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## Misconceptions About the Early Land-Grant Colleges

The universities called “land grant” have cut a wide swath in the history of American higher education. They deserve to be acclaimed, but they ought also to be better understood. Paradoxically, their long struggle for recognition and respectability has been so fully won that criticism has turned to unthinking acceptance. As a result, some misconceptions have arisen and flourished alongside the neglect of other matters of great significance, past and present.

What is both overestimated and underestimated really does matter if we have regard, not merely for the truth, but also for a balanced view of university development at home and of what is being imported by developing countries abroad. The misconceptions arise as we roll history back, proceeding from what we have fixed in our minds now; hence, we attribute to the early land-grant colleges the characteristics that exist today. What the colleges now *are* is merely what they *were* writ large. Far from it.

These colleges of humble origin, all derived from land grants to the states under the Morrill Act of 1862, are extremely important and do have a claim to uniqueness, but not always for the reasons assumed. They are no longer colleges. They are, in the main, full-fledged universities. They exist in every state and in most of the territories. They comprise a national system, derived from national policy. As a category, they supply eight of the ten largest undergraduate campuses in the United States and enroll more than one-seventh of all university students. They and the state universities together produce two out of every

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three doctoral degrees granted nationally. In other words, they are prime actors at both extremes: in mass education with its emphasis on “equal access,” and in graduate training with its emphasis on research specialization. They are the bulwarks of scientific and technological education. By the terms of the enabling act, they encompass agriculture and mechanic arts; but whatever their beginnings, they now embrace a much broader curriculum—either science and technology generally, with the related professions, or the whole complement indistinguishable from the most comprehensive and traditional universities. In their original rebellion against classical instruction only, they put things scientific at the center, around which an unusually strong research orientation has developed, with an emphasis on application and problem solving. Thus was born the now famous academic trilogy: instruction, research, and service—a mission description that virtually every institution, public or private, now embraces, however different the interpretations.

These are the characteristics in which misconceptions have become embedded as history is neglected or time ignored. Concurrently, some decisive considerations have dropped almost entirely from our awareness. Four of the common misconceptions and two of the neglected considerations will be treated here. The sources used are the individual institutional histories of the early land-grant colleges, taking 1890 as the approximate terminal date. Such histories, taken together, give a composite picture that strikes the reader with insights that are not so conspicuous in the individual histories because they are understandably introspective.

### *Land Grant Uniqueness*

It is quite erroneous, first, that use of land grants was or is the distinguishing characteristic of the so-called land-grant colleges, despite the inseparable name. Nor was the practice by any means novel. Indeed it was so well established that Senator Justin Morrill, the legislative author, and his hundreds of intellectual allies were merely making a special application in 1862. That the impact was revolutionary in the end derived from a host of other considerations, not from a new social invention.

The precedents were ancient, numerous, and of high visibility. The colonies received the heritage from the English Crown. In fact, within twelve years of the founding of Jamestown, ten thousand acres of land were set aside in an abortive attempt to establish a university [10, pp. 2–4]. As states replaced colonies, they continued the practice of giving

land grants for higher education, with Harvard, Yale, William and Mary, Dartmouth, and Michigan all the beneficiaries of either colonial or state gifts. Meanwhile, the vast western lands were ceded to the new national government, and because of abundant land riches, it became the chief donor. No reader need be reminded that grants in lieu of appropriations were given for great internal improvements and that the Northwest Ordinance of 1787 led to the practice of giving to each newly admitted state (unless carved out of the original thirteen) two entire townships for a “seminary of learning.” What may not be remembered is that by the Civil War, and hence two years before the Morrill Act, no less than seventeen states had received two townships each, or a total of more than 4 million acres, and had spawned almost a score of state colleges and universities [39, p. 44; 1, p. 25]. Indeed many of these institutions of pre-Morrill land-grant origin were the trunk onto which the *new* land-grant shoot was grafted, always with revitalizing and sometimes life-preserving consequences.

