture Promotes Organization in Rural Life." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1916): 272A-272P.

Thomson, E.H., and H.M. Dixon. A Method of Analyzing the Farm Business. U.S. Department of Agriculture, Farmers' Bulletin no. 661. Washington: GPO, 1917.

True, A.C. Agricultural Experiment Stations: Their Objects and Work. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 26. Washington: GPO, 1895.

_____. "Agricultural Experiment Stations in the United States." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1900): 513-548.

_____. Permanent Elements in Experiment Station Work. U.S. Department of Agriculture, Office of Experiment Stations, Circular no. 30. Washington: GPO, 1896.

_____. "Popular Education for the Farmer in the United States." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1898): 279-290.

_____. "Some Types of American Agricultural Colleges." U.S. Department of Agriculture. Yearbook (Washington: GPO, 1899): 63-80.

True, A.C., and V.A. Clark. The Agricultural Experiment Stations in the United States. U.S. Department of Agriculture, Office of Experiment Stations, Bulletin no. 80. Washington: GPO, 1900.

True, A.C., and Dick J. Crosby. The American System of Agricultural Education. U.S. Department of Agriculture, Office of Experiment Stations, Circular no. 106. Washington: GPO, 1911.

U.S. Department of Agriculture, Annual Report of the Office of Experiment Stations, for the Fiscal Years Ended 30 June 1901 to 30 June 1912. Washington: GPO, 1902-13.

_____. Report on Agricultural Experiment Stations and Cooperative Agricultural Extension Work in the United States, for the Fiscal Year Ended 30 June 1915. 2 pts. Washington: GPO, 1916.

Primary Material: Books, Articles, and Other Documents

Adams, Henry. The Education of Henry Adams: An Autobiography. 1918. Reprint. Boston: Houghton Mifflin, 1961.

"Agricultural College Extension." Editorial. The Independent 71 (December 1911): 1345-1347.

Association of American Agricultural Colleges and Experiment Stations. Report of Commission on Agricultural Research. N.p.: n.p., 1908.

Bailey, L.H. "College Men as Farm Managers." The Century Magazine, November 1908: 147-152.

_____. The Country-Life Movement in the United States. New York: Macmillan, 1911.

_____. Ground-Levels in Democracy. Ithaca: n.p., 1916.

_____. "Newer Ideas in Agricultural Education." Educational Review 20 (November 1900): 377-382.

_____. The Outlook to Nature. Rev. ed. New York: Macmillan, 1911.

_____. The State and the Farmer. 2nd ed. New York: Macmillan, 1911.

_____. The Training of Farmers. New York: Century, 1909.

_____. Universal Service: The Hope of Humanity. New York: Sturgis and Walton, 1918.

_____. What Is Democracy? Ithaca: Comstock, 1918.

Bailey, L.H., ed. Cyclopedia of American Agriculture. 4 vols. 5th ed. New York: Macmillan, 1917.

Ball, Walter S. "Farming by Mail." The Independent 72 (May 1912): 1052-1057.

Brannon, Melvin A. "Higher Education and the Farm." Educational Review 38 (December 1909): 451-460.

Butterfield, Kenyon L. Chapters in Rural Progress. Chicago: University of Chicago Press, 1907.

_____. The Farmer and the New Day. New York: Macmillan, 1919.

_____. "The Leadership of the Agricultural College." The Independent 65 (August 1908): 368-370.

_____. "Rural School as a Community Center." Education 36 (June 1916): 650-656.

Carnegie Foundation for the Advancement of Teaching. Fourth Annual Report of the President and of the Treasurer. New York: Carnegie Foundation for the Advancement of Teaching, 1909.

- Carriel, Mary Turner. The Life of Jonathan Baldwin Turner. 1911. Reprint. Urbana: University of Illinois Press, 1961.
- Crane, R.T. The Utility of All Kinds of Higher Schooling. Chicago: Henry O. Shepard, 1909.
- Dabney, Charles W. Agricultural Education. Ed. Nicholas Murray Butler. Monographs on Education in the United States, no. 12. Albany: J.B. Lyon, 1904.
- Davenport, Eugene. "The College of Agriculture as a Public Service Institution." Rutgers College: The Celebration of the One Hundred and Fiftieth Anniversary of Its Founding as Queen's College, 1766-1916. New Brunswick: Rutgers College, 1917.
- _____. Education for Efficiency: A Discussion of Certain Phases of the Problem of Universal Education with Special Reference to Academic Ideals and Methods. Rev. ed. New York: D.C. Heath, 1914.
- _____. Letter. "The Constituency of the Experiment Station." Science 37 (June 1913): 907-908.
- _____. "Scientific Farming." The Annals of the American Academy of Political and Social Science 40 (March 1912): 45-50.
- General Education Board. The General Education Board: An Account of Its Activities, 1902-1914. New York: General Education Board, 1915.
- Gross, Howard H. The National Soil Fertility League. Chicago: n.p., 1911.
- James, Edmund J. The Origin of the Land Grant Act of 1862 (the So-Called Morrill Act) and Some Account of Its Author Jonathan B. Turner. Urbana: University of Illinois, 1910.
- Kandel, I.L. Federal Aid for Vocational Education: A Report to the Carnegie Foundation for the Advancement of Teaching, no. 10. Boston: Merrymount Press, 1917.
- Paine, Thomas. Common Sense. Ed. and introd. Isaac Kramnick. 1776. Reprint. New York: Penguin, 1976.
- Powell, E.P. "What the Agricultural Colleges Are Doing." The Independent 66 (April 1909): 797-802.

Powell, Lyman P. "Ten Years of University Extension." The Atlantic Monthly 88 (September 1901): 393-403.

