The Land-Grant Idea at Iowa State College

Thirty-Seventh Congress of the United States of America:

At the Second Session,

begun and held at the city of Washington, on Monday, the Second day of December, one thousand eight hundred and sixty-one.

AN ACT

Donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be granted to the several States for the purposes hereinafter mentioned an amount of public land to be apportioned to each State a quantity equal to thirty thousand acres for each Senator and representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty: Provided, That no mineral lands shall be selected or purchased under the provisions of this act. Sec. 2 And be it further enacted, That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections, not less than one quarter of a section, and whenever there are public lands in a State, subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands within the limits of such State, and the Secretary of the Interior is hereby directed to issue to each of the states in which there is not the quantity of public lands subject to sale at private entry at one dollar and twenty-five cents per acre to which said State may be entitled under the provisions of this act, land scrip to the amount in acres for the deficiency of its distributive shares; said scrip to be sold by said States and the proceeds thereof applied to the uses and purposes prescribed in this act, and for no other use or purpose whatsoever: Provided, That in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State, or any Territory of the United States, but their assignees may thus locate said land on any of the unappropriated lands of the United States subject to sale at private sale at one dollar and twenty-five cents a less per acre. And provided further, that in no case shall more than one million acres be located by such assignees in any one of the States, and be it further provided, that no such location shall be made before one year from the date of the passage of this act, unless authorized by the legislature of the State in which it is located. And provided further, that no such location shall be made by any State, or its assignees, in any State in which there is not the quantity of public lands subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled as aforesaid, but shall be located by such assignees in other States in which such quantity of such lands does not exceed one million acres. Sec. 3 And be it further enacted, That all the expenses of management, improvement, and sale of the land granted by this act, other than the cost of the same when it shall have been surveyed, shall be paid by the States to which it may belong, out of the proceeds of said lands, after the same shall have been sold, and the net proceeds of said lands granted by this act, after deducting the expenses aforesaid, shall be invested in stocks of the United States, or of the States, or some other safe stocks, yielding not less than five per centum upon the capital invested, and the capital of the fund so invested shall forever remain undiminished, and the annual interest shall be inviolately applied to the 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 the liberal education of the industrial classes in the pursuits and professions of life. Sec. 4 And be it further enacted, That the grantees named in the preceding section of this act, except that a sum, not exceeding ten per centum upon the amount received by any State under the provisions of this act, may be expended in the purchase of lands for sites or experimental farms, whenever such purchase shall be deemed necessary by the legislature of such State, or its agent, for the same and which appropriation has been made of the proceeds of said scrip, shall be disposed of by the State to which it belongs, or its agents, within five years from the date of its receipt, and the proceeds thereof applied to the uses and purposes prescribed in this act, and for no other use or purpose whatsoever. Sec. 5 And be it further enacted, That the grantees named in the preceding section of this act, shall, within the first year after the same shall be disposed of, report to Congress all such lands so purchased, and the amount received for the same, and what appropriation has been made of the proceeds.

Galusha A. Grow
Speaker of the House of Representatives.

Solomon Foot
President of the Senate pro tempore

Abraham Lincoln

Approved, July 2, 1862.

The Land-Grant Idea at Iowa State College

A Centennial Trial Balance, 1858-1958

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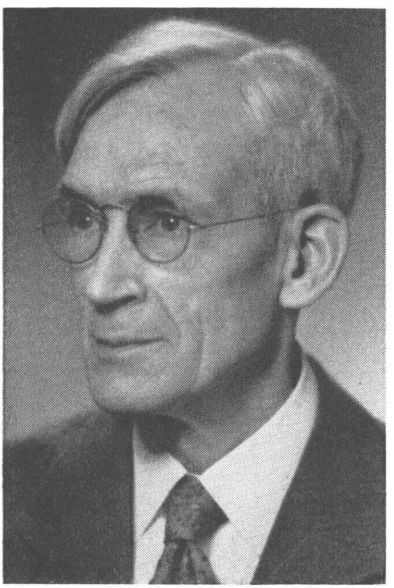
Foreword

THE YEAR 1958 will be a most significant one for Iowa State College because on March 22, the College will have reached the 100th anniversary of its founding. Iowa State College was born of change and in the desire of the citizens of 100 years ago for a new kind of education.



EARLE D. ROSS

It is fitting for us to pause and reflect on how well our record of the 100 years has lived up to the plans and intentions of the founders. The manner in which we have reached today's position, and the extent to which we have fulfilled these original hopes, have been given a critical appraisal by Dr. Earle D. Ross in this book.

Dr. Ross is one of the foremost authorities on the land-grant movements as a particular phase of American history. He is author of *Democracy's College: the Land-Grant Movement in the Formative*

Stage, which covers the broad aspects of this definitive philosophy, and for specific application to a single institution has authored the earlier *A History of Iowa State College.* Additionally, in his chosen field, he was editor of *A Century of Farming in Iowa, 1846–1946,* and joint editor of *Readings in the History of American Agriculture.* Among his other works are *The Liberal Republican Movement; Iowa Agriculture: An Historical Survey;* and contributions to *The Growth of American Economy, Dictionary of American Biography* and *Dictionary of American History,* as well as more than 100 articles to leading historical, educational and social science journals.

Dr. Ross has been College Historian since 1939, and has been on the staff of Iowa State College since 1923. Prior to this he served on the faculty of Simpson College, Illinois Wesleyan College, and North Dakota Agricultural College. He is a graduate of Syracuse University and completed his doctorate at Cornell University.. He was awarded the honorary Doctor of Humane Letters degree by Grinnell College in 1952.

Readers will find Dr. Ross' evaluation of Iowa State College's contribution during the last eventful century both interesting and informative.

JAMES H. HILTON
President,
Iowa State College

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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

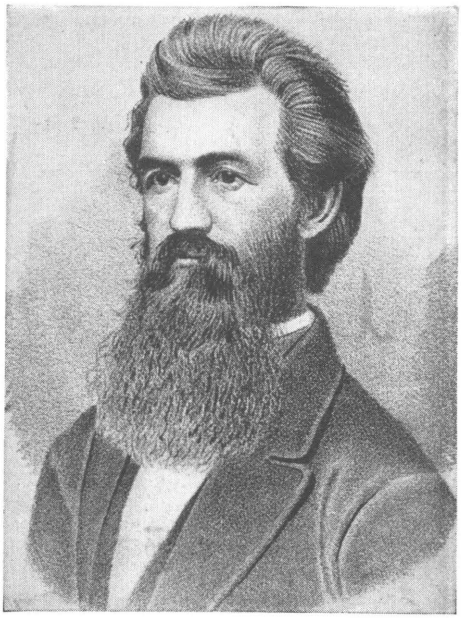
and subject matter, had never made such an appeal. Here indeed was "democracy's college" — in design and aspiration. The opportunity was clearly open to all aspiring young people who found existing institutions and courses of study unavailable or unacceptable.

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 divison 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 superiorily 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 decison 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.

Renssaelaer 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 unblessed 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.

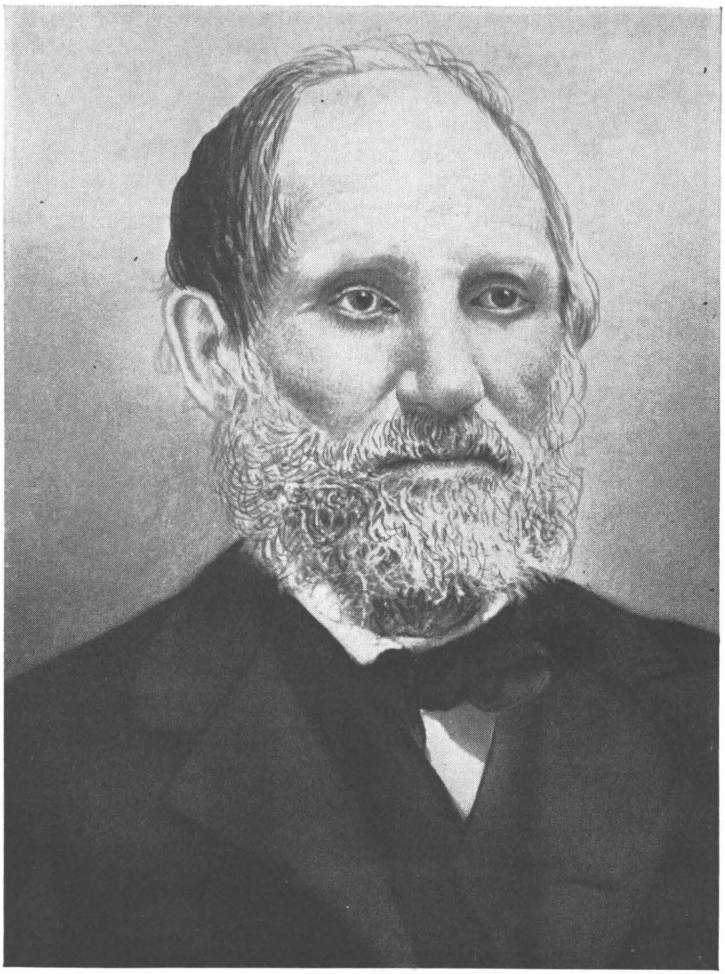
The Land-Grant Idea at Iowa State College

Chapter 1

The Hawkeye Venture in the New Education

THE CHARTERING of the Iowa Agricultural College on March 22, 1858, reflected the growth and aspirations of the youthful commonwealth and its early response to the industrial movement in higher education. The time was both opportune and critical. First had come the spectacular rush of settlers to this fertile region so favorably located. It was an expression of boom times and was facilitated by the use of depreciated land warrants from the bounties of the Mexican War. But inevitable land speculation and over-extension of commercial enterprises brought devastation in the panic of 1857 and the resulting depression. Compounding the financial distress was a series of excessively wet seasons. But neither depressed markets nor unseasonable weather could long stay selected pioneers in a strategic setting.

The migration of the fifties had been largely from the Northeast and the Old Northwest with propitious intermix-



Suel Foster, an early and persistent champion of industrial education, helped draft the original bill which was introduced in the 6th General Assembly in 1856. Two years later this bill in revised form was to become the organic act of the Iowa State Agricultural College and Model Farm. Foster then was the first president of the Board of Trustees in 1859. He served in that capacity until 1865. In this position he was legally the acting president of the College, and he was so designated by the press of the state.

tures of British, German, Dutch, and Scandinavians. Such a society of homemakers integrated thrift, foresight, and a belief in religion, morality, and knowledge. This gave a preferred place to schools and the means of education. To the schools and academies was added a state university. After much necessitated sight lowering, it made small beginning in 1857 — largely as a teacher training institute. A few hopeful sectarian "colleges," some only at the preparatory stage, had survived by the end of the decade. A devoted company of eastern home missionaries, the "Iowa Band" was a leavening element, intellectually no less than religously.

Zeal for economic and social reform was early manifested in mechanics institutes and manual labor academies. The movement for technical education centered in agriculture which, as stated in a legislative memorial to Congress in 1848, was "the leading interest of this state."

Improvement of farming was expressed as a conscious desire from territorial days. In 1853 a state agricultural society was formed and in the same year *The Iowa Farmer and Horticulturist* was issued at Burlington. Three years later *The Northwestern Farmer* was started at Dubuque. These papers, with the state and county agricultural societies, became the main organs of agitation for a state agricultural college and for an agricultural bureau. The campaign was spearheaded by two zealous reformers, Suel Foster, a pioneer horticulturist, and William Duane Wilson, agricultural journalist.

There was no question of the need for technically trained experts to develop the resources of the prairie state. Dr. George F. Magoun, president of Iowa College at Grinnell — seeking to divert a potential major rival in liberal

education — argued shrewdly and pointedly for the development of the University as a polytechnic institute, with the emphasis upon science and its applications. Governor Grimes, a Dartmouth man, concurred fully in this mission for the state's institution of higher learning. So plausible did the argument appear, so in line with the immediate developmental needs of the state, that if funds had been available Iowa's university like that of Illinois might have been started as an "industrial" institution.

In contrast, the agrarian reformers were convinced that only a straight agriculturally based and operated institution, wholly separate from any entangling alliance with classical education, could provide adequately the full program of the farmers' college they sought.

► TIME FOR THE DRIVE

In spite of the hard times, by the session of 1858 the sponsors felt that the drive should be made. Hitherto the legislative reaction had not been encouraging. After passing in the Senate in 1854, a bill for a modest appropriation for an agricultural bureau had been greeted with satirical ridicule in the House. In the session of 1856 a bill for an agricultural college introduced by a young farmer member, Robert A. Richardson, received little more attention.

But meanwhile the scope of state powers was in process of marked expansion. In the gubernatorial election of 1854 the control passed from the Democrats — with their inhibitions upon governmental functions — to the Whig-Free-Soilers, with their traditions of extended public action. Later elections completed the transition and the new constitution of 1857 registered the changed authority over finance and public welfare.

Thus the seventh General Assembly meeting at the permanent capital in January, 1858, had the exacting tasks of acting upon these powers to meet the immediate critical conditions and to start the state on a progressive course. Fortunately both houses had talent and leadership that have never been surpassed.

With such immediately pressing business on the agenda and the depletion of available revenue, the time was not propitious for educational innovation — "industrial" or general. However, the campaign had been well planned and was in charge of skillful managers.