Therefore, it is clear that the land-granting technique had become so pervasive before 1862 that turning to the federal government for educational help, instead of to the states, had become a dominant fashion. As an alert representative and senator, Justin Morrill had only to heed his eyes and ears to become the author of the famous act that bears his name, without awaiting a blinding vision that would make him “The First,” as he sometimes implied in old age and as myth-makers came to believe. Insight on the times is also shown by President Lincoln’s role and attitude. He did not turn a hand for the plans of Morrill, Jonathan Baldwin Turner, Horace Greeley, and all the others. He endorsed but did not promote; he signed the act but made no recorded comment. As a product of his time and place, with his free-soil ideas, he was said to have favored land grants “for all purposes and under any available condition” [43, p. 56].

If land grants were not new as a device for educational support, neither were they resorted to for purely educational reasons. Education was often the legitimizing factor, while the real objective was something else, perhaps pioneer settlement, speculation, or economic development. Citizens in Minnesota objected to having pine and farm lands chosen for universities because there were “higher” uses possible [18, p. 56]. Likewise, the unseemly emphasis on land as mere largess produced such interinstitutional scrambles among both public and private colleges that they were variously dubbed “Ohio’s great land-grant sweepstakes” and Virginia’s “War of the Colleges” [26, p. 51; 25, p. 21].

None of this is to deny Senator Morrill's great contribution, but rather to point it in another direction. Instead of siring the land-grant idea, even for colleges, he put together a timely political alliance that used the tried and true support mechanism for something new in higher education, certainly new in emphasis, and often new even in the kind of institution elicited. He helped establish a national policy, permissive though it was, which offered irresistible incentive to all the states at one time, old and new, to join a country-wide system of state-based institutions that had the potential we know only today. That *was* something new.

### *Student Demand*

Another facile misconception is that the land-grant colleges were born of student demand. "People's colleges" must have had a popular base, and when established, they must have had a popular response. On the contrary, a case could be made that the new colleges were created by reformers, not practitioners, and for an ideal, not for an established need. Reaching out to sons, and later daughters, of farmers and artisans, to indigent students, and to whomever the existing system passed by was a noble egalitarian ideal that remained just that—an ideal—for decades, with laborious progress toward its realization. Dormancy or decline in enrollments had actually set in, with surprising results in the new colleges [46, p. 486; 13, pp. 66–68]. When Ohio's land-grant college opened, its public predecessor, Miami University, was forced to close its collegiate department for want of enrollment, to resume only a dozen years later [26, pp. 54, 56].

One understandable obstacle was the inadequacy of the educational underpinnings: the land-driven reform outran the public school system. This extension of education from the top down, hastily induced by land grants, caused some sparsely settled western states to open the new colleges when few, if any, high schools existed. Arizona opened with none and Nevada with two [31, p. 38; 11, p. 52]. Other states were not too different. The University of Wisconsin was itself called "a High School for the village of Madison"; Pennsylvania State University, which began as "Farmers' High School," despite its collegiate intentions, met the student shortfall through preparatory work reaching down to the common-school level [38, p. 140; 12, pp. 21, 42]. In fact, preparatory departments became established collegiate features, and their enrollments were often merged into total student figures to assuage public hostility. When the president of the University of Arkan-

sas boasted of the fourth largest enrollment in the nation during 1879–80, he counted 300 preparatory students in his total of 450 [42, p. 122]. Not until this nationwide problem was ameliorated did the new colleges have the student “demand” for which they were built.

The test is in their success in reaching the number and kinds of students intended. The best called for apology; the worst was appalling. In New Hampshire literally no new registrant showed up for the fall opening in 1877 [56, p. 58]. Missouri had the same experience during the first week of the opening term in 1866, although 40 did appear later [41, p. 25]. Pennsylvania’s opening “capacity attendance” had dropped to 22 in 1869 and then took almost thirty years to reach 150 [12, pp. 25, 67, 135–36]. Massachusetts had drastic ups and downs, with twenty years required to get the enrollment back to the modest 1870 level [7, p. 63]. Neighboring Connecticut opened in 1881 with twelve “on the ground or on the way” [53, p. 144]. In its first twenty years, Nevada never exceeded 35 [11, pp. 33]. A decade after the Civil War, no less than five institutions in Baltimore had “an enrollment at least double that of the little farmer’s College” (University of Maryland), which in eight post-war years had five presidents under whom six students actually were graduated [4, p. 174]. Florida’s college had a particularly difficult time: the 38 who began in 1884 were all in the preparatory department, and only 57 were in collegiate classes as late as 1898 [37, p. 278].

