

**The Land-Grant Idea
at Iowa State College**

Introduction

THE HISTORY of the Land-Grant institutions in the United States," says the *Survey* of 1930, "is the story of the growth of an idea — an idea centered in the democratization of higher learning." Just so. However, the story is long and involved and has never been fully unfolded. Assuredly no system of higher education has had more appraisals and evaluations. Commencement addresses, inaugural ceremonies, founders' day orations, dedications of buildings — especially the Morrill halls — and anniversary symposia have all paid their tributes. More than seventy presidential addresses before the Association of Land-Grant Colleges — often in semi-reminiscent vein — have dealt with some aspect or facet of the system. All of the institutions have chronicled in some form or other their response to the idea. But with rare exceptions these expositions have been descriptive and laudatory rather than analytical and critical.

In contrast the system has been subjected to harsh depreciatory assaults, mainly from educational foundations and humanistic Brahmins.

In both appreciation and detraction there has generally been a lack of definite understanding of the main elements in the impelling and motivating idea which gives distinction to this type of higher education. Much spade work remains to be done in the history of the movement — particularly of origins. And as always in controverted issues, motives and influences are not subject to exact determination. But it would appear that the cardinal principles in the idea as it was formulated and as it has grown and developed in action may be indicated with essential accuracy and realism.

Legally and ideologically, the organic act of 1862, as it has been interpreted and supplemented to meet changing conditions, provides the most authoritative and revealing statement. The so-called Morrill Act was the culmination of the evolving idea to that stage and the point of departure for the “new education” of the new industrialized nation. In this body of principles, written and unwritten, we have then the *magna charta* of this type of higher education — the standard for judging compliances and progression of the movement in general as well as of particular institutions.

First and foremost, the act committed the expanding and consolidating nation to mass higher education. Historically the provision marked the extension of the public elementary and secondary school systems to the collegiate realm. It thus brought the nearest approach to Jefferson’s educational pyramid in the state realm, but with much broader apex than he had visioned. The conforming state universities, dominated largely by the old traditions in aim

and subject matter, had never made such an appeal. Here indeed was "democracy's college" — in design and aspiration. The opportunity was clearly open to all aspiring young people who found existing institutions and courses of study unavailable or unacceptable.

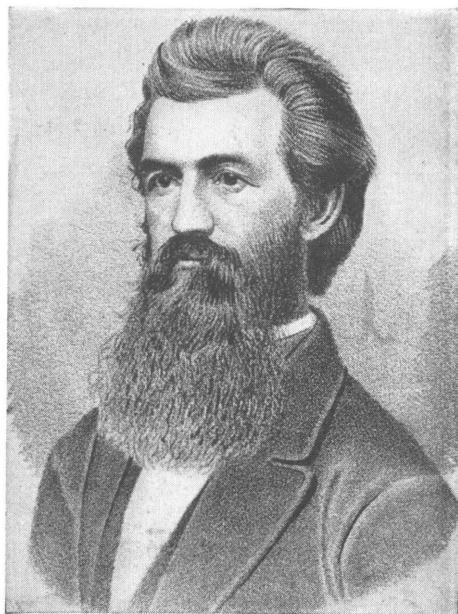
The initial grant provided public land or land scrip to each state on a basis directly correlated to the number of senators and representatives that each state had under the apportionment of 1860 for a specific aim. The proceeds from the sale of the land or scrip invested in United States or other safe stocks yielding at least 5% must constitute a permanent "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 mechanical 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 of life."

The term "industrial classes" was not only indefinite but also narrowly dated. Industrial and business changes going on at the time were making obsolete any classifications based upon an elemental unspecialized economy. The division of economic society into the industrial and professional classes by agitators like J. B. Turner was wholly meaningless, as indicated by Morrill's own realistic covering phrase, the "various pursuits and professions of life," which disregarded occupational distinctions. As it proved, a very substantial proportion of land-grant graduates were to find the education well adapted to professional careers including the "learned."

In keeping with the spirit and purpose of the act, which gave generalized statement to the main tenets of the industrial reformers, the new education disregarded all distinctions of race, creed, and sex. In the phrase of the foremost of the founding fathers of the Iowa College, Benjamin F. Gue, it was to be open to "any of God's people." To remove one possibility of inequality, racial discrimination was forbidden in the "second Morrill Act" of 1890. Furthermore, these public founts of learning were not to be a preserve for the specially gifted and superiorly attaining, but for all those to whom the training might be individually and socially justifiable as shown by the ability to meet prevailing standards of the public schools. This pragmatic venture in higher education thus replaced Jefferson's ideal of an aristocracy of higher learning with what alarmed humanists have termed with strained symbol "Jacksonian" education. This democratic spirit was evidenced in the surroundings, buildings, equipment, and living conditions of the early "agricultural colleges." In a day of prevailing academic simplicity, the new type colleges were especially elemental and primitive. Consequently, no ambitious youth need be kept from this higher learning by reason of indigent circumstances.