"Promoting Farming Efficiency." Editorial. The Literary Digest 48 (February 1914): 309-310.

"The Railroad and the Farmer." Editorial. The Independent 69 (July 1910): 45-47.

Rasmussen, Wayne D., ed. Agriculture in the United States: A Documentary History. 4 vols. New York: Random House, 1975.

Roads, Charles. Rural Christendom, or the Problems of Christianizing Country Communities. Philadelphia: American Sunday-School Union, 1909.

Rumely, Edward A. "The Passing of the Main with the Hoe." Readings in the Economic History of American Agriculture. Eds. Louis Bernard Schmidt and Earle Dudley Ross. New York: Macmillan, 1925.

Snyder, J.L. Agriculture and Democracy: An Address Delivered by the President of the Association of American Agricultural Colleges and Experiment Stations. Agricultural College Bulletin 3, no. 4. East Lansing: Michigan State Agricultural College, 1908.

Taylor, Frederick W. "The Dedication of the Engineering Building of the University of Pennsylvania: A Comparison of University and Industrial Discipline and Methods." Science 24 (November 1906): 577-583.

True, A.C. "University Extension in Agriculture." Forum 28 (February 1900): 701-707.

Turner, Frederick Jackson. The Frontier in American History. 1920. Reprint. New York: Holt, Rinehart and Winston, 1947.

Veblen, Thorstein. The Higher Learning in America: A Memorandum on the Conduct of Universities by Business Men. New York: B.W. Huebsch, 1918.

Weeks, Arland D. "Ways in Which the Higher Institutions May Serve Rural Communities." Educational Review 40 (October 1910): 229-234.

Secondary Material: The Land-Grant Institutions and
the United States Department of Agriculture

Allen, Herman R. Open Door to Learning: The Land-Grant System Enters Its Second Century. Urbana: University of Illinois Press, 1963.

American Association of Land-Grant Colleges and State Universities. Land-Grant Fact Book: Centennial Edition. Washington: Centennial Office of the Association, 1962.

Baker, Gladys. The County Agent. Chicago: University of Chicago Press, 1939.

Baker, Gladys L., et al. Century of Service: The First One Hundred Years of the United States Department of Agriculture. Washington: USDA, Centennial Committee, 1963.

Beardsley, Edward H. Harry L. Russell and Agricultural Science in Wisconsin. Madison: University of Wisconsin Press, 1969.

Berger, Samuel R. Dollar Harvest: The Story of the Farm Bureau. Lexington, MA: D.C. Heath, 1971.

Bettersworth, John K. People's University: The Centennial History of Mississippi State. Jackson: University Press of Mississippi, 1980.

Bliss, R.K., ed. The Spirit and Philosophy of Extension Work: As Recorded in Significant Extension Papers. Washington: Graduate School, U.S. Department of Agriculture and Epsilon Sigma Phi, 1952.

Block, William J. The Separation of the Farm Bureau and the Extension Service: Political Issue in a Federal System. Urbana: University of Illinois Press, 1960.

Bowman, Mary Jean. "The Land-Grant Colleges and Universities in Human-Resource Development." The Journal of Economic History 22 (December 1962): 523-546.

Brunner, Edmund deS., and E. Hsin Pao Yang. Rural America and the Extension Service: A History and Critique of the Cooperative Agricultural and Home Economics Extension Service. New York: Bureau of Publications, Teachers College, Columbia University, 1949.

- Brunner, Henry S. Land-Grant Colleges and Universities, 1862-1962. U.S. Department of Health, Education, and Welfare, Office of Education, Bulletin no. 13. Washington: GPO, 1962.
- Burlingame, Merrill G. A History: Montana State University, Bozeman, Montana. Bozeman: Montana State University, 1968.
- Burritt, M.C. The County Agent and the Farm Bureau. New York: Harcourt, Brace, 1922.
- Busch, Lawrence, and William B. Lacy. Science, Agriculture, and the Politics of Research. Boulder: Westview, 1983.
- Calcott, George H. A History of the University of Maryland. Baltimore: Maryland Historical Society, 1966.
- Carey, James C. Kansas State University: The Quest for Identity. Lawrence: Regents Press of Kansas, 1977.
- Carstensen, Vernon. "A Century of the Land-Grant Colleges." Journal of Higher Education 33 (1962): 30-37.
- _____. "The Genesis of an Agricultural Experiment Station." Agricultural History 34 (January 1960): 13-20.
- Cary, Harold Whiting. The University of Massachusetts: A History of One Hundred Years. Amherst: University of Massachusetts, 1962.
- Colman, Gould P. Education and Agriculture: A History of the New York State College of Agriculture at Cornell University. Ithaca: Cornell University, 1963.
- Conover, Milton. The Office of Experiment Stations: Its History, Activities, and Organization. U.S. Institute for Government Research, Service Monograph no. 32. Baltimore: Johns Hopkins Press, 1924.
- Curti, Merle, and Vernon Carstensen. The University of Wisconsin: A History, 1848-1925. Madison: University of Wisconsin Press, 1949.
- Danbom, David B. "The Agricultural Experiment Station and Professionalization: Scientists' Goals for Agriculture." Agricultural History 60 (Spring 1986): 246-255.
- Dorf, Philip. Liberty Hyde Bailey: An Informal Biography. Ithaca: Cornell University Press, 1956.

Dunaway, Wayland Fuller. History of the Pennsylvania State College. Lancaster: Pennsylvania State College, 1946.

Eddy, Edward Danforth, Jr. Colleges for Our Land and Time: The Land-Grant Idea in American Education. New York: Harper, 1956.