Some colleges did better, indeed well by national comparisons of the time, but the best had monumental troubles. Aided by an ideal combination of beginning assets and by advertising in three hundred newspapers, Cornell got off to the best beginning with the largest entering class ever admitted in the United States—412, or twice the lodging space. But after a quick ascent to a total of 600, all classes sank back to only 312 in 1882 [22, p. 184]. Minnesota and California likewise experienced huge declines after early enrollment gains, although the latter again took off to 500 by 1883 and four times that number by 1898 [18, pp. 47, 68; 52, pp. 93, 115; 16, p. 374]. Illinois did not attract the “hundreds” its head expected, but it began with about 50 (76 by the year’s end) and moved rapidly in four years to 400 [51, pp. 99, 105]. Because of special fervor specially concentrated, the separated “agricultural and mechanical arts colleges,” distinct from the state university in the same state, had some special drawing power—again, often without maintenance of the auspicious beginnings. Although Kansas State never reached 125 in any of its first ten years, it progressed with remarkable steadiness to 500 in the 1878–90 period [58, pp. 22, 79]. Michigan Agricultural College enjoyed “overcrowding” for only two

years, and although enrollment was parlayed into a respectable 340 in the 1880s, that was far short of the intended 500; the following decade the board was looking into “the seeming lack of popularity of our College” [27, pp. 23, 187, 188].

That there was no groundswell of student demand is shown by the many stratagems used to build enrollment. Necessity bred invention. The new college in North Carolina offered a month’s free board to any student who would bring in another [29, p. 64]. Missouri relied on double-sized catalogs, five thousand circulars, and faculty forays into the country to “sell” the university [54, p. 300]. Scholarships with all degrees of financial support and equitability of selection were universally used, and, not uncommonly, available awards outran the total number of students. Only one-third of the Arkansas potential was taken up in 1873 [42, p. 74]; and before 1880, New Hampshire’s enrollment never exceeded thirty-three, although thirty-four scholarships were available for in-state students [56, p. 10; 48, pp. 8, 12]. In the impoverished economy of the Reconstruction, Louisiana State did attract students by the “charity” system of full-support “beneficiaries,” but, reciprocally, enrollment dropped to thirty-one when politics terminated the arrangement [17, pp. 204, 221]. Some students were made automatic recipients of enrollment inducements, such as ministers, ministry students, and maimed Confederate soldiers in Georgia [23, p. 98]. Where land-grant funds were originally entrusted in New England to existing private universities, it was common to devote a share of the proceeds (half at Dartmouth) to dragooning the necessary students under state auspices [56, p. 10].

The student yield from all this frenetic effort shows that the ideal of an open sesame for neglected students was tardy in its realization. In their avowed and ready egalitarianism, the land-grant colleges differed from the traditional, but student demand was anemic everywhere, yielding the nation’s topmost enrollment of 637 at Harvard in 1872, not much more than half that at Princeton, 124 at Columbia, and 88 at the University of Pennsylvania [32, p. 109]. Nothing did more *eventually* for mass or democratized education, but the land-grant colleges did little initially. It took them thirty years, or fifty, depending on one’s standard for earning entitlement to what we now honor. They were committed, they opened their doors, and they pressed fate with action. Their early contribution was the ardent conviction and the provision of opportunity, the expectation, and the ideal, not the actual achievement. They were ahead of their times, not the slaves of popular demand. When the ideal did blossom, it did so magnificently, and these

new institutions were often pacesetters. Within two decades of the general take-off in both enrollment and state support, Edwin Slosson was to include Wisconsin, California, Illinois, Minnesota, and Cornell among the fourteen in his *Great American Universities* [50]. As one historian was to say, “Higher education for the masses . . . really dates from the early years of the Twentieth Century”—the tardy fruition of an early ideal [36, p. 1].