However, the financial advantage was by no means the most determining. The appeal to the neglected in aptitude was much greater than to those limited in means. Higher training for the educable masses required a type of learning that would induce increasing numbers to make the effort and sacrifice of acquiring it. The charge of "aristocratic" made by the vocational propagandists against the typical old-time college was a fanciful caricature. Rather than being available chiefly to the privileged of birth and wealth, most of these colleges, especially in the Middle West, drew

Benjamin F. Gue was perhaps the outstanding guiding influence on the College during its formative years.



their students mainly from farm and small business homes. There were few idle rich in the middle period and the regimen before free electives and freer activities would have made the old-line college anything but a "country club." Poor boys who aspired to this cultural discipline found little difficulty in earning their way by off-term teaching and off-hour labor.

Enrollments were kept low, not by financial or social restrictions but instead by a narrow subject matter — usually presented in highly formal manner — that wholly failed to connect with the dynamic passing scene. The old classicism seemed to have nothing viable to contribute to an era of transformation in production, distribution, and communication, with all the attending social changes.

The collegiate quadrennium was still further discredited by the cult of the self-made, then at its height. Striking examples appeared on every hand and in all lines of en-

deavor. The majority of the shining lights of bar and press and spellbinding political oratory had very sketchy formal training. For a business career, the knowledge of books beyond the practical rudiments was regarded as wholly irrelevant — as witness the typical captains of industry and commodores of trade.

For the aspiring technologist, the average college with its rudimentary science and crude equipment could offer little of usable application. As Francis Wayland sardonically bemoaned to his board at Brown in 1850: "Our colleges are not filled, because we do not furnish the education desired by the people . . . We have produced an article for which the demand is diminishing. We sell it at less than cost, and the deficiency is made up by charity. We give it away; and still the demand diminishes."

► TECHNICAL AND GENERAL

In direct contrast, the new departure under land-grant stimulus sought to bring education *en rapport* with life, its business, society, and politics — a daring endeavor in a time of transition and disruption. To do this, technical training was to be combined with general, both on a "liberal" basis.

The type of education proposed thus did not involve a narrowing but a broadening of content, not a taking away but an adding to subject matter, with the appropriate methodology. General education — the sciences and humanities — was given accepted recognition; the applied sciences, as then existing, were accorded a preferred emphasis to insure that they were included.

At the same time collegiate status on a liberal basis was a safeguard against a narrow vocationalism. The terms "pursuits and professions of life" opened the colleges to

all existing and future areas of training that were found to be appropriate. Nothing of social utility or significance was to be academically common or unclean.

In expounding the "function of the land-grant college" to the division of superintendence of the N.E.A., in 1900, President William M. Beardshear of the Iowa State College stated the matter in succinct phrase which it took Morrill several pages of the Congressional Record to say: "The theory is that a young agriculturist or industrialist must aspire to a liberal education that will make him the peer of any educated or professional man in life."

The movement gave standing to the sciences and their applications. At the same time it made definite contributions, especially in training for citizenship, to the modern enrichment and balanced functioning of the humanities.

The practical vocational objective that the narrow-visioned reformers held to tenaciously would have reduced the federal-state colleges to mere trade schools — their misguided conception of "industrial education." But on the other hand, the designation "agricultural colleges" — made inadvertently by a copying clerk — was entirely contrary to the design of the supporters of the act and encouraged a misleading emphasis. Attempts to give more expressive designations to the colleges were strongly resisted by farmer legislatures. In a number of cases the misnomer was an influence in delaying the developments contemplated in the organic act as well as those of the widening concepts of the industrial age.

Typical of the apostate, land-grant educators with background of classical training were sometimes the most uncompromising supporters of the narrower interpretation.

This inclusive system of higher education and research,

as it was to develop, initiated policies of federal and state relations that were to extend to wide areas of economic and social interests. The act was the educational share in a great series of economic and social enactments of the period which pointed the way to later relations of government with business and society.