The State Agricultural Society sent a brief for an agricultural college and a bureau. County agricultural societies added their bits. In his inaugural address, Governor Ralph P. Lowe, in recognition of the state's "leading interest," repeated the arguments of the society petitions almost verbatim and qualifiedly endorsed the recommendations. He proposed a bureau with the state functions that the patent office performed for the country in general, then added the rather indefinite suggestion of the establishment "at the proper time" of "agricultural schools" with model farms. This friendly gesture was evidently as far as the rather jittery governor felt that he could commit himself during the existing tight money situation. Unquestionably a majority of the legislators felt that the times were inopportune for a further venture in higher education, whatever its potential benefits.

In the founding of a new type college amid such obstacles, the determining influence was in the representatives to whom the drafting and direction of the bill were entrusted. Benjamin F. Gue of Scott County, Robert Richardson of Fayette, and Ed Wright of Cedar all combined zeal for re-

form with a realistic understanding of the ways of practical politics. As pioneer farmers living in log cabins they had intimate experience of the need for the training of farmers for competence in their occupation and for full participation in public affairs. All three were to render effective public service. Gue and Richardson served on the board of the College. Gue especially was to be a guiding influence throughout the formative years. He was a native of central New York who had studied in academies and taught school before coming to Iowa in 1852. With his brother, he made a farm with hard work and high priced credit. He was to have a distinguished career as state and federal office holder, journalist, and the first serious chronicler of Iowa's history.

The bill formulated by Gue, Richardson, and Wright sought to combine the functions of college and bureau, and to appeal to farmers as a practical servicing agency. It bore the rather cumbersome title, "a bill for an act to provide for the establishment of a State Agricultural College and model Farm, with a board of trustees, which shall be connected with the entire agricultural interests of the State." An appropriation of $20,000 was sought to get the wheels rolling toward the desired goals.

The opposition in the House was immediate. James F. Wilson of Jefferson, a confident young political Lochinvar who in his first term was heading ways and means, insisted on taking the bill from the agricultural to his own committee — where it was promptly consigned to indefinite postponement. When the measure was called out, Wilson was joined in opposition by the chairmen of judiciary and expenditures with the standard arguments of needless expenditure and visionary innovation.

The sponsoring team was all set for the attack. Wright, a shrewd parliamentarian, took charge of procedure, Rich-

ardson provided material and advice, and Gue voiced the argument with a skill and effectiveness that did credit to the old-time training in forensics. He pled for an educational opportunity for the "farmer, mechanic, day laborer, inventor, and manufacturer" on a par with that of the professions — not only in occupational competence but in state and national leadership as well. If this parity position were denied, he tellingly warned, the groups indicated would not be in doubt as to the responsibility for the deprivation.

Such an appeal for the "leading interests" of the state could not be ignored by their representatives. The chairman of agriculture, William Lundy of Muscatine, effected a compromise by which the proposed appropriation was cut in half, and the opposition gave way. Governor Lowe signed the bill March 22, 1858 — considered the founding date of the College. However, hard times and the pressing demands of the Civil War took almost all of the energies of the new state for a decade following passage, and it was 1869 before the College was formally opened.

Under the guidance of Charles Foster, a leading stockman of Washington County, the bill met no effective opposition in the Senate, with the exception of a futile but prophetic move to create an agricultural professorship in the University.

The founding act reflected the prevailing ideas of "industrial education." Gue maintained that the bill expressed leading plans that had been proposed in different regions as well as points resulting from consultation with successful farmers. His own views of objectives and range of subjects proved much broader than the strict interpretation of the act might suggest.

The subjects of instruction specified in the act were all sciences or their applications, listed in no particular order

of classification: natural philosophy, chemistry, botany, horticulture, fruit growing, forestry, animal and vegetable anatomy, geology, mineralogy, meteorology, entomology, zoology, the "veterinary art," plain mensuration, leveling, surveying, bookkeeping, and such mechanic arts as were directly connected with agriculture. Other studies "not inconsistent with the purposes of the act" might be added by the trustees. The extent and terminology of the enumeration showed the transitional state of the sciences as well as the lack of established specialties in agriculture.

Evidently it was expected that the practical applications would be emphasized throughout. The responsibility of creating professorships and making the assignment of these subjects was given to the board. To provide the "farm" portion of the institution including the campus of the College, the board was instructed to purchase at least a quarter section after securing and appraising the bids from competing counties.

The eleven trustees, apportioned by the existing judicial districts, were elected by the legislature from nominations made by the county agricultural societies of the respective districts. The governor and the president of the state agricultural society were ex officio members. With greater wisdom than was shown later, the president of the College was made chairman. The only compensation of the members was mileage for attendance upon not more than three meetings annually. However, membership was regarded as a high honor and the early boards were composed of outstanding leaders in improved farming and social reforms.

The bureau function was vested in the secretary to be elected by the board from its membership. This official with a full-time salaried position and an office in the capitol, in addition to his service to the board, was to provide a

clearing-house and servicing agency for the collection and distribution of new seeds and plants, the encouragement of agricultural and industrial improvement, the collection of statistics, and the making of an annual report.

In January, 1859, a preliminary organization came into being with the selection of W. D. Wilson as secretary and Richard Gaines, treasurer. The permanent chairmanship awaited the selection of a president. Indicative of the spirit of the new venture was the resolution that while the official name of the College was given in the act, in "general use" the institution should be referred to as the "Iowa Farmers' College." It was further resolved that the members acquaint the farmers of their district with the "objects of the Farmers' College."

Full organization was made at the June meeting with the selection of Suel Foster as president pro tem. In this position, which he held for five years, he was head of the inchoate college and was so referred to in the press.

At this meeting the preferred subjects were grouped into four professorships whose incumbents would have rivaled Francis Bacon. Such combinations gave little heed to the scope and method of the new science —

PHYSICS: natural philosophy, chemistry, geology, mineralogy, meteorology.

MATHEMATICS: arithmetic, algebra, trigonometry, conic sections, astronomy, surveying, civil engineering, bookkeeping.

ZOOLOGY: entomology, ornithology, ichthyology, animal anatomy, veterinary art.

BOTANY: fruit growing, horticulture, forestry, vegetable anatomy, general botany.

Evidently the social sciences and humanities belonged to the "other subjects" that could be tacked on more or less incidentally.

The committee on the selection of president and faculty was continued. But obviously the immediate concern was to acquire a domain and to develop a going plant.

So small and uncertain did the future college seem that only six counties sought to acquire it — Hardin, Jefferson, Marshall, Polk, Story, and Tama.

Although still in the pioneer stage and handicapped in early settlement by the reputation — in part warranted — of swampy situation, Story County had been unusually interested in acquiring this pioneer enterprise to grow and mature with the county. The proposed location was in the western part of the county, so Boone County joined in the enterprise in a substantial manner. A lively campaign of newspaper stories, mass meetings, and exhibits of the products of the region aroused sentiment for a "fund raising" drive. County bonds to the amount of $10,000 were voted, notes were given, and about a thousand acres of land in Story and Boone donated. The total value of the Story-Boone offer was estimated at $21,355 — a sizable amount for that time and region.

The effort and sacrifice were not in vain. On June 21, 1859, the committee voted to accept the offer. The result was due in considerable part to the exertions of public spirited leaders who had confidence in the future of the state and of their particular region. But no less credit was due to small struggling farmers who in the midst of bad seasons and low prices made pledges from their scant resources to bring a chance of higher education to their children. With good reason the region's triumph was celebrated by an old fashioned Fourth of July picnic in a grove on the northern edge of the later campus.

A 648-acre tract west of the Squaw Branch, secured from

five different owners at a cost of $5,379.12, was selected for the original domain. It was fairly representative in soil and terrain, so thus was suited to an experimental, if not always "model" farm. A considerable portion required drainage and except along the streams, plantings were necessary for shade — classic or otherwise. It remained to change the natural prairie into a going farm according to the standards of the time and the supposed requirements of an agricultural college. During the first year preliminary breakings were made and contracts let for a farmhouse and barns. Various interests were helpful: manufacturers furnished implements for trial, breeders contributed foundation stock, and nurserymen donated fruit trees.

Before further development could be made the whole project was subjected to a struggle for survival. The business and political outcome seemed gloomy and uncertain. Many — no doubt a majority — were led to question whether further support should be given to an enterprise that seemed at best problematical and offered so little benefit for the immediate future. In the session of 1860 the outgoing Governor Lowe merely reported the purchase and small beginnings of the farm. The incoming Samuel J. Kirkwood, disavowing personal information, recommended a "careful and friendly consideration" by the legislature.

With a considerable number the attitude was quite unfriendly. There was a direct movement to repeal the founding act and the committee on agriculture was directed to inquire into the expediency of such action. The minority report urged this defeatist course, alleging that in a time of financial distress, the taxpayers were opposed to an expenditure for a project of no immediate benefit and which in any case was premature for the youthful state. Gue for

the majority again reiterated his plea for equal opportunity for farmer and laborer. The policies thus far had shown vision and prudence. The benefits were already being experienced in the notable services of the embryo bureau under the direction of the secretary of the board. To abandon such a beneficent project would be a backward step.

Whatever the ultimate benefits, current distress was not to be discounted. A majority of both houses favored the economy move. But in the end Gue saved his cause by the parliamentary ruse of getting the adverse motion laid on the table — from which it was never lifted.

► FEDERAL PROVISIONS HELP

Following this reprieve, the college interests were glad to settle for adjustment of the titles of the donated lands and the validation of the Story County bonds whose legality had been questioned, and to await a more favorable season for added support. Meanwhile the basis of support and the scope of the program of industrial education were greatly extended by the entry of the national government with the land-grant act.

Iowa's Agricultural College had been chartered and inadequately financed with the confident expectation of federal aid, either by special subsidy or general grant. Both past precedents and pending legislation supported such an assurance. In addition to the regular reservations for elementary and higher education, from early statehood, aid had been sought for technical education. In January, 1848, the first General Assembly had petitioned Congress for the site and buildings of Fort Atkinson with sections of land for the establishment of an agricultural school on the manual labor basis, as a branch of the University. As a distinct part of the campaign for agricultural education, a legislative

memorial was sent to Congress March 3, 1858, asking for 50,000 acres for "establishing scientific agricultural schools." The memorial argued that this essential assistance to the "*respectable* portion" of the inhabitants would stimulate all elements of the state's economy. As it chanced the memorial was received and referred to committee on the very day that the chartering bill passed the Iowa house.

A month later Morrill's first bill was being debated. As Morrill's correspondence and newspaper discussion indicate, there was much enthusiasm in "the first free state of the Louisiana Purchase" for a measure that like the proposals for homestead, agricultural department, and trans-continental railroad involved a conflict of free-soil with state rights interests. The board of the Iowa College felt that the aid was inadequate and instructed the delegation to seek a grant in line with the state's area and present population. On the final vote Iowa's senators were divided; the ex-schoolman James Harlan, an ardent freesoiler, was a leading advocate. His colleague George Wallace Jones, a state rights Democrat, voted with the opposition. Both representatives supported the bill.

The Iowa delegation made but slight contribution to the bill of 1862, which raised the grant unit and based it upon the 1860 census. This was the far-famed Land-Grant or Morrill Act of July 2, 1862 — the organic law of the land-grant colleges. It provided a grant of public lands or land scrip to each state at the rate of 30,000 acres for each senator and representative that the state had under the apportionment of 1860.

With the removal of the southern opposition, the alignment in the main reverted to the perennial East-West sectionalism. Naturally the landed states opposed the population basis of distribution. Though with lessened enthusi-

asm, Harlan continued to support the measure as a gain for education in all the states, in spite of the inequality involved. James W. Grimes, now his colleague, was not concerned about the states but about the unprotected territories and for that reason he cast a negative vote. In the House, James F. Wilson, who had led the opposition to the Iowa college bill, cast the state's sole vote with the opposition. His colleague had withdrawn for military service.

Whatever differences there may have been over source and apportionment of the federal grant, the state hastened to accept its provisions. The main financial condition to be accepted by special legislative acts was that the states maintain the capital fund undiminished except that not more than 10 per cent might be used for the purchase of a site or of an experimental farm. No portion of the fund nor of the income from it could be used for the "purchase, erection, preservation, or repair of any building or buildings."

In the special session called in September, 1862, Governor Kirkwood warned that delay in accepting the grant and locating the lands might lead to a prior selection by holders of scrip from eastern states that would seriously restrict the area of choice. To forestall such outside competition, a bill was enacted on September 11 to accept the grant "upon the terms, conditions and restrictions contained in said act of Congress" and to provide for the selection of the lands. Whatever the assumptions as to the extension of the functions of the College in line with the federal prescriptions, the only addition was the word "mechanical" to agricultural in the statement of the purpose of the act. Iowa was the first state to accept the provisions of the Morrill Land-Grant act. The state was given something more than 204,000 acres under terms of the act. By careful handling of the lease and sale of that land, it eventually received more than $800,000

in endowment, far in excess of early estimates, and more than many other states who handled their grants less prudently.

Following the acceptance of the grant, Kirkwood hastened to appoint Peter Melendy of Black Hawk as agent. Melendy, like many of the leaders in pioneer Iowa, was a native of Ohio where he had gained recognition as a cattle breeder. In 1855 he was an organizer of the grandiose scheme of the "Iowa Fine Stock Company" in Butler County. He later became a town builder and leading citizen of Cedar Falls. His long career was marked by public service in varied lines to state and community. His contribution to the founding of the College was second only to that of Gue.