Edmond, Joseph Bailey. The Magnificent Charter: The Origin and Role of the Morrill Land-Grant Colleges and Universities. Hicksville: Exposition Press, 1978.

Florer, John H. "Major Issues in the Congressional Debate of the Morrill Act of 1862." History of Education Quarterly 8 (Winter 1968): 459-478.

Gates, Paul W. The Wisconsin Pine Lands of Cornell University. Ithaca: Cornell University Press, 1943.

Glover, W.H. Farm and College: The College of Agriculture of the University of Wisconsin, a History. Madison: University of Wisconsin Press, 1952.

Gray, James. The University of Minnesota, 1851-1951. Minneapolis: University of Minnesota Press, 1951.

Hardin, Charles M. Freedom in Agricultural Education. 1955. Reprint. New York: Arno, 1976.

Hatch, Richard A., ed. An Early View of the Land-Grant Colleges: Convention of Friends of Agricultural Education in 1871. Urbana: University of Illinois Press, 1967.

Hightower, Jim. Hard Tomatoes, Hard Times: A Report of the Agribusiness Accountability Project on the Failure of America's Land-Grant College Complex. Cambridge: Schenkman, 1973.

Hunter, William C. Beacon Across the Prairie: North Dakota's Land-Grant College. Fargo: North Dakota Institute for Regional Studies, 1961.

John, Walton C., ed. Land-Grant College Education, 1910 to 1920. 5 vols. U.S. Department of the Interior, Bureau of Education, Bulletin nos. 30, 37, 37, 5, 29. Washington: GPO, 1924-25.

Johnson, Eldon L. "Misconceptions About the Early Land-Grant Colleges." Journal of Higher Education 52 (1981): 333-351.

Jones, C. Clyde. "An Agricultural College's Response to a Changing World." Agricultural History 42 (October 1968): 283-295.

Kellogg, Charles E., and David C. Knapp. The College of Agriculture: Science in the Public Service. New York: McGraw-Hill, 1966.

Kerr, W.J., et al. The Spirit of the Land-Grant Institutions: Addresses Delivered at the Forty-Fifth Annual Convention of the Association of Land-Grant Colleges and Universities Held at Chicago, Illinois, 16 Nov. to 18 Nov. 1931. N.p.: The Association, n.d.

Key, V.O., Jr. The Administration of Federal Grants to States. Chicago: Public Administration Service, 1937.

Kile, O.M. The Farm Bureau Movement. New York: Macmillan, 1921.

_____. The Farm Bureau Through Three Decades. Baltimore: Waverly, 1948.

Kirkendall, Richard S. "The Agricultural Colleges: Between Tradition and Modernization." Agricultural History 60 (Spring 1986): 3-21.

Knoblauch, H.C., et al. State Agricultural Experiment Stations: A History of Research Policy and Procedure. U.S. Department of Agriculture, Miscellaneous Publication no. 904. Washington: GPO, 1962.

Larson, Vernon C. "The Development of Short Courses at the Land Grant Institutions." Agricultural History 31 (April 1957): 31-35.

Lord, Russell. The Agrarian Revival: A Study of Agricultural Extension. New York: American Association for Adult Education, 1939.

Marcus, Alan I. Agricultural Science and the Quest for Legitimacy: Farmers, Agricultural Colleges, and Experiment Stations, 1870-1890. Ames: Iowa State University Press, 1985.

_____. "The Ivory Silo: Farmer-Agricultural College Tensions in the 1870s and 1880s." Agricultural History 60 (Spring 1986): 22-36.

Martin, O.B. The Demonstration Work: Dr. Seaman A. Knapp's Contribution to Civilization. 3rd ed. San Antonio: Naylor, 1941.

Moos, Malcolm. "The Future of the Land Grant University: The University of Maryland Report." Change, May/June 1982: 30-35.

Morris, Stuart. "The Wisconsin Idea and Business Progressivism." Journal of American Studies 4 (July 1970): 39-60.

Mumford, Frederick B. The Land Grant College Movement. University of Missouri, College of Agriculture, Agricultural Experiment Station, Bulletin no. 419. Columbia: University of Missouri, 1940.

Nevins, Allan. The State Universities and Democracy. Urbana: University of Illinois Press, 1962.

Nye, Ronald L. "Federal vs. State Agricultural Research Policy: The Case of California's Tulare Experiment Station, 1888-1909." Agricultural History 57 (October 1983): 436-449.

Pollard, James E. William Oxley Thompson: "Evangel of Education". Columbus: Ohio State University, 1955.

Pollitt, Mabel Hardy. A Biography of James Kennedy Patterson: President of the University of Kentucky, from 1869 to 1910. Louisville: Westerfield-Bonte, 1925.

Rasmussen, Wayne D. Taking the University to the People: Seventy-Five Years of Cooperative Extension. Ames: Iowa State University Press, 1989.

Rasmussen, Wayne D., and Gladys L. Baker. The Department of Agriculture. New York: Praeger, 1972.

Reck, Franklin M. The 4-H Story: A History of 4-H Club Work. Ames: Iowa State College Press, 1951.

Rodgers, Andrew Denny, III. Liberty Hyde Bailey: A Story of American Plant Sciences. Princeton: Princeton University Press, 1949.

Rosenberg, Charles E. No Other Gods: On Science and American Social Thought. Baltimore: Johns Hopkins University Press, 1976.

Ross, Earle D. "Contributions of Land-Grant Education to History and the Social Sciences." Agricultural History 34 (April 1960): 51-61.