In view of the land endowments of colleges from colonial days and of the earlier federal grants for education at all levels, the term "land-grant" might seem not especially distinctive. But this system of grants was differentiated by being given to all the states on a population basis, and in imposing certain obligations. Unlike earlier land subsidies, this one was not just a handout for general areas of education to be developed as the particular state saw fit, but instead was for the permanent endowment of a special type of institution to be established by the states.

While the resulting institutions have been designated as "state," they are no less national. In the early years the products of the Morrill Act were termed "National Schools of Science." The grant was determining in the founding of the colleges as a special type, and the main source of operational support in the formative years, before full state responsibility was recognized. Supplemental aid to the expanding program has been opportune, and experimental and extension work has been stimulated and standardized by special grants. In later years the bulk of support has come from the state appropriations, but the national contacts, in mutual benefits and services, have become more intimate and determining upon policies, especially upon standards of research and the dissemination of the findings.

Interrelated with the privileges and opportunities of mass education have always been obligations and responsibilities for the general welfare. "Training for citizenship"

has been a major objective throughout, according to the varied conceptions of what this should involve but with an increasingly realistic and rational presentation and emphasis. To be sure, all American education purports to be doing it and the phrase has been bandied about from softboiled emotionalists to hardboiled reactionaries until at times it seems a meaningless cliché. But in institutions with a student body affording so representative a cross section of the national citizenry and with definite vocational objectives well above the average, it is a considered expectation that the possibilities of realizing this aim of the founders should be promising. Perhaps the most significant contribution to this aim which the teaching and research may provide is a leadership in agriculture and industry of courageous vision supported by enlightened followers. At the same time technical experts in all areas should find congenial service in all levels of the public service.

By reason of the crisis in national security in the 1860's, the special military provision inserted in the bill as finally passed has made the colleges essential agencies of national defense. At the same time it has afforded the basic training for careers in all branches of the services.

► STATE-FEDERAL COOPERATION

Federal relations with states have become more intimate in checking conformity with the provisions of the original act. This has been especially true with added specifications in the supplemental grants and especially in those for special services involving grants-in-aid. Common interests have been promoted, standards determined, and unified contacts with government agencies made by the Association of Land-Grant Colleges and Universities.

These then are the underlying elements in the land-

grant idea: a system of federal-state training of the largest educable number, with the appropriate methods and cognate activities that such training involves, for economic competence, social adjustment, and direct public service.

The motto of Iowa State College, "science with practice," might comprehend the idea if "science" were given the full original meaning of *scientia*, and "practice" understood to embrace all of the appropriate applications.

► ENCOURAGED GROWTH

The generality of statement of the act, which has been compared to that of the Constitution, has facilitated growth and expansion by interpretation and usage. Both laws and usages have been given reinterpretation to provide for changing conditions and conceptions. Thus racial equality as provided in the second act of 1890, in judicial decision has passed from the status of separate but equal to that of gradual integration. Experimental and graduate research was early recognized as essential for the rendering of expert service to agriculture, the industries, and society. The range of technical and general subjects has paralleled the extension and elaboration of both groups of curricula. The term "mechanic arts" has been interpreted to include all branches and sub-branches of engineering as they have emerged. Home economics has advanced from purely household applications to general recognition as a coordinate school. In meeting the responsibilities of serving regional interests, other important areas have developed to full standing, such as veterinary medicine, commerce, pharmacy, and industrial and labor relations. Divisions of general subjects—including the humanities—have been

voted in with all rights and prerogatives thereunto appertaining. In fact some of the most pronounced of the "practical" narrow-gauge institutions, in their humble youth, have complacently displayed some of the most elaborate humanistic programs.

In the early days, the lack of standard high schools or of other agencies for adequate preparation led the colleges to provide preparatory work which continued, in some cases, for a considerable period. Especially in mathematics and the sciences, this vital concern for basic training brought intimate relations with the public schools and, in the case of transfers, with the senior and junior colleges. With the coming of vocational education with federal-state aid and standardization, an important function was added in the training of specialized teachers and supervisors.

Although the full college status of the regular courses offered under the act has always been maintained (in theory if not always strictly in fact in some early ventures in industrial education), the fullest service to the constituency has seemed to justify and obligate the provision for instruction of "less than college grade" in terms of varying duration from a few days to two years. While in some cases these abbreviated and simplified programs have been feeders for the degree courses, the main objective was to widen the direct influence by getting elemental information to the actual users of it. This grade of on-campus teaching, except for certain special subjects, has been largely superseded by an organized advisory and informational service which goes out into the state to the producers on the job.