Melendy, with only one assistant, entered upon his exacting task with such expedition that by January, 1863, the field work was largely completed. Selection was hampered by rival grants and claims of preemptors, homesteaders, and railroads. The available area was in northwestern counties with nearly two-thirds of the selections in Kossuth, Palo Alto, and Emmet. Formalities of the federal land office necessitated revisions and adjustments that delayed final certification until January, 1864. Through it all, in Iowa or Washington, Melendy patiently and faithfully represented the interest of the state.

There were bound to be criticisms of certain of the selections but time was to demonstrate the permanent contribution which Melendy made to the future college. Under the limiting conditions the locations were made with sound judgment, and *mirabile dictu!* there was an example — all too rare — of an involved public land adjustment in which there was never a breath of scandal.

Under the avowed purpose of the federal act, it naturally

seemed that the Agricultural College would automatically receive the grant. But not so; there was still another barrier on the obstacle course to the goal of an established land-grant college. At the legislative session of 1864, the University forces — in their financial desperation — proposed the division of the fund, with agricultural professorships at both institutions. To avoid duplication, a University trustee proposed unifying the state's higher education by making the Agricultural College a division of the University.

A joint committee on the college farm headed by Gue, now a senator, graphically pictured the contrast in organization, aims, and program between an urban centered, sophisticated university and a simple rural farmers' college. For self preservation the land-grant function was made narrow but distinct — a limitation that would hamper the College in future years.

Mass meetings, joint public debates, and heated newspaper letters and editorials did not win needed support for the University sub-division that was illogical and inexpedient. The lands were assigned to the College with power to sell or lease as the sole source of revenue for operation — as they were to be until the turn of the century.

To secure an immediate working income and to profit by rising land values, a system of long-term leases with privilege of purchase at the end of the lease period was shrewdly devised by Gue, Kirkwood, and Coker F. Clarkson. The prudential purchase and location of the scrip of other states added appreciably to the investment. This careful financing provided the College with a modest but adequate support in the early years before the full responsibility of the state for its own instrumentality was recognized. At the same time a permanent endowment of some four-fifths of a million dollars was gradually accumulated.

First college building was the Farm House, completed in 1861 along with some other farm buildings. The first occupant was W. H. Fitzpatrick who rented the farm. The Farm House became the home of the superintendents of the farm and later the deans of agriculture. In later years considerable remodeling was done, and the soft exterior bricks were covered with cement. At the Centennial it still was the residence of the Dean of Agriculture.

The land all was disposed of before the turn of the century, and the funds put to work. At the Centennial, $776,761 was in government securities and $26,300 in farm loans. Endowment interest on these was $21,354.77 for the year just completed — all going to teaching salaries.

The state was legally and morally obligated to the provision and maintenance of a college plant. The farm had been leased for the first two years, the rental being paid largely in labor service. Board members acted as mangers for a few years until a resident superintendent was hired. Of necessity the "farmhouse" and barns were the first buildings. As manuals and periodicals of the period indicate, much of the desirable planning and designing of landscape, buildings, shops, and laboratories awaited the applications of science which the land-grant colleges would so largely provide.

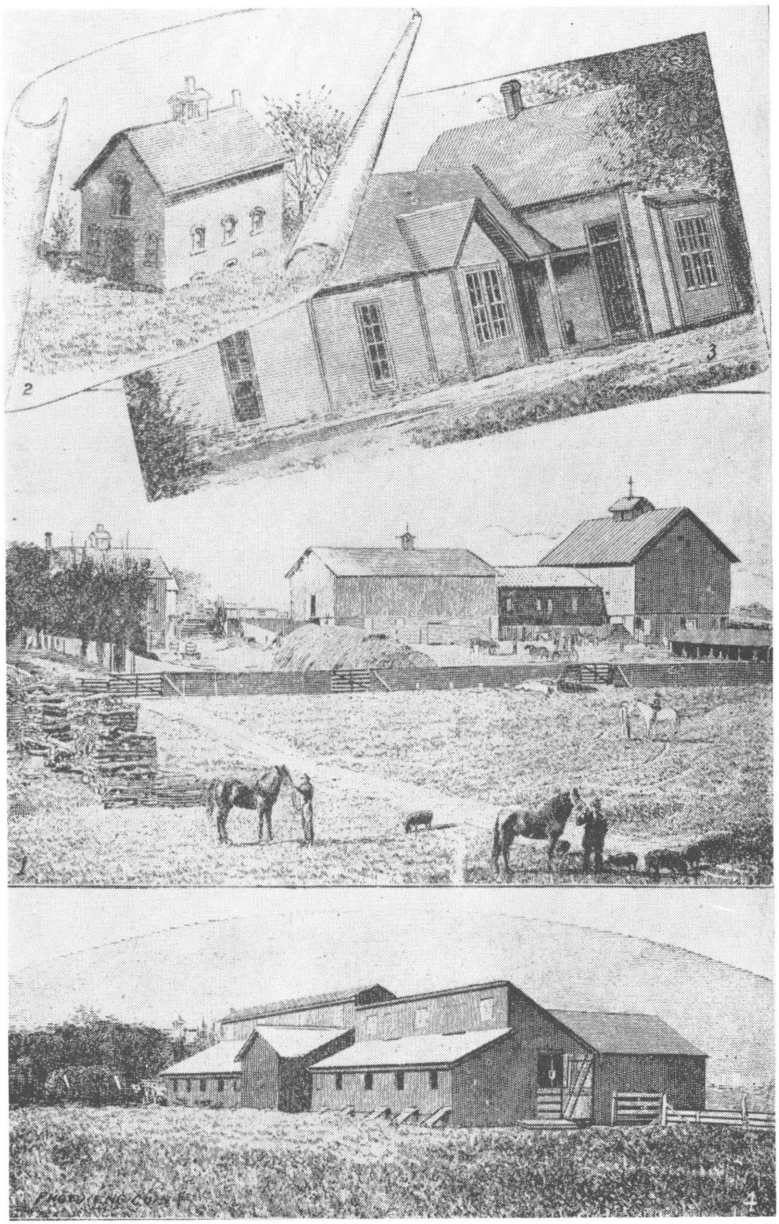
Planning for the main building, "the college," had been going on since 1859 by correspondence with other states

engaged with similar construction. It was a distinct challenge to design a general purpose building for housing of students and a number of staff members, for dining, for instruction, and for general assemblage. Keeping this within at most a modest appropriation taxed achitectural and construction ingenuity. The trustees were agreed that within the limits of dignity and propriety, simplicity and utility should be the guiding principles. There was to be no place for the ornate or decorative.

Finally in 1864, after the assignment of the grant to the College, an appropriation of $20,000 was made for a building — the total cost of which was not to exceed $50,000. The structure was to be enclosed by the fall of 1865.

Financial ceilings and time schedules took no account of the exigencies of construction by a lay board. Delays, incompetence, misunderstandings, and underestimated costs attended the construction. By 1869 when the incompleted building was occupied, the cost had risen to $110,000. Heating, lighting, ventilation, and sanitation were to be costly inadequacies throughout its existence. It was slight consolation to economy-minded legislators to be assured by the governor that, next to the insane asylum, the College would have the finest building in Iowa and that the cost had been less than that of similar buildings in other states.

(1.) The cattle barn was built in 1861. It was torn down in 1929 and stood just north of the present landscape architecture building. (2.) The horse barn was built in 1870. It was torn down in 1900 so the new horse barn could be built in its place. That horse barn was remodeled for the department of landscape architecture in 1930. (3.) The first creamery was built east of the Farm House in 1879. Later used as a herdsman's cottage, it was torn down in 1927. (4.) Piggery was built in 1866 and burned about 1885. It stood in an area east of the present Dairy Industry Building.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The first unit of Main Building, which was built in 1868, housed the whole college. In the basement were dining room, kitchen, laundry. On the first floor were chapel, president's office, cashier's office, and library. Second floor contained several classrooms and rooms for students. The third and the fourth floor contained student rooms and the museum. The north section of the building was destroyed by fire in 1900, and the south wing went up in smoke in 1902. Living quarters were divided into sections, boys and girls separately organized. On Saturday afternoon boys could enter Main by the front entrance, but at all other times that was considered the girls' entrance and the boys had to use the side or back doors. Rooms were scantily furnished — two straight-backed chairs, a wardrobe, study table, wash bowl, pitcher, and waste receptacle.

A supply of clean straw was piled at the entrance and from this ticks were filled and dragged to the rooms.

With added wings necessitated by increasing enrollment the cost was to mount beyond early imaginings. But whatever the costs and limitations, "Old Main" served with remarkable effectiveness as the center of college life and work throughout the formative years.

Far more difficult than the physical foundation was the organization and the selection of a president and his staff. To conduct investigations and make recommendations for these crucial tasks, the trustees chose their two most capable members — Gue and Melendy. They inspected sixteen schools and colleges in the Middle West and East, the Smithsonian Institution, and the federal departments of Agriculture and Education. They also consulted with the leading agricultural editors. An especially notable conference was at the Sheffield School where Senator Morrill was a guest of the staff and, according to the memorandum of William H. Brewer, made some of his frankest observations on the intent of his bill. Gue's account of their observations published in his *North West Iowa* provides one of the most revealing descriptions of the leading land-grant institutions in the formative years. The acute observers tended to rate the various institutions according to their conformity to the prevailing tenets of industrial education.

On the basis of their findings, personal experiences, and meditations, the advisory members made specific recommendations for the organization and operation of the College: an initial faculty of the president, four professors, and two assistants; the studies to be those named in the act of 1858 with the addition of practical agriculture and landscape gardening, and others approved by board and faculty; "a system of universal, compulsory, instructive, and remunerative manual labor"; a boarding department under full management of a steward; admission to be apportioned among the counties on the basis of representation in the lower house; board and faculty to determine entrance requirements; adequate provision for laboratories, library, and cabinets; a system of non-resident lectureships by leading scientists; and, a highly enlightened safeguard against subverting and perverting influences: "Politics and sectarianism of every description to be carefully excluded, and not to be permitted to control the selection of students or the members of the Faculty, and under no circumstances to be taught in any Department of the College."

To these recommendations the legislature in 1868, upon recommendation of the visiting committee and the petition of citizens of Ames, added the prohibition of the use of intoxicating liquors within two miles of the College. The trustees, not to be outdone in regulatory restraint, promptly banned the use of both liquor and tobacco at the College.

► ESTABLISH COEDUCATION

More positive action came in a formal decreeing of coeducation — a practice that had been assumed by ardent industrialists. In 1864, Suel Foster assured the State Horticultural Society that the College would provide agriculture

for the boys and horticulture for the girls. Four years later the society requested the board to provide for the thorough and practical education "of both sexes on equal terms." The organizing committee was favorably impressed by reports and observations of the system where it had been tried, and recommended that girls should be educated for rural homemaking. The board confirmed this sentiment by the decisive vote of nine to three. In an official sketch of his career Gue was to list his contribution to this system as one of his outstanding public achievements.

With essential policies of organization taken care of and with the plant approaching a habitable and instructional state, the next step was the crucial one of choosing a capable executive and a strong supporting staff. Gue and Melendy were convinced that "On the character and ability of its faculty will the character and success of the Institution depend, more than upon all other circumstances taken together." They were convinced that the standards of teaching should be of the highest, but they were aware that the top rank scientists could not be attracted to an incipient and more or less uncertain enterprise. Their main hope was to secure a nucleus of a "few thoroughly tried and experienced men" who might find and train outstanding young western scholars.

The key presidential office was especially hard to fill from the special requirements and the fact that other land-grant colleges were seeking the same sort of leadership. Of some thirty suggestions of possible candidates of varied talents and interests, one name stood out. President Abbot, of the pioneer Michigan Agricultural College, assured the committee that A. S. Welch would be the "best man in America" for their situation, and further inquiry confirmed

President Adonijah S. Welch was president from May 11, 1868, to November 27, 1883.

the judgment. After brief negotiations he was elected in the spring of 1868, to take office that fall. Meanwhile a skeleton faculty was being brought together gradually and by the formal opening a year later three professors and two assistants were on hand. To provide what was regarded as a minimum staff, four professors and an instructor were added during the first year. The president's recommendation in his first report of fifteen additional professors and several instructors that covered the technical and the main general areas of higher education was obviously, at that stage, a vision of things hoped for in the indefinite future.