_____. Democracy's College: The Land-Grant Movement in the Formative Stage. Ames: Iowa State College Press, 1942.

_____. "The Great Triumvirate of Land-Grant Educators." Journal of Higher Education 32 (1961): 480-488.

_____. A History of the Iowa State College of Agriculture and Mechanic Arts. Ames: Iowa State College Press, 1942.

- _____. "The Land-Grant College: A Democratic Adaptation." Agricultural History 15 (January 1941): 26-36.
- _____. "On Writing the History of Land-Grant Colleges and Universities." Journal of Higher Education 24 (1953): 411-414, 451-452.
- Rossiter, Margaret W. The Emergence of Agricultural Science: Justus Liebig and the Americans, 1840-1880. New Haven: Yale University Press, 1975.
- _____. "Graduate Work in the Agricultural Sciences, 1900-1970." Agricultural History 60 (Spring 1986): 37-57.
- Sauder, Robert A., and Rose M. Sauder. "Regional Variations in Land Alienation: The Agricultural College Act of 1862." Journal of Historical Geography 12 (1986): 365-380.
- Scott, Roy V. "American Railroads and Agricultural Extension, 1900-1914: A Study in Railway Developmental Techniques." Business History Review 39 (1965): 74-98.
- _____. "Railroads and Farmers: Educational Trains in Missouri, 1902-1914." Agricultural History 36 (January 1962): 3-15.
- _____. The Reluctant Farmer: The Rise of Agricultural Extension to 1914. Urbana: University of Illinois Press, 1970.
- Shepardson, Whitney H. Agricultural Education in the United States. New York: Macmillan, 1929.
- Simon, John Y. "The Politics of the Morrill Act." Agricultural History 37 (April 1963): 103-111.
- Smith, Clarence Beaman, and Meredith Chester Wilson. The Agricultural Extension System of the United States. New York: Wiley, 1930.
- Smith, Wilson. "'Cow College' Mythology and Social History: A View of Some Centennial Literature." Agricultural History 44 (July 1970): 299-310.
- Solberg, Winton U. The University of Illinois, 1867-1894: An Intellectual and Cultural History. Urbana: University of Illinois Press, 1968.
- Stadtman, Verne A. The University of California, 1868-1968. New York: McGraw-Hill, 1970.

Stemmons, Walter. Connecticut Agricultural College -- A History. Storrs: Connecticut Agricultural College, 1931.

True, Alfred Charles. A History of Agricultural Education in the United States, 1785-1925. U.S. Department of Agriculture, Miscellaneous Publication no. 36. Washington: GPO, 1929.

_____. A History of Agricultural Experimentation and Research in the United States, 1607-1925. U.S. Department of Agriculture, Miscellaneous Publication no. 251. Washington: GPO, 1937.

_____. A History of Agricultural Extension Work in the United States, 1785-1923. U.S. Department of Agriculture, Miscellaneous Publication no. 15. Washington: GPO, 1928.

Waksman, Selman A. Jacob G. Lipman: Agricultural Scientist, Humanitarian. New Brunswick: Rutgers University Press, 1966.

Wessel, Thomas, and Marilyn Wessel. 4-H: An American Idea, 1900-1980. Chevy Chase: National 4-H Council, 1982.

Willard, Julius Terrass. History of the Kansas State College of Agriculture and Applied Science. Manhattan: Kansas State College Press, 1940.

Works, George A., and Barton Morgan. The Land-Grant Colleges. Advisory Committee on Education, Staff Study no. 10. Washington: GPO, 1939.

Secondary Material: Higher Education

Ben-David, Joseph. American Higher Education: Directions Old and New. New York: McGraw-Hill, 1972.

Bledstein, Burton J. The Culture of Professionalism: The Middle Class and the Development of Higher Education in America. New York: W.W. Norton, 1976.

Brubacher, John S., and Willis Rudy. Higher Education in Transition: A History of American Colleges and Universities, 1636-1976. 3rd ed. New York: Harper, 1976.

Cheit, Earl F. The Useful Arts and the Liberal Tradition. New York: McGraw-Hill, 1975.

Geiger, Louis G. Higher Education in a Maturing Democracy. Lincoln: University of Nebraska Press, 1963.

Graebner, William. "The Origins of Retirement in Higher Education: The Carnegie Pension System." Academe, March 1979: 97-103.

Jencks, Christopher, and David Riesman. The Academic Revolution. 3rd ed. Chicago: University of Chicago Press, 1977.

Lagemann, Ellen Condliffe. Private Power for the Public Good: A History of the Carnegie Foundation for the Advancement of Teaching. Middletown: Wesleyan University Press, 1983.

Metzger, Walter P. Academic Freedom in the Age of the University. New York: Columbia University Press, 1955.

Rudolph, Frederick. The American College and University: A History. New York: Vintage, 1962.

Schwebel, Milton. "Pluralism and Diversity in American Higher Education." The Annals of the American Academy of Political and Social Science 404 (November 1972): 88-100.

Silva, Edward T., and Sheila Slaughter. "Towards a Political Economy of Retrenchment: The American Public Research Universities." The Review of Higher Education 8 (Summer 1985): 295-318.

Smith, David N. Who Rules the Universities? An Essay in Class Analysis. New York: Monthly Review Press, 1974.

Thelin, John R. Higher Education and Its Useful Past: Applied History in Research and Planning. Cambridge: Schenkman, 1982.

Trow, Martin. "American Higher Education: Past, Present, and Future." Educational Researcher 17 (April 1988): 13-23.

Veysey, Laurence R. The Emergence of the American University. Chicago: University of Chicago Press, 1965.

Secondary Material: General History

Berlin, Isaiah, comp. The Age of Enlightenment: The 18th Century Philosophers. New York: New American Library, 1956.