The various efforts through the years to bring the find-

ings of the classrooms, laboratories, and experiment stations direct to farm, factory, and utility have eventuated in the highly organized state-federal extension service. As it has actually operated under varied regional conditions, this institution has provided the most influential agency of adult education.

Again like the Constitution, the organic act, with its big idea, was not struck off at a given time from the brain and purpose of any single man or group of men. In both cases, relative success was due to reliance upon precedent and experience so far as available. Morrill was entirely correct, though not in the sense intended, in averring that where he obtained "the first hint of the measure" he was "unable to say." Agitations for this type of education had been going on about him for over two decades.

The pre-Morrill developments may properly be regarded as prologue, but it was a long and large prologue — going back at least to the eighteenth century scientists and educational reformers in Europe and America. From colonial days American scientists were in active correspondence with fellow workers abroad. Throughout the first half of the nineteenth century, American students were to be found at European and British research centers, working in their laboratories and experiment stations. As early as the 1820's geological and natural history surveys in most of the older states had provided employment and practical experience for the leading scientists. During the '40's and '50's the patent office had served as a stimulant and clearing house for new ideas in agriculture as well as in mechanics. A select few were reached by early agricultural journals and manuals; vastly more by the state and local societies functioning through their exhibitional fairs.

Yale, pioneering in science instruction early in the century, by the latter 1850's had organized a distinct science school that was making applications of its researches. The Lawrence school at Harvard was proceeding more deliberately, and science courses were having tentative trial in colleges like Amherst, Brown, and Union.

► SCIENCE PLAN

The most ambitious design of science instruction in the New World in this period was the projected graduate science university at Albany, New York. The plan was to bring together the leading scientists of the time not only in this country but from Europe — a pooling of talent comparable to Jefferson's ambition for his first faculty at the University of Virginia. Visionary and hopelessly premature as the scheme was, it was indicative of the aspiration of the time and was not without influence in stimulating the further effort at Yale and in hastening the modernizing of Columbia University.

Rensselaer Polytechnic Institute was the trail blazer and exemplar by many years — in subjects and methods — of technical institutions. Starting with the broad field that its title indicated, it came to center in a distinguished college of engineering. At the Military Academy, training was provided that could be applied in civil as well as military engineering. The Massachusetts and Worcester Institutes belong to the Civil War era.

Meanwhile agricultural education had been making small beginnings that were still in the blade. In the achieving 1850's long agitation brought the first college in a clearing in East Lansing, Michigan; a farmer's high school in Pennsylvania; a part state college in Maryland; and the

chartering of Iowa's agricultural venture in higher education. Throughout the middle period, proprietary schools of agriculture in the Northeast and the Old Northwest had opened and in most cases closed for lack of patronage.

The democratic aspirations of the industrial movement found models in the Fellenberg schools of Switzerland, the workingmen's colleges of England, the colonial log colleges, the mechanic's institutes and lyceums, the people's college movement, and the manual labor academies. Agitators for women's rights — encouraged by gains in the existing system — registered their claims for full equality in the new. Throughout the '40's and '50's, plans for technical colleges — especially agricultural colleges — to be subsidized by federal land grants were being presented to Congress. They found sponsors in the state societies, the United States Agricultural Society, and the agricultural press.

► GREAT STRIDES FORWARD

It was no accident that the period of the Morrill bills (1857–1862) synchronized with great national developments and events that were quite apart from the forces of contention that were testing national unity. The last frontier was being exploited, the petroleum industry was born, the first trans-Atlantic cable was tried, trade was extended in the Far East, the first chain and department stores appeared, the Bessemer process was developed. Modern capitalist and labor organizations were in the formative stage. The American news and periodical press was coming to characteristic form and function. National literature and art had attained confident expression. Of direct concern to education was the formation of a National Teachers Association and of distinguished educational journals.

Educators with a vision of the new age were in training or in some cases just appearing. Liberty Hyde Bailey, the great nestor of land-grant education, was born in a pioneer Michigan settlement while the first Morrill bill was being debated. That fall Theodore Roosevelt, who was to show promotive zeal for rural education (if not always clear understanding), started his eventful career in metropolitan surroundings. The next year, spotlighted by Darwin's culminating formulation, John Dewey — of blessed or un-blessed memory for all education, according to contrasting views — appeared amid a changing if not a fully progressive education.

The birth year of the Iowa State Agricultural College was truly one of destiny, in education as in all other aspects of the American scene.

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