Whatever the limitations of the first professors in formal education and teaching experience, with one or two exceptions, it could not be said that they were mere "theorists" lacking in contact with "practical affairs." Their leader was

Adonijah Strong Welch, a native of Connecticut. As a young man of scholarly tastes, he had been attracted to the pioneer state University of Michigan and graduated with high honor in the second class. Following graduation he had read law but preferred a career of teaching. His professional life was varied by participation in the gold rush and by service — apparently local — in a state company in the Civil War. In 1852 he became principal of the Michigan state normal school which emphasized the industrial program. In addition he served the cause in teachers' institutes, the state teachers' association, and as a trustee of the agricultural college. In 1865 he removed to the milder climate of Florida and engaged in lumbering and fruit growing. He became active in reconstruction politics and was in line for one of the senatorial seats in 1868. The

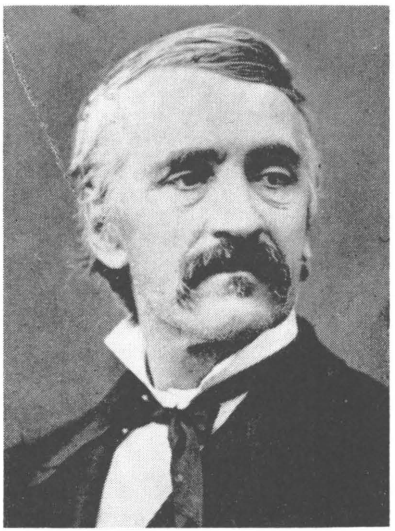
The first residence for President Welch was built in 1869. It stood south and a little east of where the Campanile now is. Later known as South Hall, Domestic Economy Hall, and then Music Hall, it was destroyed by fire in 1912.

same year he married for his second wife Mary Beaumont Dudley, the cultured and talented widow of a former colleague. Upon election to the Iowa position he agreed to take the short Florida senatorial term which would expire in March, 1869. After election to the Senate in June he served the final days of the long session before coming to the College.

Norton S. Townshend was professor of practical agriculture. Of English birth, he had received an M.D. at Physicians and Surgeons in New York and had served as an army surgeon in the Civil War, in the Ohio legislature, and in Congress. His main life interest came to be agricultural improvement and he had organized a rotating lectureship between Ohio colleges. It was felt that he combined admirably the scientific and practical.

George William Jones, who was to add varied administrative duties to his dual-chair of mathematics and civil

Acting President George W. Jones served from December 1, 1868, to March 15, 1869, while President Welch was in Washington, D. C., finishing his term as U. S. Senator from Florida.



Acting President J. L. Geddes served from May, 1877, to February, 1878, while President Welch was on sick leave.

engineering, was a native of Maine with A.B. and A.M. from Yale, and a considerable teaching experience in military and general academies. He was the principal of the Delaware Literary Institute in eastern New York when elected.

James Lorraine Geddes, brought from the headship of the school for the blind at Vinton to serve as steward and to organize and head the military training, was a Scotsman educated in Canada and in the British military academy in India. He had served in the Sepoy rebellion and in the Canadian cavalry before removing to the United States for school teaching and farming. He had raised a company for the Civil War which performed valiant service at Shiloh and Vicksburg, retiring as a brigadier general.

James Mathews, who had the rather specialized title of "professor of pomology," was a lawyer from Ohio who had served in both houses of the state legislature and in Congress. In Iowa he had been provost marshal of his district during the Civil War, then county attorney, and when

transferred to the collegiate realm was postmaster at Knoxville. He had gained a statewide reputation as fruit grower and it was upon the urgent recommendation of the State Horticultural Society that he was brought to the College to promote that branch of husbandry.

William A. Anthony, a Sheffield product, came from progressive Antioch College to teach physics and mechanics.

William H. Wynn was assistant superintendent of public instruction when elected to take charge of a conglomerate of subjects in the humanities and serve as preacher at the Sunday chapel. Before turning to education he had had a decade in the active ministry.

The exceptional case of inexperience was that of the professor of chemistry, Albert E. Foote who came with an M.D. from the University of Michigan at the age of twenty-four.

The rather tentative appointment as instructor in botany of an equally youthful graduate of Michigan's agricultural college, Charles E. Bessey, started the teaching career of a notable scientist.

Hugh Thompson, the farm superintendent who without subject portfolio rated faculty status, was regarded as a superior farmer of his region and had served in the Iowa legislature where he had supported the College claims against those of the University.

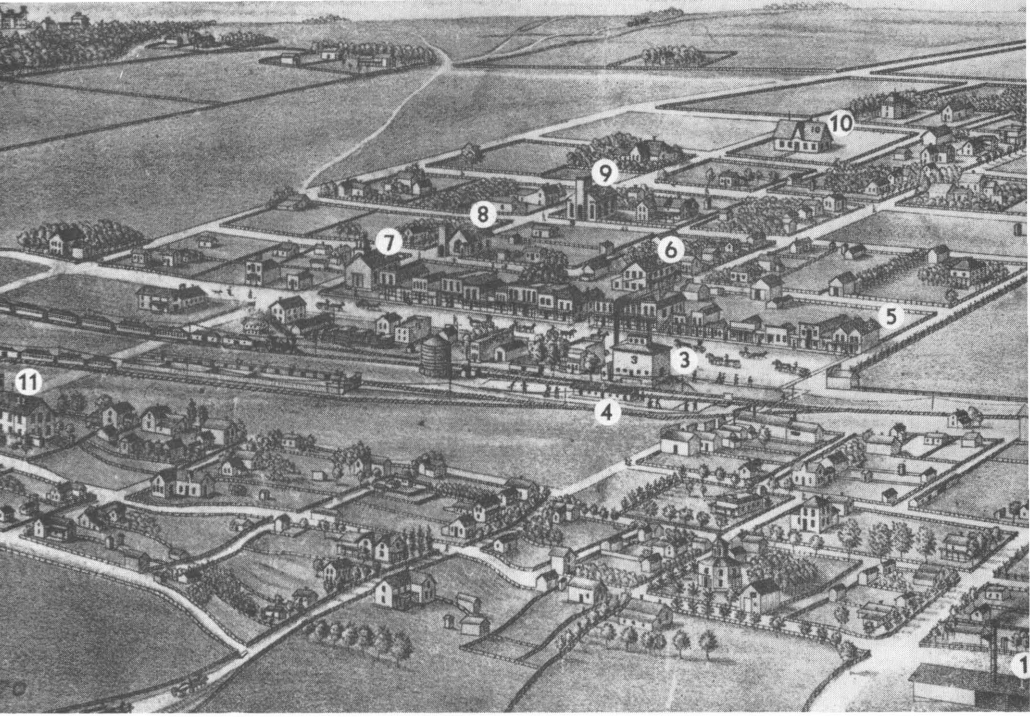
The large proportion of staff members drawn from other than regular academic life was typical of early land-grant colleges where the type of special training needed was not readily available until their own specialists had been graduated.

At the time appointed for opening — October, 1868 — the president and the small group of teachers arrived upon

the scene of an unkempt campus and unfinished building. The students who came to start their college careers — sixty-three men and nine women — were as unprepared as the surroundings. Instead of scientific specialties the basic elementary subjects were taught in a preparatory or refresher term from October 21, 1868 to January 7, 1869 — a humble task for college professors. When the president left early in December to complete his senatorial duties, Jones became acting president and Mrs. Welch took over her husband's classes.

With the president's political obligations completed, the stage was set for the formal opening. A skeleton faculty had been assembled, a small nucleus of students specially prepared, and the college building and two residences were nearing completion. The inaugural ceremonies of March 17, 1869, provided the most notable educational convocation in the state to this time. The audience of some twelve hundred drew heavily from the farms and rural communities. The governor, lieutenant governor, presidents of the board of trustees and of the State Agricultural Society participated. There was no representative of the University on the program but a professor from Iowa College read an original poem.

In a reminiscent and prophetic address, Gue, speaking for the College, expounded the philosophy of industrial education in characteristic vein and vigor. Dr. Townshend, for the faculty, rejoiced in the freedom of teaching that a non-sectarian institution gave. Welch in his inaugural address maintained that the College was seeking to promote wisdom and justice in "two great and salutary educational reforms," the substitution of the sciences for the ancient classics as the basic subjects of study; and the full equality of women



Bird's Eye View of Ames, Story County, Iowa, in 1870 — (1) Steam saw mill, (2) Steam flour mill, (3) M. & W. Evans elevator, (4) Depot, (5) New York house, (6) West hotel, (7) M.E. church, (8) Baptist church, (9) Congregational church, (10) North public school, (11) South public school, (12) Iowa State Agricultural College.

"to all the privileges and honors which the institution can bestow." In the "sciences" he included those which had to do with the student's duties to society and to his country.

Whatever the economic, social, or intellectual appeal of the new education, the low costs, the liberal and inclusive entrance requirements, and the freedom from the traditional language prescriptions of a general college course were influential in attracting the capacity enrollment of boarding students from the start.

Higher education had never been made so generally appealing. Costs to students were at absolute minimum, as accounts of early students show. They enjoyed free tuition, free rooms in the early years, books and board at cost,

and reduced railroad fares. Required and voluntary labor might bring from a quarter to a third of the necessary expenditure and the rest be earned in the long winter vacation, most frequently by country school teaching. If they showed a reasonable aptitude, candidates who were inadequately grounded in the elementary subjects were carried along in the preparatory department. Women from the first were represented in sizable numbers and were given special recognition in course adjustments, along with freedom to undertake any subject offered.

Occupational records of graduates indicate that a very considerable proportion of the entrants in the early years and later desired a general education for the professions or some line of business, rather than special vocational training. Likewise they found this type of general education, somewhat limited as it was at the beginning, preferable to that of old-line colleges. In a college day address, Judge John L. Stevens, of the first class, related that he came from Iowa College (Grinnell) and his roommate from Upper Iowa to escape the language requirements. In his memorial address for his classmate Stanton, Dr. O. H. Cessna of the same class related, "I chose the course in Agriculture as it seemed to have more of the Liberal Arts. He (Stanton) chose the Mechanical course as his special forte was mathematics." Ira A. Nichols, '89, a veteran journalist in his *Forty Years in Iowa,* recalled with perhaps a touch of exaggeration, that later in the 1880's: "The departments of agriculture and engineering had comparatively few students in those days. Nearly every boy and girl wanted a general education and expected to join the Bourgeoisie following graduation." In any case, it is evident that the issue of technical and general was very real from the beginning.

Chapter 2

A New Type College in Operation

IOWA'S LAND-GRANT COLLEGE was launched more auspiciously than those of most states, but for all — in an era of readjustment and transition from the wrecks of civil strife to the new industrializing and consolidating nation — the going, to the turn of the century, was rough and turbulent. In the resulting deflation, depression, and consolidation the "industrial classes" — farmers and laborers — were the main victims. Desperately and for a long time ineffectively, they sought parity position by organization and governmental aid. Iowa was a center of the agrarian crusade of the Grange, the Alliances, and the People's Party. Naturally they turned to the "Farmers' College" for direct guidance in production and management and for authoritative support for their action programs.

Unhappily the new colleges had little to contribute in verified information on production, distribution, or finance. In the "educational renaissance" from the 1870's to the World War I era the land-grant colleges were to be an in-

spiring and a generative influence, but for their first quarter century they were seeking to secure and maintain their place in the academic orbit.

The traditional division between the liberal and practical ("broad and narrow gauge") schools was to be an intermittent divisive influence through the first decade and a half of the twentieth century. The resulting disunity gave opportunity and excuse for producer and political groups to influence the selection of boards, presidents, and key professors. This was before the establishment of experiment stations. In the technical subjects, especially agriculture, there was a lack of usable applications of the sciences, with appropriate methodology. The supply of technically trained professors was entirely inadequate before the stronger institutions gradually met the demand. Meanwhile many learned "in service" at the expense of their students and the constituency. Neither the states nor the federal government provided any but nominal supervision, and before the late 1880's the colleges lacked organization for exchange of experiences and the influencing of standards.

With all the limitations of the early agricultural college in program, equipment, and staff, the shortcomings of the students in preparation and vocational purpose were still more pronounced. Many were unable to meet the elementary entrance requirements, and most were sadly in need of review or refresher courses. The preparatory department long remained a necessary adjunct.

The credulous assumption that farmers and mechanics generally were eager that their willing offspring should gain competence in one of the industrial pursuits was destined to great disillusion. In not a few cases the new higher education was sought as an escape from the family vocation.

For the Iowa Agricultural College it was fortunate indeed that in the critical formative years it was headed by a president who combined liberal scholarship with understanding and practical experience in business and politics. Welch thus was able to appreciate the claims and interests of the rival groups in land-grant education and, to a marked degree and for a relatively long period, to effect reasoned reconciliation. In taking the view that the technical training should be on a liberal basis in relation to appropriate general studies and that training in leadership should be an ultimate goal, he was expounding the true purpose of the organic act. It was no less fortunate in these years that Welch had the support of board members with the enlightment and integrity of Gue, Melendy, Richardson, Kirkwood, Charles E. Whiting, and others of this type.

It was a time when special interests and self seeking rather than broad liberal policies were to the fore. The legislature — jealous of its functions — had a hampering influence. The large board developed factions, in line with economic and social divisions. The staff was restless and dissentious; all were overburdened and some were clearly misfits. Welch sought in vain to pacify and conciliate the discontented within the College as he did those outside.

► CHARGE "WAVERING FROM COURSE"

The opposition in the state came from the belligerent Grangers and Greenbackers whose major indictment was the highly generalized assertion that the College was "drifting away from the original intent." This meant, according to their restricted view, that it was not a practical farm school. The attack was spearheaded by the chronic agitator, William Duane Wilson in the *Iowa Homestead.* Foremost of local alarmists was the picturesque Colonel Lucius

Quintus Hoggatt, who was elected to the legislature in 1873 on the Greenback ticket and whose farm on the east bank of the Squaw Branch enabled him to keep a critical eye on the Agricultural College and Farm.