Berman, Morris. The Reenchantment of the World. Ithaca: Cornell University Press, 1981.

Berry, Wendell. The Unsettling of America: Culture and Agriculture. New York: Avon, 1977.

Boorstin, Daniel J. The Americans: The Democratic Experience. New York: Vintage, 1973.

Bowers, William L. The Country Life Movement in America, 1900-1920. Port Washington: Kennikat, 1974.

Bowles, Samuel, and Herbert Gintis. Democracy and Capitalism: Property, Community, and the Contradictions of Modern Social Thought. New York: Basic Books, 1986.

Braverman, Harry. Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century. New York: Monthly Review Press, 1974.

Brecher, Jeremy. Strike! Boston: South End Press, 1972.

Burgess, Charles, and Merle L. Borrowman. What Doctrines to Embrace: Studies in the History of American Education. Glenview: Scott, Foresman, 1969.

Busch, Lawrence, ed. Science and Agricultural Development. Totowa: Allanheld, Osmun, 1981.

Callahan, Raymond E. Education and the Cult of Efficiency: A Study of the Social Forces that Have Shaped the Administration of the Public Schools. Chicago: University of Chicago Press, 1962.

Carroll, Peter N., and David W. Noble. The Free and the Unfree: A New History of the United States. 2nd ed. New York: Penguin, 1988.

Chandler, Alfred D., Jr. The Visible Hand: The Managerial Revolution in American Business. Cambridge: Harvard University Press, Belknap, 1977.

Cipolla, Carlo M. Clocks and Culture, 1300-1700. New York: W.W. Norton, 1967.

- Clevenger, Homer. "The Teaching Techniques of the Farmers' Alliance: An Experiment in Adult Education." The Journal of Southern History 11 (November 1945): 504-518.
- Cochran, Thomas C. The American Business System: A Historical Perspective, 1900-1955. 1957. Reprint. New York: Harper Torchbooks, 1957.
- Cochrane, Willard W. The Development of American Agriculture: A Historical Analysis. Minneapolis: University of Minnesota Press, 1979.
- Cremin, Lawrence A. American Education: The National Experience, 1783-1876. New York: Harper Colophon, 1980.
- _____. The Transformation of the School: Progressivism in American Education, 1876-1957. New York: Alfred A. Knopf, 1961.
- Curti, Merle. The Social Ideas of American Educators: With New Chapter on the Last Twenty-Five Years. 1935. Reprint. Totowa: Littlefield, Adams, 1959.
- Danbom, David B. The Resisted Revolution: Urban America and the Industrialization of Agriculture, 1900-1930. Ames: Iowa State University Press, 1979.
- Douglas, Louis H., ed. Agrarianism in American History. Lexington, MA: D.C. Heath, 1969.
- Dyson, Lowell K. Farmers' Organizations. New York: Greenwood, 1986.
- Ewen, Stuart, and Elizabeth Ewen. Channels of Desire: Mass Images and the Shaping of American Consciousness. New York: McGraw-Hill, 1982.
- Faulkner, Harold U. The Decline of Laissez-Faire. New York: Holt, Rinehart and Winston, 1961.
- Fite, Gilbert C. American Farmers: The New Minority. Bloomington: Indiana University Press, 1981.
- Foner, Eric. Free Soil, Free Labor, Free Men: The Ideology of the Republican Party Before the Civil War. New York: Oxford University Press, 1970.
- Foner, Philip S. History of the Labor Movement in the United States. 6 vols. New York: International Publishers, 1947-82.
- Freidson, Eliot. "The Theory of Professions: State of the Art." The Sociology of the Professions: Lawyers, Doctors and Others. Eds. Robert Dingwall and Philip Lewis. New York: St. Martins, 1983.

Fuller, Wayne E. The Old Country School: The Story of Rural Education in the Middle West. Chicago: University of Chicago Press, 1982.

_____. "The Rural Roots of the Progressive Leaders." Agricultural History 42 (January 1968): 1-13.

Galambos, Louis. "The Agrarian Image of the Large Corporation, 1879-1920: A Study in Social Accommodation." The Journal of Economic History 28 (September 1968): 341-362.

Genovese, Eugene D. Roll, Jordan, Roll: The World the Slaves Made. New York: Vintage, 1974.

Giedion, Siegfried. Mechanization Takes Command: A Contribution to Anonymous History. New York: Oxford University Press, 1948.

Gimpel, Jean. The Medieval Machine: The Industrial Revolution of the Middle Ages. New York: Penguin, 1976.

Ginger, Ray. Age of Excess: The United States from 1877 to 1914. New York: Macmillan, 1965.

Goodwyn, Lawrence. Democratic Promise: The Populist Moment in America. New York: Oxford University Press, 1976.

_____. The Populist Moment: A Short History of the Agrarian Revolt in America. New York: Oxford University Press, 1978.

Gouldner, Alvin W. The Future of Intellectuals and the Rise of the New Class. New York: Oxford University Press, 1979.

Green, James. "Populism, Socialism and the Promise of Democracy." Radical History Review, no. 24 (Fall 1980): 7-40.

Green, James R. Grass-Roots Socialism: Radical Movements in the Southwest, 1895-1943. Baton Rouge: Louisiana State University Press, 1978.

Gutman, Herbert G. Work, Culture, and Society in Industrializing America: Essays in American Working-Class and Social History. New York: Vintage, 1976.

Haber, Samuel. Efficiency and Uplift: Scientific Management in the Progressive Era, 1890-1920. Chicago: University of Chicago Press, 1964.

Hahn, Steven, and Jonathan Prude, eds. The Countryside in the Age of Capitalist Transformation: Essays in the Social History of Rural America. Chapel Hill: University of North Carolina Press, 1985.