### *National Development Role*

A third major misconception attributes to the new land-grant colleges the role of supreme force in national development after the Civil War—the prime mover in the American agricultural and industrial revolutions that became the envy of the world. If the colleges ever had that capacity, it was much later, certainly after the Hatch Act of 1887 with its emphasis on research, and probably not until well into the twentieth century. The colleges’ *own* development had to precede their impact on national development. That is an oversight often found among admirers in the developing countries who are looking for importable, ready-made, time-defying instruments of progress.

Since agriculture was a “leading object,” the greatest impact would presumably have been on the so-called “agricultural revolution.” However, the status of agricultural education was indeed low, and the trained manpower produced was generally not distinguishable from that of other educational institutions. Agricultural colleges had birth pangs that have left us lurid descriptions: “a bundle of whimsies,” an “undernourished abortion,” “mere symbolic patches of hay or grass,” and “an Agricultural College without Agriculture in it” [28, pp. 234, 253; 35, p. 62; 32, p. 124]. Agriculture played little part in the institutional evolution in West Virginia, Louisiana, and Nevada, and a difficult role even in some of the strongest farm states. Minnesota’s trustees condoned growth within the cracks, in pieces, and against odds, with resulting “hostility between university and farm community that was to plague the administration for fifty years” [18, p. 33]. Students of that discipline never exceeded three a year and then relapsed to zero in 1880. In 1874 there were no agriculture students at Wisconsin, California, Minnesota, or Missouri—all established prior to the Morrill Act, all farm states, and all committed to doing something special for agriculture. In fact, Wisconsin graduated no agriculture student until 1878, with many years before the next. Thirty years after President Lathrop had begun urging agricultural education, one student was pursuing



that field in contrast to sixty in law [9, pp. 463–64]. Where brand new institutions were founded under the Morrill Act, particularly if they were separated from the state university, agriculture generally fared better; and in some places it was clearly dominant. In Michigan, Pennsylvania, Mississippi, Massachusetts, and Kansas, agriculture was the driving force in the founding or in early emphasis, or both. In the northeastern states, where the land-grant funds (except in Maine and Massachusetts) were given to existing private universities, even if to a scientific college therein, agriculture was clearly a stepchild. But in all states, the unpromising state of agriculture as a profession or science was a serious obstacle. Professors of agriculture could not be found because the subject did not yet exist. It could be taught only in the guise of something else—botany, chemistry, or physiology. One president said it was “simply a mass of empiricism” [34, p. 57].

For potential application to national development, what kind of trained manpower did the land-grant colleges produce? The best agriculture showing by far was made at Michigan Agricultural College. By 1892, it had produced six hundred agricultural graduates, one-fifth of the national figure and exceeding the total for twenty-five other states, while other Midwestern colleges were averaging from ten to twenty-four each [27, p. 171]. Ohio State was very different; only two out of ninety-three graduates from 1870 to 1886 were in agriculture, whereas twenty-seven received engineering degrees, twenty-seven bachelors of science, and thirty-seven bachelors of arts and philosophy [26, p. 131]. Maine had only thirty-four in agriculture and allied industries out of 348 living alumni in 1892, or 10 percent as compared with 41 percent in engineering; also the professions, business, and editorial/literary work compared favorably with agriculture [15, p. 93]. Purdue University in Indiana averaged one graduate in agriculture a year until 1893, only one-sixth as many as in civil and mechanical engineering [21, p. 191]. The Wisconsin Board of Visitors in 1880 lamented “finding no students in and learning of no graduates from the agriculture department” [9, p. 465]. In the heart of the farm belt, Illinois had no enrollment in agriculture/horticulture in 1890, and its new college almost expired before being revitalized by the Hatch and Second Morrill Acts [51, pp. 239–41]. The Rutgers Science School turned out ninety-nine graduates in fifteen years, six of whom were in farming [32, p. 92]. Of seventy graduates at Maryland between 1865 and 1892, two were farmers and six engineers [4, p. 198]. At the nadir, it took Arkansas thirty years to produce the first bachelor of science in agriculture, and Nevada did little better [19, p. 37; 8, p. 16].

It must be concluded, therefore, that the manpower training done by these new colleges turned out to be, both by student choice while in college and by employment choices after graduation, much more conventional than expected—it was chiefly for liberal education and for the common professions. Even in the exceptions found in institutions that deliberately restricted their curricula to a narrow interpretation of the Morrill Act, the “related” fields often did better than the explicit specialties.