Although divided, the board had a majority favorable to Welch and his policies, as they understood them. In a curious and ineffective scheme to restore harmony, the resignations of the president and staff were called for at the November, 1873, board meeting. This was immediately followed by the reelection of all but the three disturbing members — A. E. Foote, James Mathews and George W. Jones — who failed by one vote. The cause of the deposed professors was supported by the opposition as a case of autocratic suppression of freedom of teaching, and the disturbance was increased rather than moderated.

► AUTHORIZE SURVEY

The culminating count in the bill of grievances against the College was the discovery in January, 1874, of a large and deeply involved defalcation of the state and college treasurer to whom had been intrusted the funds of the College, with a careless confidence that had overlooked the negotiating of a bond. Official action of a drastic sort was clearly demanded, and a joint legislative committee was authorized to subject the College at Ames to a complete and thorough investigation. The legislative resolution contained these main charges: financial mismanagement and defalcation, neglect of the true aim of educating farmers and mechanics in the interest of business and the professions, and an unjust treatment of students. A general, roving survey of the course of study and methods of teaching was authorized.

From the acquisition of the farm, regular visiting and

special committees had observed and reported on activities, but this was the first full-dress investigation to which the College was to be subjected. As such it was, in every respect, a travesty and perversion of that legislative power. The committee, disdaining counsel, followed a procedure and an evaluation of evidence that were wholly original. The open hearings extended over a month and filled a volume of nearly eight hundred pages. Heresay, gossip, personal abuse, and irrational tirades were admitted along with documentary exhibits. Legislators, trustees, staff members, students, townspeople — all were given their say, however irrelevant and inconsequential. The hearing was a field day for the disgruntled and opinionated.

The findings were, in general, a vindication of the administration. The charge of departure from the true program of the College was not proven and no valid evidence of the oppression of students had been presented. No opinion was expressed on the dismissal of the staff members, as the committee — like the public — was divided in the matter. The criticism was largely of the board for its lax financial policies and unawareness of what was going on. This was a retrospective judgment as the large board had been replaced the previous year by one of five members.

With his detractors discredited and the dissentient staff members removed, Welch found himself in a position to develop his own program and to make his influence felt in the state and in national collegiate circles. Opposing influences continued but they were balanced by true and able supporters. Had Welch kept his physical vigor he no doubt could have remained in his position until voluntary retirement. But a physique never too robust was beginning to crack under the strain of teaching, supervision, and public

relations. In 1882 he welcomed the invitation of the federal commissioner of agriculture to inspect the agricultural schools of Europe.

Permission for this appropriate service was secured with considerable difficulty from the trustees. But it gave his opponents in the state, largely agricultural leaders and unfriendly members of the board, the opportunity that they had been seeking. One member was particularly hostile and was able to secure the support of two associates.

► REMOVE WELCH

The first move was to reduce salaries and consolidate or abolish positions, under the familiar guise of economy. The next year, 1883, the blow fell with the removal of Welch by a vote of three to two. The alleged justification was that he was becoming senile and no longer able to perform the duties of his office. The charge was heatedly denied by Welch's supporters – led by Kirkwood, then a minority member of the board. On his return Welch accepted the fortunes of academic politics philosophically and was allowed to continue his professorship of psychology and the history of civilization until his death in 1889.

In the stressful days of launching this new-type college, Welch had provided a sure and sound leadership. In a pioneer state in a period of hard times and agrarian pressures, he had kept a true vision of the mission of land-grant education. As an administrator he had advanced ideas of staff and student participation and of appropriate service to the state. While not a specialist in the modern sense, as a teacher he pioneered in such fields as landscape architecture, genetics, the philosophy of science, and the history of civilization. As a pioneer his ideas and policies were often

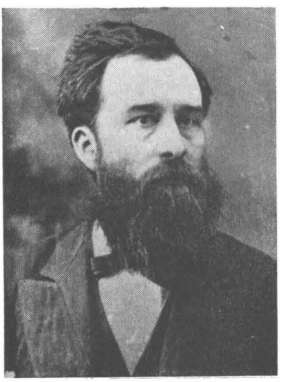
premature, but his contribution to the College and to American education was real. He ranks among the leading founders of land-grant education.

Though the victim of low demagogery and unscrupulous misrepresentation, Welch's educational principles were to receive official endorsement three months following his dismissal. In the act of March 20, 1884, the scope and functions of the College were redefined in accord with the broad statement of the Morrill Act. The corrective bill was introduced and conclusively supported by state Senator Preston M. Sutton of Marshalltown, who had been a prominent schoolman before studying law. In an elaborate analysis which provides one of the best reasoned interpretations of the land-grant act, Sutton contended that the continuation of the narrow program of the original Agricultural College had been in violation of the intent of the federal act which specified a broad training in which literature and the several sciences, including the social, should have distinct recognition. A telegram from Senator Morrill, which with characteristic ambiguity supported the contention, added official weight. By positive phraseology, the Iowa law gave a stronger recognition of general education than had the organic act itself. Following the provision for the "leading branches" of agriculture and mechanic arts there is added, "and which shall also embrace such other branches of learning as will most practically and liberally educate the agricultural and industrial classes in the several pursuits and professions of life. . . ."

At the same session — with the doubtful assumption that a larger, more geographically representative board would be wiser and less open to manipulation — a return was made to a board of eleven elected from congressional districts.

The membership was further increased, in 1898, by making the governor and superintendent of public instruction ex-officio members.

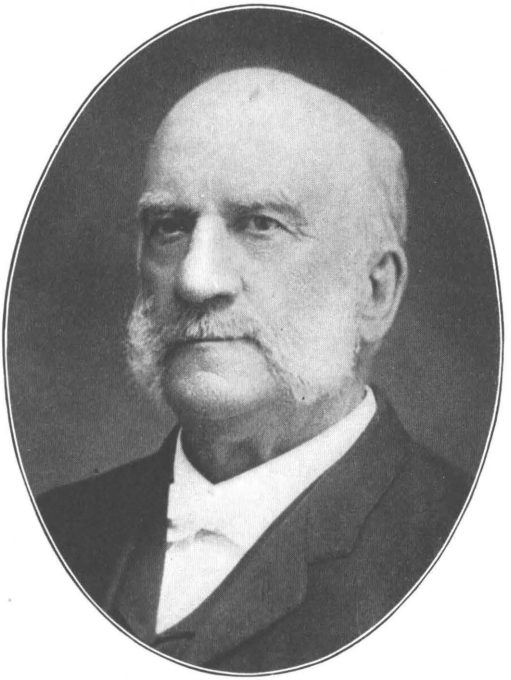
These measures were regarded by their supporters as both reforms and positive advances that would mark a new day for the College. If they could have had the support of public opinion and intelligent and impartial administration,



Acting President Charles E. Bessey served from September 1, 1882, to November 24, 1882, while President Welch was in Europe inspecting agricultural schools for the Commissioner of Agriculture.

the changes would have gone far to realize the great idea of popular higher education. But in years of continuing hard times and with the prevailing governmental standards and practices, the outlook could not be too promising. A sketch of the history of the College, written in 1920, refers to the period from 1883 to 1891, with marked understatement, as one of "administrative instability."

When Welch left for Europe, Charles E. Bessey as vice-president was left in charge. But with the reorganization in the fall of 1882, Seaman Knapp, the professor of agriculture, was made vice-president and acting head. Upon the removal of Welch, Knapp was given the thankless appointment of president for one year only. He had been a loyal supporter of Welch and was thus made the unwilling



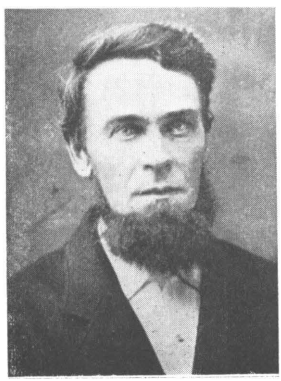
When acting President Bessey resigned, acting President Seaman A. Knapp served from November 24, 1882, to March 1, 1883, to serve out the leave which was granted to President Welch. On December 1, 1883, Seaman A. Knapp became president when President Welch was removed. He was appointed for one year until December 5, 1884. At the time he was elected he said he would not retain the position permanently and he did not approve of the removal of President Welch.

tool of the president's opponents. He carried on as best he could under the limited appointment and started his efforts for a system of federally supported experiment stations.

The new board promptly removed the restriction on tenure and sought an executive from the outside who could bring stability and assured leadership. The favored candidate, W. I. Chamberlain, secretary of the Ohio board of agriculture, could not be attracted at this time. The choice

was made of a man as unfitted and incompetent — by training and temperament — for a college president as could well have been imagined. Leigh S. J. Hunt had qualities of true genius but none of them was academic. His background was most obscure and he did nothing to clarify it. His formal education at most was sketchy. A native of Indiana, he had headed the school systems in several Iowa cities and was superintendent of the West Des Moines district when called to the new dignity. He had attracted attention in public school circles by addressing teachers' institutes and from devising a system of pupils' savings banks.

The selection of this most uncollegiate young man — not yet turned thirty — to lead a group of mature teaching and research scholars and to direct and counsel a diverse student body was due directly to the maneuvers of the journalistic politician, J. S. Clarkson — who represented his district on the board and who a few years later would gain notoriety as the super-spoilsman in the Post Office Department. That a personal political and business relationship should have been allowed to determine the head of a state college was a distressing reflection on the faithful awareness of a "representative board."

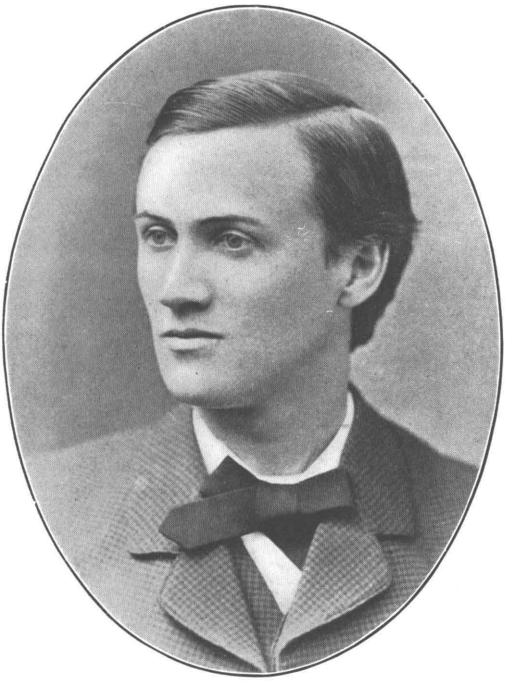


Acting President J. L. Budd served from December 5, 1884, to February 1, 1885. He was appointed to serve until the election of a permanent president.

Hunt's brief venture in higher education might have been regarded as a humorous interlude but for the demoralizing cost to the College and state in an unsettled period. So boyish in appearance that at least on one occasion he was mistaken for a freshman, the youthful executive was overconscious of his dignity and authority. An aloofness of manner and "aristocratic airs" — flaunted in riding to town in a trap drawn by a high stepping cob and attended by a footman on the back seat — were realistic demonstration of the caricatures of agricultural colleges by contemptuous critics. His lack of familiarity with college customs and procedures and especially of professorial sensibilities were all too evident. A resulting major casualty was the resignation of the popular Professor William H. Wynn, who was contemptuous of the chief's academic gaucheries and his pretentions in public address, especially in the professor's particular domain of the daily chapel. That there was not more concerted protest was but another evidence of the customary conformity of college (new type or old) faculties.

Without such restraint from faculty or board, there ensued a regime of academic dictatorship. From his limited training and experience he brought to college administrations the methods of an old-time "well disciplined" country school (or as some observers remarked, "of a soap factory"). He obtained from compliant trustees a mandate for "executive government" which signified a despotism.

The most spectacular test of personal rule was not with faculty or trustees, but with the senior class itself. Following the expulsion of two members for an infraction of rules which to student opinion seemed not that serious, the class went on strike, setting up their headquarters in the town opera house. When the president of the board came down



President Leigh S. J. Hunt served from February 1, 1885, to July 20, 1886.

from Hampton to offer his friendly mediation, he was informed curtly that the accredited head would handle the situation in his own way or retire. After a week's "urbanization" the class accepted the expulsion as a lost cause and were allowed to return without prejudice to round out their course for graduation.

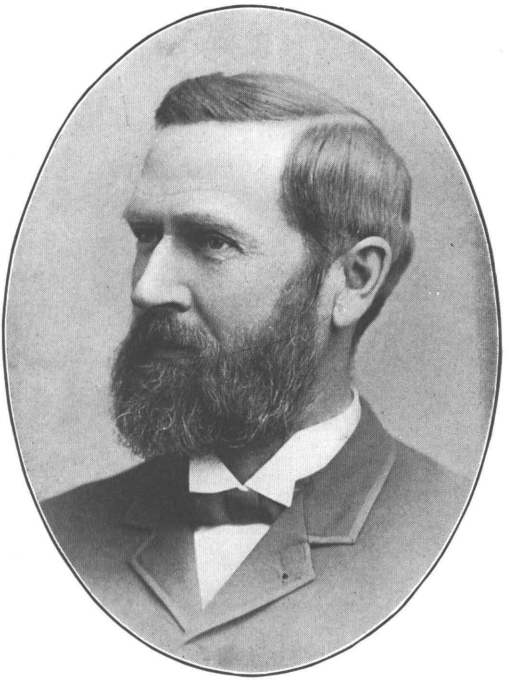
The board in reviewing the episode approved fully the "treatment and suppression of the troubles in the College during the summer of 1885, by the President, as having been correct, firm, and suitable to the emergencies of the occasion." Certain members of the faculty were known to sympathize with the class, but in the minutes of their meeting, devoted mainly to course of study revision, there is no

reference to "the troubles." However, cumulating dissatisfaction on and off the campus could not be ignored even by the most self-confident executive and the following spring Hunt resigned, as J. B. Hungerford observes in his reminiscences, "on the pretext of ill health."