Hartz, Louis. The Liberal Tradition in America: An Interpretation of American Political Thought Since the Revolution. New York: Harcourt Brace Jovanovich, 1955.

Havard, William C. "Political Education: Who Gets What, When, How and Why." The Journal of Politics 42 (November 1980): 934-950.

Hawley, Ellis W. "The Discovery and Study of a 'Corporate Liberalism.'" Business History Review 52 (Autumn 1978): 309-320.

Hays, Samuel P. Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920. 1959. Reprint. New York: Atheneum, 1980.

_____. The Response to Industrialism, 1885-1914. Chicago: University of Chicago Press, 1957.

Heilbroner, Robert L. The Worldly Philosophers: The Lives, Times, and Ideas of the Great Economic Thinkers. 4th ed. New York: Simon and Schuster, 1972.

Higgs, Robert. The Transformation of the American Economy, 1865-1914: An Essay in Interpretation. New York: Wiley, 1971.

Hofstadter, Richard. The Age of Reform: From Bryan to F.D.R. New York: Vintage, 1955.

_____. The American Political Tradition: And the Men Who Made It. 1948. Reprint. New York: Vintage, 1973.

_____. Anti-Intellectualism in American Life. New York: Knopf, 1963.

_____. Social Darwinism in American Thought. Rev. ed. Boston: Beacon, 1955.

Interrante, Joseph. "You Can't Go to Town in a Bathtub: Automobile Movement and the Reorganization of Rural American Space, 1900-1930." Radical History Review, no. 21 (Fall 1979): 151-168.

Karier, Clarence J., ed. Shaping the American Educational State: 1900 to the Present. New York: Free Press, 1975.

Kasson, John F. Civilizing the Machine: Technology and Republican Values in America, 1776-1900. New York: Penguin, 1976.

Keener, Orrin L. Struggle for Equal Opportunity: Dirt Farmers and the American Country Life Association. New York: Vantage Press, 1961.

Kennedy, David M. "Overview: The Progressive Era." The Historian 37 (May 1975): 453-468.

Kolko, Gabriel. Main Currents in Modern American History. 1976. Reprint. New York: Pantheon, 1984.

_____. The Triumph of Conservatism: A Reinterpretation of American History, 1900-1916. New York: Free Press, 1963.

Larson, Magali Sarfatti. The Rise of Professionalism: A Sociological Analysis. Berkeley: University of California Press, 1977.

Lasch, Christopher. The New Radicalism in America, 1889-1963: The Intellectual as a Social Type. New York: Vintage, 1965.

Lears, T.J. Jackson. No Place of Grace: Antimodernism and the Transformation of American Culture, 1880-1920. New York: Pantheon, 1981.

Lustig, R. Jeffrey. Corporate Liberalism: The Origins of Modern American Political Theory, 1890-1920. Berkeley: University of California Press, 1982.

Macpherson, C.B. The Political Theory of Possessive Individualism: Hobbes to Locke. New York: Oxford University Press, Clarendon, 1962.

Marx, Leo. The Machine in the Garden: Technology and the Pastoral Ideal in America. New York: Oxford University Press, 1964.

McConnell, Grant. The Decline of Agrarian Democracy. Berkeley: University of California Press, 1953.

McCormick, Richard L. "The Discovery that Business Corrupts Politics: A Reappraisal of the Origins of Progressivism." The American Historical Review 86 (April 1981): 247-274.

McDean, Harry C. "Professionalism in the Rural Social Sciences, 1896-1919." Agricultural History 58 (July 1984): 373-392.

McNall, Scott G. The Road to Rebellion: Class Formation and Kansas Populism, 1865-1900. Chicago: University of Chicago Press, 1988.

McNall, Scott G., and Sally Allen McNall. Plains Families: Exploring Sociology Through Social History. New York: St. Martins, 1983.

Meier, Hugo A. "Thomas Jefferson and a Democratic Technology." Technology in America: A History of Individuals and Ideas. Ed. Carroll W. Pursell, Jr. Cambridge: MIT Press, 1981.

Meiksins, Peter F. "Scientific Management and Class Relations: A Dissenting View." Theory and Society 13 (March 1984): 177-209.

Metzger, Walter P. "What Is a Profession?" College and University 52 (Fall 1976): 42-55.

Moore, Barrington, Jr. Social Origins of Dictatorship and Democracy: Lord and Peasant in the Making of the Modern World. Boston: Beacon, 1966.

Morlan, Robert L. Political Prairie Fire: The Nonpartisan League, 1915-1922. Minneapolis: University of Minnesota Press, 1955.

Mumford, Lewis. The Myth of the Machine: Technics and Human Development. New York: Harcourt, Brace and World, 1966.

Noble, David. "Corporate Roots of American Science." Science and Liberation. Eds. Rita Arditti, Pat Brennan, and Steve Cavrak. Boston: South End Press, 1980.

Noble, David F. America by Design: Science, Technology, and the Rise of Corporate Capitalism. New York: Oxford University Press, 1977.

Noble, David W. The Progressive Mind, 1890-1917. Chicago: Rand McNally, 1970.

Palmer, Bruce. "Man Over Money": The Southern Populist Critique of American Capitalism. Chapel Hill: University of North Carolina Press, 1980.

Pelling, Henry. American Labor. Chicago: University of Chicago Press, 1960.

Peterson, Merrill D. The Jefferson Image in the American Mind. New York: Oxford University Press, 1960.

Pisani, Donald J. "Reclamation and Social Engineering in the Progressive Era." Agricultural History 57 (January 1983): 46-63.