No reputable history of American agriculture or of industry bears out the assumption that the new-type colleges virtually created modern America on the material side by their applications of knowledge to agriculture and industry. The ideal of development was always held by the land-grant colleges and their most evangelistic spokesmen, but the realization had to await both the generation of knowledge to apply and the development of staff to share. The volumes of *Agricultural History* contain several articles about the nineteenth century “agricultural revolution” but none assigns a significant role to the new land-grant colleges. These articles show that significant change was already evident by 1850, the century’s greatest increase in agricultural productivity per worker occurred between 1860 and 1870, and a host of nonagricultural factors were at work [6, p. 121; 49, pp. 161–62; 40, pp. 193–95]. Likewise, American economic histories give more attention to natural conditions, inventions, canals, railroads, market developments, urbanization, and land policies than to land-grant education, which gets surprisingly little attention, and sometimes none at all [5, p. 101; 2, p. 452].

Before 1890, the developmental contributions of the land-grant colleges were fortuitous and indirect. They were a boon to frontier settlement and an important ingredient in the frenzy of “internal improvements” in many states. Many were ploys in the legislative maneuvering for scattering internal improvements around the state, with “equitable” distribution of college, capitol, penitentiary, insane asylum, and normal school. They gave powerful impetus to an improved and balanced school system, uplifting high schools particularly. Most potent of all was their relevance for and attachment to a particular geographical place: they served what their place names generally implied and designated. It was no accident that Kansas State scientifically demonstrated that winter wheat, among many other crops, was an answer to a harsh environment and that Florida Agricultural College experimented with semitropical fruits and vegetables [24, p. 289; 37, pp. 204, 346].

This points to the missing link. It was the absence of tested principles

and verifiable knowledge that came from research. Before 1890 the colleges did not have that capacity, or more than a minuscule amount, and the concomitant capacity for systematic diffusion lagged still further. To contend otherwise is to perpetuate a myth that impedes our understanding of the developmental process and education's role in it. The direct developmental impact of the early colleges came after the agricultural experiment stations were established, after research knowledge was given an extension mechanism, after the engineering schools were equipped and well patronized for both training and applied research, and after enrollments in the practicing professions generated thousands, not merely scores, of leaders and specialists. It was a long road from the early unrealized ideal to the contemporary interlocking of development and education. The early colleges were within the system, not outside or above it. They were in some respects the product, not the cause. That may tell us more about national development and the university role in it, both past and present, both in the United States and overseas, than anything else.

### *State Support and Control*

A fourth misunderstanding about early land-grant colleges assumes that between the federal role and state role, the latter was dominant and determining. Why else "state" universities? It is easy to infer now that the states eagerly stepped up to the federal challenge, embraced and discharged their constitutional responsibility for education, and perforce put their tax dollars behind an accepted public remedy for the deficiencies of the traditional private colleges. That is not what happened. Starting a college did not mean supporting it, and supporting a college did not mean controlling it. Support and control both had to evolve. As the giving of land grants by the federal government was a substitute for money, so the acceptance of land grants by the states was a substitute for taxes. In fact, full college adoption and reasoned tax support by the state was a phenomenon of the early twentieth century [44, p. 184].

The federal role has been neglected and underestimated. Federal land did more than entrap the states into sometimes unwanted responsibilities; its proceeds were the lifeblood in the early decades or even the sole support. The Morrill Act made a tremendous impact. Eventually every state accepted its terms. By standards of that day, not of the present, it provided a "munificent grant," "a very handsome endowment," "a permanent fund," and "a bounty of the national government" [41, p. 23; 26, p. 21; 23, p. 12; 15, p. 361]. Indeed 17.5 million

acres was a handsome bounty nationwide, even if the income did fall below expectations. That bounty was “the salvation of the University of Georgia,” it “helped the Maryland Agricultural College struggle to its feet,” it aided Iowa Agricultural and Mechanical Arts College “in its desperate struggle for perpetuation,” and in New Jersey “the foundations were laid for the new Rutgers” [23, p. 85; 4, p. 164; 45, p. 34; 32, p. 82].