Hunt's spectacular business career as journalist and banker in the Pacific Northwest, gold miner in Korea, cotton grower in the Sudan, and, in his last years, promoter of irrigation homesteads in Nevada, has suggested to some that if he had been given more time he might have made a comparably big name in educational administration. But his academic probation was far too demoralizing to risk its continuance. Leigh Hunt's career is another refutation of the fanciful popular notion, too often held by college boards, that a notably successful business executive should be an effective college president — especially in times of financial distress.

In spite of the unsettled conditions at the College, there was as usual an abundance of applicants for the post from Iowa and adjoining states. The unanimous selection was the preferred candidate at the previous election, Chamberlain of Ohio. He had the commendation of the leading men of his state — political, educational, and clerical. As an evidence of the lack of a definite pattern and standards in the position, the new executive at every point was a marked contrast to Hunt.

William Isaac Chamberlain, like Welch, was born in Connecticut, in 1837. But as the family removed to Western Reserve in Ohio during his infancy, he could be regarded as a native Buckeye. He was a farm boy of scholarly interests and habits. After graduating from Western Reserve University he taught the classics in academies and small colleges



President William I. Chamberlain served from July 20, 1886, to November 13, 1890.

until failing health caused him to move to the country. As a farmer he was notably successful; he contributed frequently to the agricultural press and was in demand as a lecturer in farmers' institutes. In 1880 he was elected secretary of the state board of agriculture and greatly extended its activities and services. He thus gained standing as an efficient agricultural administrator. At the same time he maintained his scholarly interests, remaining a student of the classics and of philosophy throughout his life. During his presidency both Ohio State University and Rutgers conferred an LL.D. Personally he was a man of strict integrity, kindly nature, and deep religious convictions.

As against these strong qualities, Chamberlain had cer-

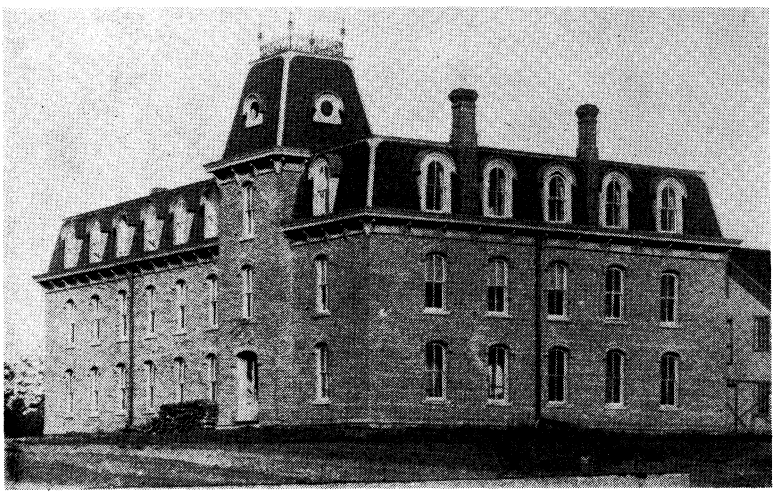
tain weaknesses and limitations that kept him from being the outstanding leader in land-grant education that he might otherwise have been. He was over-conscientious in details, and supervision of minor operations of college and farm took his attention from the basic problems of administration. Qualities that were helpful in his previous occupations thus became hindrances in this more responsible one. In contrast to his predecessor, he often was lacking in self-confidence and hesitant in making decisions on vital policies. In spite of good and charitable intentions, he was at times tactless in his dealings and conduct, and narrow in his social outlook.

In any case the new administration started auspiciously. Welch for the faculty gave cordial and felicitous welcome. With acceptable zeal, Chamberlain in the inaugural address on July 20, 1886, contrasted the narrow, outmoded old education with the liberal, progressive new brands of higher education. He sought to harmonize and stabilize internal relations by a substitution of "faculty" for "executive" government, and by a policy of fixity of tenure so long as service was reasonably satisfactory. To attain such a felicitous practice he gave the most careful attention to new selections. From his institute experience he could address farmers' audiences with ease and understanding. Early student impressions, before serious disciplinary cases had arisen, were generally favorable. Altogether the well-meaning executive could report, in July, 1887, "a year of uninterrupted good feeling between and among all the professors and students."

In an academic sphere at any time — and especially at a stage of such intra-mural uncertainty and extra-mural perturbation — such blessed relationships could not endure. Staff members were maladjusted and contentious; discipline

was felt in turn to be too severe or too lax; trustees were not always understanding; and funds for equipment and salaries were chronically inadequate. But the main complaint arose from dissatisfaction with the development of the "main branch" in a period of agricultural distress. Other achievements were of no avail if this one was not fully served. Despite all difficulties, such had been the faithful effort to this time, according to the best lights of those in authority, but opinions differed greatly as to what constituted real service.

Unlike some of the land-grant colleges, in Iowa the full program called for in the federal act with the most appropriate methods available had been provided from the begin-



This was a new building in 1883 — christened at that time Engineering Hall and so known until 1903. The sequence of name changes then went this way: Engineering Laboratory 1903–09; Structural and Hydraulics Laboratory 1909–18; Civil Engineering Laboratory 1918–33; Mechanics Laboratory 1934–48; Theoretical and Applied Mechanics Laboratory 1948–. Superimpose trees and shrubbery in the foreground and you have the building exterior as it continues in use at the Centennial.

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THE LAST OF THE TRIBUNES.

An Oration Delivered by a Member of the Junior Class.

In the history of every nation, in every age, there appear great luminaries at most that are, to the intellectual and political worlds, what the sun, moon and stars are to the physical—though known no more as *living* characters, yet their memories still glisten in the heavens, guiding men, directing nations.

Five centuries ago there rolled above the city of the Cæsars an orb, whose transcendant brilliancy outshone Petrarch, and bade fair to renovate Italy, yea, all Europe. In those days, when the Italian states, Florence, Venice and Milan, were rapidly advancing beyond the other States of Europe in art and civilization, Rome rather needed—no act, no law, no government, none of the features that ever grace an intelligent, free, peaceful and happy people! however, her sons gathered frequently, manifesting a desire for liberty, and, with enthusiastic demonstrations and desperate conflicts, sought to maintain the title their city had been given *pre-eminent* before, "The Metropolis of the world." The name of Tribune was known, but the office was filled by men appointed by the Pope, or elected by the nobles, never conceded to one unless he were of royal birth. Thus usurped were the powers of the common people, and they lived unprotected, driven hither and thither by a will which they had no voice in selecting.

Hovers in their fortresses, surrounded by robbers, hirelings of the great company, who only waited for the trumpet's signal blast to sheathe their swords in plebeian blood. They constituted the mighty governing arm that favored the rich, and oppressed the poor.

Rome's commerce had been lulled to sleep by the waters of a troubled sea; her mercantile houses closed; no business in her streets save the rabble of the mob, and the clanger of arms; and, as she stood in her approaching destruction, robed in the mantle of departed grandeur, she presented an inspiring, yet mournful, scene to a determined ambitious.

Such was Rome, when Rienzi wiped the blood of a brother fallen, by a knight's recreant spear, from his hands, and swore eternal vengeance upon the institutions of his native city, her barons, and all her crowned heads.—Never in the history of mankind did nobler aspirations and nobler purposes fill the soul of man than when he met in solemn conclave with his sturdy followers, and urged with a soul and eloquence which knew no bounds, a change in the affairs of state, or when he dared to mount the rostrum at the capitol, and plead for a reason, restoration and reformation; then boldly hurl the gage of defiance into the very teeth of baron and of knight. He it was, who, without regard to the fierce of an Ordsi or Colonna, and in the midst of robbers, traitors, tarquins and death, framed a model resolution for the world—"The tenth day from the mirror shall witness the restoration of Rome"—no condition expressed, no consignatory implied. From this men might learn of undaunted courage, an iron will, pure patriotism and strict fidelity to the interests of a people in whose cause he enlisted body and soul. Upon the eve of the tenth day, there streamed lights from the windows of a castle, whose walls had been deserted for more than fifty years; therein were seated conspirators, and Rienzi stood in their midst, taking the oath and sealing it with blood that dripped from his own right arm. Each of the one hundred warriors came forth, established a fealty with the laws of the compact, and sealed his vow sounding to the custom.—The clouds of night were fast gliding from the heavens, a few lingering stars still glimmered in the western sky, as through the streets of Rome there rode a solitary horseman winding his bugle. Quickly, as if Gabriel had sounded the trump, there sprang, from the haunts of the seven hills, twenty thousand Romans prepared to battle for the restoration of law, liberty, and Rome, and as many more, with equal quickness, issued from the strongholds of nobles, with armors of steel, flaunting banners, and fiery steeds, and gathered with the speed of the wind at the city limits, to bear down as easy prey their freedom-loving foe. The day passed by, hour upon hour the contest was fierce; sword to sword, and hand to hand; but ere the last beams of the sinking sun had gilded the waters of the Tiber, Rome was restored—her people free.

A frantic populace assembled round the capitol building, exclaiming their watchword, and their battle-cry, "Rienzi and the people." Thus, born in a day and carried upon the shoulders of plebeians to the Tribune seat, and possessed of the sceptre, he sanyed it with a will and wide wisdom. Once more could true Romans fan the fast smouldering embers of their fathers with strong hopes of returning to Rome the honor and the glory of her institutions now fallen.

For months there prevailed such harmony as Rome had not known for years, and had her people been willing to submit to a slight taxation, all would have continued as "mercy as a marriage bell," and instead of standing where she does today, among the nations of the earth, she might have stood queen of cities and queen of governments.

Rienzi, born in a day—like the bud that blooms in a single day, with the succeeding sun to fade away—he sat in power and state; but for a season, for it was an ever-ruling Providence that had fore-ordained the "Marengo of his triumph should be the Moscow of his defeat." Down, down he went, only to rise again.

After suffering the horrors of the dungeon for weeks, and the scoffs of the world for years, he was recovered Senator of Rome. Again he rode triumphantly in at her gates. Again were stilled the clash of ten thousand spears and the clang of ten thousand swords—Again did the clamor of ten thousand voices die away into one prolonged strain of harmony and unity, that rose louder and higher until each of the seven hills gave back an echo of welcome to Rienzi, restorer of Rome. The banquet hall was spread, and peers sang to his same from rosy morn till dusky evening and matron, knight and dosper, ate of the feast and joined in song.—But, alas! too soon these days passed by: traitors lurked beneath the cloak of fidelity and friendship; the Senator was in danger, yet he knew it not. Perfected not.

Time rolled on. The light of the fatal day broke from the chambers of the East, no sound was heard in the streets no martial array or war-horse trend was seen or heard; unusual stillness brooded o'er, but only an instant; for there upross a host of glistening swords and gleaming helmets borne by traitors to the Senator, traitors who, like hounds upon the deer's track, were bent upon blood. His friends cried "fled" but that determination of mind which had previously led to the restoration of Rome would not yield, for well did he imagine that with his flight, or his death, down would go Rome, Italy, liberty, justice, and civilization into the depths from which he had rescued them. Not eloquence, or mercy, could stay the fury of the mob. "Down with the traitor to the people" was the cry, and he fell bled to the heart by the dagger of an early friend and a later foe. There, he wound his way through battle, and through battle smoke, to his own funeral pyre, and the bronze Lion of Basilk that had kept constant vigil over the seven-billed diadem of Italy for centuries, and smiled at the glories of Rienzi, as he first entered the forum of justice, now saddened at the death of Rome's last Tribune; for with this champion of freedom, all that was noble, and much that was ignoble, found a grave. The golden horn was broken, the laurels ceased to bloom, but a soul flashed like a meteor into the heavens to shine on, and still on, until that grand constellation of memories, defenders of liberty and law, shall be lost, in all nations, through the mists of space forever and forever.

The Harvard Freshman class numbers 107.

JUNIOR EXHIBITION.

Synopsis of Exercises.

Friday evenings, the 16th and 23d ult., being so fortunate as to be present at the exhibitions of the Junior class of our College, we present our friends and readers a brief synopsis of the interesting proceedings.

The class, numbering twenty-six, earnest and wide-awake students, is divided into three divisions, so that each portion comes on for stage exercises every three weeks, and has the interval to collect, arrange and consult their thoughts upon subjects as diversified as the ingenious brains of Young America can invent.

SECTION FIRST.

The exercises were opened by an anthem from the college choir; after which C. B. Boardman delivered an oration. Subject: "A Neglected Science." Mr. Boardman proceeded, in quite an entertaining way, to prove that the art or method of accumulation, was too little considered by young people at the present day, and that experience, from this neglect, was often purchased at a very dear rate in after years. Ninety-seven per cent of our business failures, were attributed in his estimation, to the lack of scientific instruction in this particular. All could not become rich, but the masses might greatly better their condition and place themselves in higher positions of usefulness.