Pollack, Norman. The Populist Response to Industrial America: Midwestern Populist Thought. Cambridge: Harvard University Press, 1962.

- Porter, Glenn. The Rise of Big Business, 1860-1910. Arlington Heights: AHM, 1973.
- Rasmussen, Wayne D., ed. Readings in the History of American Agriculture. Urbana: University of Illinois Press, 1960.
- Riesman, David, et al. The Lonely Crowd. Garden City: Anchor, 1953.
- Rodgers, Daniel T. "In Search of Progressivism." The Promise of American History: Progress and Prospects. Eds. Stanley I. Kutler and Stanley N. Katz. Baltimore: Johns Hopkins University Press, 1982.
- _____. The Work Ethic in Industrial America, 1850-1920. Chicago: University of Chicago Press, 1978.
- Rydell, Robert W. All the World's a Fair: Visions of Empire at American International Expositions, 1876-1916. Chicago: University of Chicago Press, 1984.
- Saville, Max. Is Liberalism Dead? And Other Essays. Seattle: University of Washington Press, 1967.
- Schafer, Joseph. The Social History of American Agriculture. New York: Macmillan, 1936.
- Schlebecker, John T. Whereby We Thrive: A History of American Farming, 1607-1972. Ames: Iowa State University Press, 1975.
- Scott, William G., and David K. Hart. Organizational America. Boston: Houghton Mifflin, 1979.
- Shannon, Fred A. The Farmers' Last Frontier: Agriculture, 1860-1897. New York: Farrar and Rinehart, 1945.
- Silva, Edward T., and Sheila Slaughter. "Prometheus Bound: The Limits of Social Science Professionalization in the Progressive Period." Theory and Society 9 (November 1980): 781-819.
- Sklar, Martin J. The Corporate Reconstruction of American Capitalism, 1890-1916: The Market, the Law, and Politics. Cambridge: Cambridge University Press, 1988.
- Skowronek, Stephen. Building a New American State: The Expansion of National Administrative Capacities, 1877-1920. Cambridge: Cambridge University Press, 1982.

- Smith, Henry Nash. Virgin Land: The American West as Symbol and Myth. Cambridge: Harvard University Press, 1950.
- Soloutos, Theodore. "The Agricultural Problem and Nineteenth-Century Industrialism." Agricultural History 22 (July 1948): 156-174.
- Spring, Joel H. Education and the Rise of the Corporate State. Boston: Beacon, 1972.
- Stabile, Donald. Prophets of Order: The Rise of the New Class, Technocracy and Socialism in America. Boston: South End Press, 1984.
- Tontz, Robert L. "Memberships of General Farmers' Organizations, United States, 1874-1960." Agricultural History 38 (July 1964): 143-156.
- Turner, James. "Understanding the Populists." The Journal of American History 67 (September 1980): 354-373.
- Tyack, David B. The One Best System: A History of American Urban Education. Cambridge: Harvard University Press, 1974.
- Tyack, David, and Elisabeth Hansot. Managers of Virtue: Public School Leadership in America, 1820-1980. New York: Basic Books, 1982.
- Vogeler, Ingolf. The Myth of the Family Farm: Agribusiness Dominance of U.S. Agriculture. Boulder: Westview, 1981.
- Walker, Pat, ed. Between Labor and Capital: The Professional-Managerial Class. Boston: South End Press, 1979.
- Wallace, Anthony F.C. "The Industrialist as Hero: An Emerging Educational Theme in Nineteenth Century America." Educational Studies 12 (Spring 1981): 69-83.
- Weinstein, James. The Corporate Ideal in the Liberal State: 1900-1918. Boston: Beacon, 1968.
- White, Lynn, Jr. Machina Ex Deo: Essays in the Dynamism of Western Culture. Cambridge: MIT Press, 1968.
- Whyte, William H., Jr. The Organization Man. New York: Simon and Schuster, 1956.
- Wiebe, Robert H. Businessmen and Reform: A Study of the Progressive Movement. 1962. Reprint. Chicago: Quadrangle, 1962.

_____. The Search for Order, 1877-1920. New York: Hill and Wang, 1967.

Wiest, Edward. Agricultural Organization in the United States. Lexington, KY: University of Kentucky, 1923.

Williams, William Appleman. The Roots of the Modern American Empire: A Study of the Growth and Shaping of Social Consciousness in a Marketplace Society. New York: Random House, 1969.

Wirth, Arthur G. Education in the Technological Society: The Vocational-Liberal Studies Controversy in the Early Twentieth Century. Scranton: Intext Educational Publishers, 1972.

Wyllie, Irvin G. The Self-Made Man in America: The Myth of Rags to Riches. New Brunswick: Rutgers University Press, 1954.

Zinn, Howard. A People's History of the United States. New York: Harper Colophon, 1980.

Secondary Material: Theory and Method

Anderson, Perry. "The Antinomies of Antonio Gramsci." New Left Review, no. 100 (November 1976-January 1977): 5-78.

Apple, Michael W. Education and Power: Reproduction and Contradiction in Education. London: Routledge and Kegan Paul, 1982.

Apple, Michael W., ed. Cultural and Economic Reproduction in Education: Essays on Class, Ideology, and the State. London: Routledge and Kegan Paul, 1982.

Aronowitz, Stanley. The Crisis in Historical Materialism: Class, Politics and Culture in Marxist Theory. New York: Praeger, 1981.

Barnes, Barry. Interests and the Growth of Knowledge. London: Routledge and Kegan Paul, 1977.

Boggs, Carl. Gramsci's Marxism. London: Pluto Press, 1976.