For both politicians and educators in many states, the federal land grants had another strong appeal, but of a negative kind: they were an escape from state responsibility and taxation. Bad times caused some states to propose to “sell” the new college or repeal its charter as a tax-relief measure [45, p. 33; 27, p. 49]. More moderate politicians accepted the new-type college as frugal and easy on the public purse [30, p. 11; 45, p. 74]. Much legislative effort went into the search for some self-sustaining formula for the new colleges—tuition charges, sale of produce from the college farm, piggy-backing on existing institutions, and aid from the highest bidder for the college location. Counties and cities were encouraged to compete with proffered cash, loans, buildings, or whatever other attractions human ingenuity could devise. The bids made and the deals struck were awe-inspiring—and tax-saving. Arkansas endured paroxysms of salary-cutting, legislated faculty terminations with some rehiring at lower pay, library deprivations, and appropriations in warrants with value dropping as low as 30 percent [19, pp. 35–39, 55]. Wealthy creditors or benefactors also gave saving aid: for example, John Pillsbury in Minnesota and John Purdue in Indiana [18, pp. 25–31; 21, p. 32]. Citizens of Lincoln were persuaded to advance money to keep Nebraska’s main building from falling down, with the expectation of legislative repayment, but the confidence proved to be misplaced [30, p. 64]. Most of the New England states hoped to avoid start-up costs, even for buildings, by assigning the land-grant funds to existing private institutions.

Thus regarding the land grants as a federal replacement of their responsibility, the states devoted many years to evasion, temporizing, renegeing, and borrowing against what was neither matched nor supplemented. Even a quarter century after his famous legislation Senator Morrill complained that his own state of Vermont was not doing its part by relying on federal proceeds solely, while Vermont’s president lamented that the state had “not helped by one acre or one cent” [28, pp. 223, 236].

Having tried loans, other indebtedness, fees, and nominal salaries, Missouri reached its watershed of state support almost thirty years

after its founding with legislative hands forced by the conditions set by the incoming president [57, p. 113]. Until settled as damages through the courts and a special commission, Yale received “not a dollar” from the state while it administered Connecticut’s land grant [53, p. 72]. Some states, like Wisconsin, entrapped themselves into a precedent for annual appropriations by having to repay easy loans taken from the federal endowment [9, p. 127]. After having waited eleven years to open the doors of the college that the Morrill Act contemplated, Ohio took eighteen more to provide a direct state levy [36, p. 1]. Worse still, it took New Jersey thirty years [32, p. 93]. The “neglected stepchild” was the dominant country-wide image left by the states’ relations with the early land-grant colleges [12, p. 111; 17, p. 304; 11, p. 22; 58, pp. 30, 35–36].

It must be concluded, therefore, that the original federal land grants were not effective in priming the state pump. The states, with few exceptions, did what they had to, minimally (i.e., erected buildings that were denied the use of federal income), thus avoiding annual outlays; but an increasingly self-conscious democratic spirit gradually came to the colleges’ rescue, along with agitation and reminders from the colleges and their leaders. Some crisis or emergency or appeal to fair play usually led to an appropriation for some operational purpose, and what had thus begun could then be repeated. The spasmodic gradually became habitual. Two new extensions of federal assistance, the Hatch Act of 1887 and the Second Morrill Act of 1890 (the latter, with its money rather than land for a “more complete endowment”), pulled the colleges over the financial hump and gave the states their final reprieve while adjusting to the inescapable. A new era dawned. The take-off point had been reached in state assumption of the major role in public higher education.

State control developed more or less in tandem with state support, replacing the early practice of state chartering with essentially private control through self-perpetuating boards of trustees. This evolution, beyond the space available here, gives still more evidence that state support and state control were public tastes that had to be acquired. Whether entrapped or not by accepting the Morrill Act’s conditions, all states eventually conceded, however reluctantly and tardily, that state patronage should follow, that the new institution was a child of the state, and that the full faith and credit of the state were involved; but “eventually” was the key. Torn between emerging democracy and established tax resistance, the states needed time. They took it.

In addition to these major misconceptions, two significant historical

developments have been omitted or grossly underestimated. One is the obverse of the state role discussed above: the neglected significance of the *national* system of state-based colleges and the national role in the formative years. The other is the great contribution of the incremental state-by-state educational upgrading that these humble colleges left in their wake enroute to becoming strong universities.