"Lessons from the Past," H. G. Dungan told us how these might be made of great service, in stimulating us to high motives for noble action. Startling facts were often revealed, and the loftiest enthusiasm awakened by the contemplation of the doings of others. As was very natural, Mr. D. paid glowing tribute to the heroic struggles and self-sacrifices of Washington, the father of our country; to Franklin as being the great philosopher of modern times; and to Daniel Webster, the eminent statesman and constitutional expounder. He graphically portrayed, the contrast existing between prosperous Germany and humiliated and impoverished France. Thought our nation might well copy the virtues of the one and shun the vices of the other.

"Scientifically, the True Mode of Reasoning." From this topic, S. Y. Yates gave us a very interesting and well-constructed speech. In his estimation, originality should stamp itself upon the actions of every true thinker, and in the attainment of true scholarship, the student should subject all things to a close and scrutinizing course of reasoning, which should at only develop the powers of the mind, but drop in true perspective the theories of modern inventions. Too many give the investigations of science, a superficial glance and then hastily accept or reject its conclusions, as the popular will may

The most pretentious enterprise of the literary students in the early days of the College was publication of the first issue of the **Aurora** in June, 1873. Under a board of student editors headed by Millikan Stalker, the paper had a small amount of college news but was mainly literary. Some of the articles were by members of the faculty.

ning. However elemental and incomplete the subject matter and deficient the instruction, the distinctive objectives were recognized and striven for. In the pioneer years there was much of trial and error in making curricula and adapting methods. The initial subjects were embraced in two curricula, agriculture and mechanic arts — which included civil and mechanical engineering. The subjects were identical during the first year and a half. In addition to the basic sciences and mathematics, rhetoric, English literature, some social science or history, and philosophy were required, and Latin or a modern language was an elective. The second year a ladies' course in normal instruction — soon changed to a course in general science for ladies — was provided. It is evident that before the technical divisions were developed in their main branches, the new education drew very largely from the old.

During the first two decades there was confusing designation of courses and heads. Curricula were at first termed "departments." In a general revision, in 1877, the main courses of study were grouped into "special faculties" with a chairman over each. From 1879 to 1886 the term "school" was substituted for department, and the heads were listed in the course description as "deans," apparently informally as the dignity was not conferred in appointment or in the listing of the staff. In 1877 the various curricula were sciences related to agriculture, civil and mechanical engineering, the ladies' course in science, course for juniors and seniors in special industrial sciences, post graduate study, and the preparatory course. Veterinary science was added in 1879 as a separate curriculum and school. A blanket curriculum in "sciences related to the industries" during the period 1880–1888 sought to meet the needs — general and special — outside the technical groups.

As in all early "agricultural colleges," the title role subject was the most retarded in subject matter, staff, and equipment. Townshend was called back to Ohio before he could organize his department and thus the I. A. C. started without an agricultural teacher of any grade. The Honorable Hugh Thompson, after continual feuding with board and steward, resigned as farm superintendent in 1870 and a trustee from Jefferson County secured a young neighboring farmer, Isaac P. Roberts, to take the place. Roberts, a native of western New York, after a thorough basic education in an academy, had engaged successfully in school teaching, carpentry, and farming. Noting the young man's skill in operating and managing the farm, Welch drafted him to lecture in general agriculture. In a situation where he had to develop his own methods and materials and draw largely upon his own practical experiences, Roberts made a more appealing teacher of country boys than a doctor from Giessen, Edinburgh, or the Sheffield School probably would.

But his service was brief. Following the rift of '73 he welcomed the opportunity to rescue and promote the agricultural work at Cornell. An able and versatile 32-year-old graduate, Millikan Stalker, '73, took over the management of the farm and gave instruction for a time, but his main interest proved to be in the veterinary branch with which his life career was to be associated.

For one year, 1876, George E. Morrow, an able farmer and agricultural scientist who had been trained as a lawyer, gave the department a temporary revival. But at the end of the fall term the Illinois Industrial University offered superior financial and living inducements. From 1876 to 1879 the work offered was termed more accurately "sciences related to agriculture."

In an attempt to meet the mounting criticism, a man of

An early structure was the Veterinary Clinic built in 1885. After the Veterinary Quadrangle was built in 1912, this structure served as storage for the department of buildings and grounds. It was torn down in 1927 when the Memorial Union was built.

scholarly training with practical experience in farming and agricultural journalism was secured in 1879. Seaman A. Knapp, a native of northern New York, had graduated with high honors at Union College. He then conducted female seminaries in the East until failing health caused his removal to Benton County, Iowa, where he had gained public notice as a stock raiser, speaker, and writer on practical farm topics. At the College he reorganized the course in "practical agriculture," and extended it to include dairying. His son, Herman Knapp, '83, gave the dairy instruction —

This was the view looking southeast from Main Building in 1888 — the approximate vantage point a visitor at the Centennial might also assume looking southeast from Beardshear Hall. The tree in lower left center foreground is the one in the mid-1950's being used annually for the Christmas tree lighting ceremony. Buildings at the right are the Veterinary Clinic Building and the Sanitary Hall on the approximate site of Memorial Union. The building in the center is South Hall and the house on the left is Osborn Cottage, at the Centennial being occupied by the business manager. The Campanile would be located slightly beyond the cluster of students shown in the picture.

the beginning of his lifetime service to the College. The more distinctive B.S.A. was awarded. Upon the resignation of the elder Knapp in 1886 to enter upon his spectacular career in southern agricultural improvement, the son continued the work of the department for a short time. However, his main interest was in the business side of the College, to which he soon gave full attention.

Chamberlain, with his considerable reputation, was asked by the board to join agricultural instruction to the presidency but declined frankly as not competent for the task. He consented, however, to add lectures on practical

agriculture to his professorship in philosophy. He sought to give standing to the main branch of instruction and win favor with the farmers by securing Edward M. Shelton, who had made a high reputation with Kansas farmers. But his financial inducements were not adequate. Instead he secured a young man from New York, Loren P. Smith, under whom the work was merged in the hybrid, "science and agriculture."

The earliest agricultural subject to be organized in a separate department was horticulture. Following Mathews' academically unfruitful beginnings and a three year trial of another practical fruit grower, the subject was brought to professional status in 1877 with the coming of the competent and energetic Joseph L. Budd. A native of eastern New York where he had been associated with the noted Charles Downing, he studied at a state normal school and Union College. After a period of academy teaching he became a proprietor of nurseries and orchards in Benton County. He was a founder and for many years the secretary of the Iowa State Horticultural Society. His two decades of service were to bring the department to national recognition.

As a leading stock raising state, Iowa appropriately pioneered in veterinary science. For the fall term of 1872 the German veterinarian, Henry J. Ditmers, gave lectures to the senior class in anatomy, physiology, and pathology. The course influenced Millikan Stalker to enter the profession. After securing a V. S. by a year's study at the Toronto and New York Veterinary colleges, he gave a survey course in the "study and practice of veterinary science." In 1879 a two-year degree course was authorized — the first in a state institution. Until 1883 the B.V.M. was conferred as a first

degree with a D.V.M. for students with a B.S. From that time the single D.V.M. was given. In 1887 the course was extended to three years. With the establishment of a separate school Dr. David S. Fairchild, the college physician, shared the lectures with Stalker until the early nineties.

► LOSE MEN TO OUTSIDE

Mechanic arts, the second main division of land-grant education, came earlier to standardization and specialization including all existing branches of engineering. Factories, mines, and railroads were creating demands for experts which the technical institutes were seeking to supply. The unusual and steadily growing opportunities made it especially difficult to attract and keep qualified teachers. During the first two decades the College had a succession of able young men but could not long hold them from the inducements of larger institutions, government service, and especially industrial employment. George W. Jones had civil engineering and architecture added to his professorship of mathematics. He was followed by Albert H. Porter, a graduate of the Thayer School of Dartmouth who had served in the U.S. coast survey. On his retirement two years later the civil engineering was separated from mathematics under Forest E. L. Beal, a product of Massachusetts Institute of Technology who came from teaching at the Naval Academy. His main interests were in zoology and he transferred to that department in 1880. Charles F. Mount, '78, aged twenty-two, carried on the next decade.

When William A. Anthony retired from physics and mechanics in 1872, he was succeeded by Alexander Thomson, a graduate of the University of Michigan, until 1884 when he turned to industrial work. His successor was Nor-

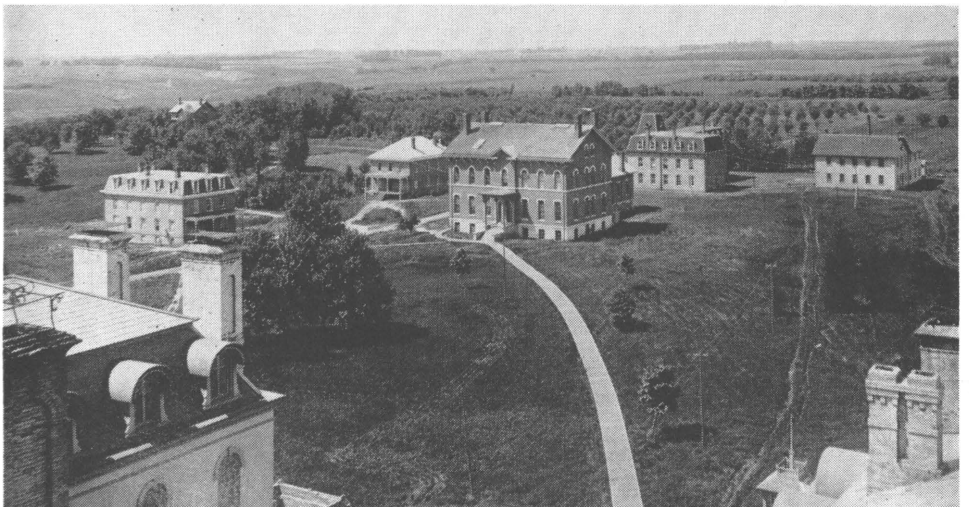
man C. Bassett, of the Worcester Polytechnic Institute. After a couple of years in the classroom, he gladly exchanged the campus for the factory. An able and sprightly young man, C. W. Scribner, of the publishing family and an honor man at Princeton and Stevens Institute, served out the decade.

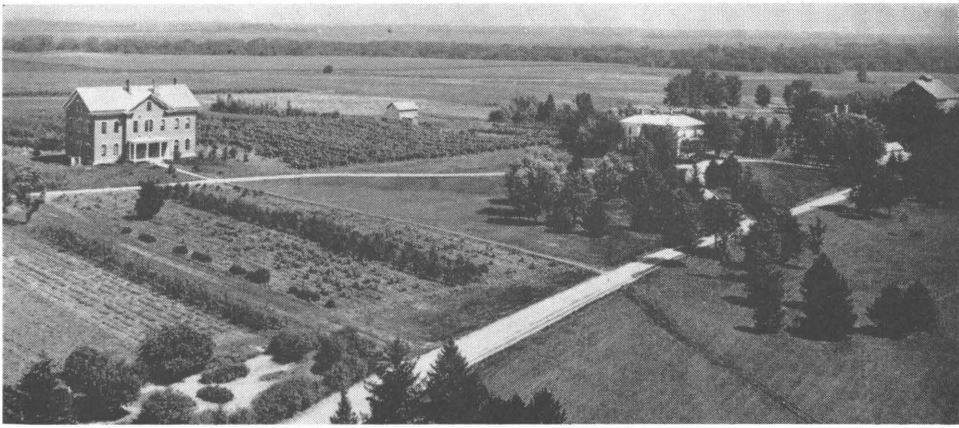
Courses in mining engineering and in architecture were offered as variants in the senior year of the mechanical program.

To 1878 the B.S. was awarded in the engineering departments, after which the more distinctive B.C.E. and B.M.E. were introduced and made retroactive for earlier graduates if desired. C.E. and M.E. were granted as higher professional degrees.

Military tactics, the remaining specified requirement, was organized and conducted by the soldierly General Geddes according to the full spirit of the law in a department of "military tactics and engineering." Following the political

View of the west campus, taken from the roof of the Main Building in 1888. The sidewalk leads to Chemical and Physical Hall. In the rear stands old Engineering Hall (at the Centennial still being used as Theoretical and Applied Mechanics Laboratory), and beside it the old shops building. To the south of Chemical Hall are the Boarding Cottages. East Cottage was used as training quarters for the football team from 1901 until 1907 when it was torn down. West Cottage was later used by the college hospital and torn down in 1934. In the trees the Marston house is visible. At the Centennial it was almost engulfed by Friley and Helser Halls.





North Hall — the first agricultural hall — was built in 1880. When Margaret Hall was built, North Hall was joined to it and became an annex. It stood approximately on the site of the wing of Home Economics Hall on which construction was begun in 1957. North Hall was torn down in 1926 when the Home Economics Building of that time was enlarged. Plainly visible in the photograph are grapevines to the east of North Hall which also were plainly visible and a temptation to students — a temptation which wasn't always resisted!

The dwelling on the right belonged to Professor Budd in Horticulture and is the site of Botany Hall. The building almost completely hidden in the trees was Experiment Station Building. At the Centennial it was still standing, as Isabel Bevier House west of the Genetics Building.

removal of Geddes in 1883, General James Rush Lincoln began a notable career that continued through World War I. The elaborate succession of courses extended throughout the four years. In this phase of co-education, women were trained in voluntary companies.