_____. The Two Revolutions: Antonio Gramsci and the Dilemmas of Western Marxism. Boston: South End Press, 1984.

Boulding, Kenneth E. The Image: Knowledge in Life and Society. Ann Arbor: University of Michigan Press, 1956.

Eisele, J. Christopher. "Defining Education: A Problem for Educational History." Educational Theory 30 (Winter 1980): 25-33.

Feinberg, Walter, et al. Revisionists Respond to Ravitch. Washington: National Academy of Education, 1980.

Femia, Joseph V. Gramsci's Political Thought: Hegemony, Consciousness, and the Revolutionary Process. New York: Oxford University Press, 1981.

Freire, Paulo. Pedagogy of the Oppressed. Trans. Myra Bergman Ramos. New York: Seabury Press, 1970.

Genovese, Eugene D. "On Antonio Gramsci." For a New America: Essays in History and Politics from "Studies on the Left," 1959-1967. Eds. James Weinstein and David W. Eakins. New York: Vintage, 1970.

Giroux, Henry. Ideology, Culture and the Process of Schooling. Philadelphia: Temple University Press, 1981.

Giroux, Henry A. "Theories of Reproduction and Resistance in the New Sociology of Education: A Critical Analysis." Harvard Educational Review 53 (August 1983): 257-293.

Gramsci, Antonio. Letters from Prison. Trans. and introd. Lynne Lawner. New York: Harper Colophon, 1973.

_____. Selections from the Prison Notebooks. Ed. and trans. Quintin Hoare and Geoffrey Nowell Smith. New York: International Publishers, 1971.

Heilbroner, Robert L. Marxism: For and Against. New York: W.W. Norton, 1980.

Hirsh, Arthur. The French New Left: An Intellectual History from Sartre to Gorz. Boston: South End Press, 1981.

Hobsbawm, Eric. "Marx and History." New Left Review, no. 143 (January-February 1984): 39-50.

Jay, Martin. The Dialectical Imagination: A History of the Frankfurt School and the Institute of Social Research, 1923-1950. Boston: Little, Brown, 1973.

Marcuse, Herbert. One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society. Boston: Beacon, 1964.

- _____. Reason and Revolution: Hegel and the Rise of Social Theory. 1941. Reprint. Boston: Beacon, 1960.
- Marx, Karl. Selected Writings in Sociology and Social Philosophy. Ed. and trans. T.B. Bottomore and Maximilien Rubel. New York: McGraw-Hill, 1956.
- Murphy, Raymond. "Power and Autonomy in the Sociology of Education." Theory and Society 11 (March 1982): 179-203.
- Piccone, Paul. "Gramsci's Marxism: Beyond Lenin and Togliatti." Theory and Society 4 (Winter 1976): 485-512.
- Popkewitz, Thomas. "Paradigms in Educational Science: Different Meanings and Purpose to Theory." Journal of Education 162 (Winter 1980): 28-46.
- Ravitch, Diane. The Revisionists Revised: A Critique of the Radical Attack on the Schools. New York: Basic Books, 1978.
- Sassoon, Anne Showstack, ed. Approaches to Gramsci. London: Writers and Readers, 1982.
- Shafer, Robert Jones, Ed. A Guide to Historical Method. 3rd ed. Homewood: Dorsey, 1980.
- Thompson, E.P. The Making of the English Working Class. New York: Pantheon, 1963.
- _____. The Poverty of Theory and Other Essays. New York: Monthly Review Press, 1978.
- Ulin, Robert C. Understanding Cultures: Perspectives in Anthropology and Social Theory. Austin: University of Texas Press, 1984.
- Weiner, Richard R. Cultural Marxism and Political Sociology. Beverly Hills: Sage, 1981.
- Williams, Raymond. "Base and Superstructure in Marxist Cultural Theory." New Left Review, no. 82 (November-December 1973): 3-16.
- _____. Keywords: A Vocabulary of Culture and Society. New York: Oxford University Press, 1976.
- _____. Marxism and Literature. New York: Oxford University Press, 1977.

_____. Problems in Materialism and Culture: Selected Essays. London: Verso, 1980.

Dissertations and Miscellanea

"Bailey, Liberty Hyde." The National Cyclopaedia of American Biography. 43. New York: James T. White, 1961.

Ellul, Jacques. The Political Illusion. Trans. Konrad Kellen. New York: Vintage, 1967.

Fitzgerald, Peter Hopkins. "Democracy, Utility, and Two Land-Grant Colleges in the Nineteenth Century: The Rhetoric and the Reality of Reform." Ph.D. diss., Stanford University, 1972.

"Knapp, Seaman Asahel." The National Cyclopaedia of American Biography. 28. New York: James T. White, 1940.

Kohn, Howard. The Last Farmer: An American Memoir. New York: Summit Books, 1988.

Mann, Lawrence Robert. "The National Association of State Universities and Land-Grant Colleges: A Political Interest Group and Its Congressional Relations, 1887-1958." Ph.D. diss., University of Illinois, 1979.

Mohr, Joland Ethel. "Higher Education and the Development of Professionalism in Post-Civil War America: A Content Analysis of Inaugural Addresses Given by Selected Land-Grant College and University Presidents, 1867-1911." 2 vols. Ph.D. diss., University of Minnesota, 1984.

Riley, Thomas Leslie. "The Development of Extension in the Land-Grant Universities, 1862-1914." Ph.D. diss., University of Chicago, 1965.

Silverstein, Brett. Fed Up: The Food Forces that Make You Fat, Sick and Poor. Boston: South End Press, 1984.

"Spillman, William Jasper." Dictionary of American Biography. Ed. Dumas Malone. 17. New York: Scribners, 1935.

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