### *Neglected National Role*

Nowadays, when the states and localities have come to be the educational bulwarks and the Congress has gone to such lengths to deny national responsibility, it is difficult to reconstruct from an earlier era the national role and its determining impact on educational reform. Born of the wartime nationalizing spirit, the Morrill Act was a masterpiece of nondirective federal aid. It was clear enough to guarantee a state-initiated college in every state but vague enough to let the college accommodate to local reality. It wanted agriculture and mechanic arts—the neglected concerns of neglected students—targeted for attention, but it did not exclude anything, however conventional. Yet the national intent showed through: a new emphasis, a new clientele, a permanent endowment, and an expected state commitment to fit into the loosely drawn national network against the alternative of refunding the income. Using their options freely, the states created all kinds of institutions, some maximizing the “leading object” of the Morrill Act and some minimizing it. It is significant that Senator Morrill himself emphasized the national purpose and role and later sought to enhance the endowment of what he called the “national colleges for the advancement of scientific and industrial education”—both “national” and, for greater breadth, “scientific” instead of “agricultural.” He perceived a national educational obligation that was not to “be avoided by the cranky plea that Government has nothing to do with education” [33, pp. 3, 7, 13].

Ample evidence shows that the new colleges were regarded by their advocates and founders as a national system or network, and were so developed. The enabling act itself gave an unmistakable clue: a little-noted section provided that an annual informational report should be made by each college to every other college and to the Secretary of the Interior—that is, to others, thus serving the country-wide system, and to a national educational office, thus symbolizing the intended scope. The colleges, in parallel development with the U.S. Department of Agriculture, became the linchpin in the national “system” concept in agricultural education, research, and extension that has won world

acclaim. That concept gained further cohesion by a groundswell of sentiment that culminated in the formation of the Association of American Agricultural Colleges and Experiment Stations in 1887, which brought the pieces together in both fellowship and professional advancement. With subsequent name changes, that organization promoted a host of interinstitutional objectives country-wide and lobbied vigorously for common national interests with a potency that has long been noted by academic and governmental onlookers. An informal system or network existed, too. Nationwide correspondence and meetings provided the original impetus for the colleges, for the association, and for closer relations with U.S. government officials. College officials visited other places for ideas, plans, curricula, and faculty and presidential recruitment. Arkansas built its Old Main directly from the Illinois plans [42, p. 103]. Colorado Agricultural College was slavishly patterned after the Michigan Agricultural College and Michigan law [20, p. 25]. Clearly, the national system was also a network of common philosophy and sentiment.

There were other evidences of a national system. A curricular core was imposed nationwide—agricultural and mechanic arts education and military training, whatever the fate of classical education might be. The wartime imposition of military training best symbolized the national aspects again. There was something common beyond the required core, too: the ready-to-develop ideals that would cater to the “industrial classes” and practical professions, assure the centrality of science (since it was the base for the “leading objects”), and use both experimentation and service as the cement for mutual relations with the states in which located. If one interpretation of American educational evolution after the Civil War held that there is no “great central idea” but at bottom something “formless, chaotic, and full of contradictions,” as historian S. Willis Rudy has written [47, p. 156], it could accurately be said that the new colleges came closer to a “great central idea” than any others. They also had a keen and proud awareness of what they did hold in common across the nation.

Finally, it should be noted again that the national influence took tangible form, as previously noted, in the dominant financing of the early land-grant colleges. While the state fraction of the total support steadily mounted, after a tardy start, the national dominance was not overcome until the turn of the century. At that time, the catalogs for Rhode Island still boasted that all salaries were paid wholly from federal funds, and the University of Nevada still derived approximately three-fourths of its support from the “liberal aid” of the national gov-

ernment [14, p. 83; 8, p. 11]. A 1903 report showed that land-grant proceeds, then including federal appropriations under the 1890 Morrill Act, came to just under \$2 million, whereas the states appropriated slightly less than \$2.5 million for operating purposes [55, p. 11].

However, time shifted the balance against too much “nationalizing” as the Civil War receded. Senator Morrill, overtaken by political realities, eventually dropped “national” from his legislative proposals for further aid to his colleges and contented himself with the national effect from a network of state-based, federally aided institutions. While the balance thus shifted and the state role became much stronger, the national role left indelible marks. These and their history should not be forgotten nor minimized. Some such national impetus could alone have produced such a nationwide crop of colleges in so short a time. The country-wide impact on incipient institutions, on states relating thereto, and on national opportunities and rewards coming therefrom is the enduring heritage.

### *Incremental Improvement*

The other neglected feature of the early land-grant colleges was their pragmatic, step-by-step progress, internally driven rather than externally inspired, toward better education in all the states. As a foreign observer, Lord Bryce was more prophetic than critical when, in *The American Commonwealth*, he cited the burgeoning state universities as often “true universities rather in aspiration than in fact” but still “better than nothing” [3, vol. 2, p. 681]. If they had awaited the evolution of high schools and despaired of standards below Harvard and Oxford, higher education in the United States would have been long delayed and immeasurably impoverished. Instead, the hope of incremental educational salvation sprang eternal in the new colleges. In state after state they were not much, but better than nothing—and often better in the newer states than any alternative.

While the new colleges, like most of the older ones, were running preparatory departments to undergird some pretense of university work, they were also locked into the upgrading processes whereby public school systems came into being. As soon as possible, they cut the Gordian knot of how to elicit acceptable high schools while providing a substitute. Many of the college presidents assiduously worked to make the college the leader, teacher-supplier, and upward-pulling magnet of the whole educational system of the state and found careers wending in and out of the upper layers of the emerging public school systems and their normal schools. Nebraska’s chancellor said to a state teachers’



convention: "I see the common school stuck in the mud and the university suspended in the air. If we are to have a system of education, the word is 'Close up' " [30, p. 90].

The modest incremental road to higher standards was clearly envisioned by President Chadbourne of Wisconsin, who said that instead of telling students what they ought to do, "We must take them as they are and do the best we can with them" [9, p. 230]. Others, like President Minor of Virginia Agricultural and Mechanical College, agreed that the problem was to encourage students "to seek the honour of a diploma not placed so high as to be beyond their reach" [25, p. 96]. The author of Nebraska's charter said his "prime objective was to get the institution at work as early as possible with as high a grade as the finances would permit, and then improve upon the general foundation as experience warranted or indicated modification" [30, p. 15]. No statement could better portray the prevailing pragmatic incrementalism—to get to work as soon as possible, to reach as high a grade as could be afforded, and to improve by experience. That ever-upward ideal was the constant and crucial factor.

As the new colleges ratcheted forward, step-by-step, opportunity by opportunity, not only was the public school system perfected, but the collegiate work was spread into a broader curriculum; professional schools and liberal arts education were given new balance; research and nonbook learning were embraced; the material instruments of learning (buildings, libraries, laboratories) burgeoned; only the "best" faculty became "good enough"; alumni successes proved that trained intelligence was a dormant resource in every state; intercollegiate rivalry and emulation nationwide added an upward impetus—until each state had a full-fledged comprehensive university (or the components shared in two, if a separate state university already existed). That was inherent in the statutory amplitude and in the linkage with public educational aspirations and the slow-but-eventually-sure public capacity for support.

This spreading around of the educational good, this doing what could be done toward an unswerving ideal, was a monumental achievement of the initial national policy and subsequent state support that flowed from the Morrill Act of 1862. Attempts to clear up misconceptions and to understand what has been neglected in our perception of the early land-grant colleges does not detract from the overall achievements, but, rather, confirms them from another perspective. When only a glimmer of the future had yet become apparent, the committee on education of the House of Representatives reported in 1890

that the land-grant colleges “have turned out a body of men who, as teachers, investigators, and leaders of industry, rank well up with the same class of men everywhere in the world,” while at the same time bringing the older institutions “more closely into harmony with the spirit and purpose of the age” [58, p. 89]. This was only a modest forerunner of what was still ahead for the step-by-step incrementalism that was to change the face of American higher education. The historical adaptation of the “new education” has been remarkable. It has left something different and enduring—and something that is no longer confined to institutions called “land grant.”

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