The distinctive course for women was in domestic economy. Before the arrival at professional status, this had the highly useful function of training for the practical duties of the household. Such training was regarded as an essential objective of the new education. The Mt. Holyoke system of student work — rotating the tasks of kitchen, dining room, and laundry — was adopted at the beginning. Some informal instruction by the housekeeper and talks by Mrs.

Welch were given. From 1877 the latter taught regular classes in domestic economy to the junior women. The courses included cooking, sewing, household management, and child care. Mrs. Welch was a graduate of the pioneer seminary at Elmira, New York, and in special preparation for this work attended schools of cookery in the East and the London school for the training of maids. Her avowed aims were to improve dietary standards and living conditions in the state by training alert homemakers.

Following Mrs. Welch's retirement in 1884, Mrs. Emma P. Ewing, a rather noted public lecturer and author, conducted an ambitious program for the next four years. A separate school with a two year course was organized. Her aspirations then led her to raise the work to graduate level, but following the graduating of two advanced students, the promotive professor responded to a call from Purdue.

The work returned to more modest status in the general science course for women. It was taught during the following transitional years by Mrs. Eliza Owens, a graduate of Ripley College in Vermont who had prepared to teach music and literature but proved highly adaptable in the new applied subject.

The best organized and most skillfully taught subjects and those upon which the technical were formulated were the general sciences. Mathematics became a separate department in 1876 in charge of Edgar W. Stanton, who had been on the staff since his graduation in 1872. His lifelong service to the College as teacher and administrator was matched only by that of Herman Knapp, whose teaching experience was brief. Stanton was born in Wayne County, Pennsylvania, in a farming and lumbering community. His preliminary education was in the academy headed by Profes-

sor Jones whom he followed to the Iowa Agricultural College and with whom he lived as a student.

In chemistry, Dr. Foote was followed by another M.D. — E. R. Hutchins for two years. Thomas E. Pope, trained in Harvard and M.I.T., in his eight-year tenure laid the foundations of the modern key department. When Pope was called back to M.I.T. in 1884, Launcelot W. Andrews, of Yale and German university study, filled in for part of a year before he was lured away to Iowa City. From this point Alfred A. Bennett, a University of Michigan product, conducted the expanding department to the eve of the world war era.

Through the formative years for the subject as for the College, the evolving department of physics was guided by

A touch of the picturesque was afforded in the early years of Iowa State College by groups such as these "lady officers," of 1894. Carrie Chapman Catt, '80 — helped organize the Ladies Military Company G, standing for Girls, in 1878. There were two ladies' companies, Company G and Company L. They were disbanded in 1897. Shown from left to right: Ethel Rundall, Florence Baker, Anna Georgen, Annie Fleming, C. Pearl "Tot" Bigelow, Lillian Mills, Bertha Mosier.

two young alumni, both of whom, curiously, were to become successful lawyers – John K. Macomber, '72, to 1883, and Julius C. Hainer, '78, to 1891.

The youthful but resourceful Bessey laid firm foundations for the natural sciences. Through the seventies zoology and entomology were added to his main botanical interest. For the years 1880–1883, Beal was in charge of zoology, with the entomology assigned to a recent graduate who was to become one of the College's greatest scientists, Herbert Osborn, '79. With the forced retirement of Beal in 1883, zoology was again combined with botany but with Osborn in charge. Two years later when Bessey was called to the University of Nebraska, Osborn was put in charge of a department of zoology, entomology, and geology. Until 1889, botany was taught by the able teacher and scientist Byron D. Halsted, a graduate of Michigan A. C. and an Sc. D. (in course) of Harvard. He left to seek wider research opportunities at Rutgers.

To carry on the work in botany in line with the high standards Halsted had set, Osborn with unerring judgment persuaded Chamberlain to take a young, untried student who was still in the midst of his graduate study. Louis Herman Pammel, the lone graduate in agriculture in his class of '85 at Wisconsin, became increasingly interested in the plant area of his course. After study with Farlow at Harvard and with Trealease at the Shaw School in St. Louis, he came to his new responsibilities and opportunities with all the illusive expectations of an enthusiastic research neophite. In spite of the disillusionments of teaching poorly prepared undergraduates, the limitations in time and equipment for research, and the seemingly unsympathetic attitude of the administration, he held to a belief in the importance

This Botany class from the last decade of the nineteenth century shows approximately 80 students on hand for a discussion on second floor of North Hall. By the Centennial, classes "ideally" were being restricted to smaller numbers — with more sections — and were averaging 40 students per section in botany.

of his work for the state. Not only did he promote the development of his department in its main areas but he gave the initial impetus to another department by pioneer lectures in bacteriology.

While the "other scientific and classical studies" not directly related to agriculture and mechanic arts were not excluded, their place in the formative years was strictly subordinated as fillers or supplementers to the main program. Training for citizenship, in theory at least, was generally recognized as a legitimate objective, but neither the end nor means was sufficiently definite to justify a "school" or even a minor professorship.

All of the presidents to the present century, except Hunt, had regular professorships to which were added stray subjects which could not be elsewhere assigned. Their subjects, as traditionally in private colleges, were philosophy and psychology and various of the social sciences. Stanton

had economic science attached to his mathematics department. History was generally joined to chairs of English literature and Latin or modern languages. The ablest and by far the most inspiring of such professors were Wynn and Arthur C. Barrows, whom Chamberlain, in his most felicitous appointment, had secured from Oberlin. Such subjects as modern languge, elocution, and music were usually assigned to the preceptress or to other part-time positions.

Compulsory manual labor, as in other early land-grant colleges, was a regular feature of the program. This had been a fixed tenet with the practical industrialists and full compliance with the system was regarded as a test of the true agricultural college. In spite of the early failure of the system in private colleges and academies, the practice was decreed in the Iowa founding act. Scientists, more concerned with training superior students than with attracting large numbers whose skill and business competence might be more or less improved, were always skeptical. In any case the system was given a serious trial and in the early days, when campus and farm as well as methods of instruction, were in the rudimentary stage and before athletic activities had evolved, it operated fairly well. But as elemental conditions in plant, program, and living gave way to the more stabilized and sophisticated, this feature of land-grant education proved to be inappropriate and too demanding upon time and energy. In the early eighties the requirement was confined to the freshman year, and in the reinterpretation of functions by the act of 1884 it was abandoned.

One of the constructive influences in discontinuing the usually unskilled labor was the growth of "instructive labor" on the farm, and in the shops and laboratories. In this distinctive and essential characteristic of the new education,

the College had been in the vanguard. Roberts' pioneer ventures in the study of plants and animals as related in his *Autobiography,* involved largely the direct study of "materials at hand" and comparative observations of methods and management. Then as later, in his famous club work, Knapp was a zealous exponent of demonstration by direct participation. The college creamery, for example, served for both instructional and experimental purposes. Transit, chain, forge, and lathe occupied much of the engineer's time. General science instruction centered in the laboratory. In spite of limited apparatus the early chemical professors established laboratory methods that gained professional recognition. Bessey founded the first undergraduate botanical laboratory in the country. Mrs. Welch, not to be outdone by the established subjects, developed "the first experimental kitchen ever opened in any college."

The humanities were not backward in subject emphasis and method. Welch anticipated current trends by courses in the history of civilization and the history and philosophy of science. Wynn sought to engage his students in philological controversy as well as in literary criticism. Barrows organized an advanced history class into a seminar. Both Welch and Barrows used syllabi. Long before publisher competition and production economies had stimulated such ventures, a number of the staff provided manuals of their subjects. In line with a pedagogical vogue of the eighties, Welch sought to interest the faculty in the superior teaching effectiveness of the "topical method" – apparently with little success among such varied subject interests.

The emphasis upon good teaching which has persisted was started in the early years. In spite of burdensome schedules, wearisome routine duties, and inadequate equip-

ment, there were even some superior masters of the art along with prevailing competent teaching. By all opinions of admirers and opponents, Stanton was a skillful and impressive teacher. One of his most distinguished pupils, the philosopher William E. Hocking, paid this rare tribute in a discussion of a rural life philosophy in the *Yearbook of Agriculture* for 1940: "He was a great teacher of his subjects; but he was an even greater teacher of the morals of the day's work." As demonstrated in their early promise at the College and by matured achievement elsewhere, Bessey, Osborn, Knapp, Pope, and Barrows clearly belonged in the *magna* group. Welch, whatever the subject — and his interests were too diffused for concentration, made a clear organization and logical presentation.

With a rare few, as always, a commendable degree of original research was carried on with a full load of teaching. Aside from textbooks and popular articles, Bessey, Osborn, and Pammel made preliminary approaches to their life-time research. Early experimentation by Roberts, Knapp, Halsted and others antedated the establishment of the Iowa Agricultural Experiment Station in 1888 under the directorship of Robert P. Speer, a farmer and later member of the board.

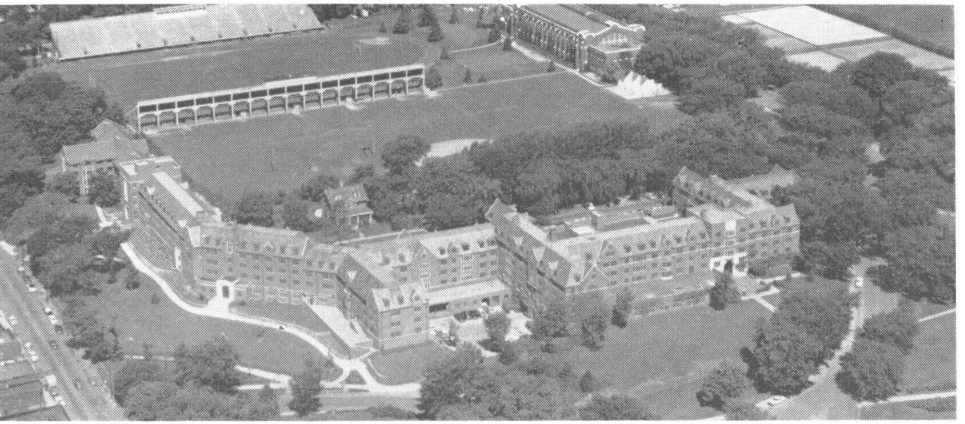
However, service to the state had been rendered from earliest days. With the aid of other staff members, Welch and Roberts conducted farmers institutes in 1870. When the work was established more permanently, in 1887, Chamberlain was a leading organizer. Staff members were active participants in the state agricultural and horticultural societies and in state and local fairs. They were no less prominent in the programs of the Iowa Academy of Science.

During Welch's administration — as a means of bringing

The Creamery was built in 1892 on the site of Agricultural Annex. It was torn down when the Dairy Building, later called Agricultural Annex, was built in 1906. The second story was used as a men's dormitory and accommodated 50 students.

information to the rural constituency and giving an understanding of the program and aims of the College — journals dealing with farm and household problems were published. The *Progressive Farmer* of Cedar Rapids was purchased by Welch who conducted it largely as an organ of the College (January, 1875–August, 1876). The following November the *Producer* was founded to report the findings of the College on all matters of general interest. It suspended after ten issues, with the sale of the subscription list to a farm paper to which the editorial staff became contributors. The *College Quarterly* had a somewhat longer run (May, 1878–November, 1880).

State contacts were curtailed by transportation limitations. Especially during the winter and early spring they made the campus quite isolated. A limited hack service was the only means of conveyance from city to college. The few campus houses were always in great demand. This condition of insulation had a determining effect upon early student life and ways.



At the Centennial, dormitory accommodations under a single roof were being afforded to 1,420 students in Friley-Hughes Hall alone. It has two dining rooms and feeds 2,400 students from four cafeteria lines.

Student living during the first two decades was characterized by simplicity and democracy. Going to college brought little change except as outlook was broadened and aspirations stimulated by intimate contact with intellectually trained and more or less wordly wise professors. Expenditures were kept to the minimum. A considerable portion could be earned by the required labor and the rest made up by employment in the long winter vacation, usually in teaching country schools. Housing and food were plain but satisfactory, according to the prevailing standards of the time.

Moral standards and religious practices were much the same as in other colleges. Certain advanced innovations were due largely to the far-sightedness of Welch. A system of student government was instituted by which offenders, apprehended by student proctors, were tried by student courts. Decisions were subject to review by the faculty, with final appeal to a judicial committee. Penalties were

a series of demerits which on reaching fifteen brought suspension. Another enlightened innovation in force during the 1880's was a contract between entering students and the faculty — represented by the president — providing a mutual recognition of responsibilities and obligations. Opinions at the time and later by alumni have conflicted greatly as to the justice and effectiveness of the system — termed everything from a means of substantial justice to unfair espionage and favoritism. The main difficulty was that of all such systems — the unwillingness of the majority of students to assume full responsibility for the enforcement of the regulations.

Activities in these years were largely of an intellectual nature. Literary societies were organized from the beginning, with participation in writing, oratory, debating, and parliamentary procedure. Such practice gave training for required public exercises such as the junior exhibition and commencement.

The most permanent enterprise of the societies was the publication of a monthly student paper, the *Aurora,* in June, 1873. The publication was more in the nature of a magazine than a newspaper. While there were limited news items, the periodical was filled largely with the better productions of the societies and exhibitions, along with occasional contributions by faculty members. The students of the main departments had their organizations. The most subject-consciousness was that of agricultural and horticultural students who issued their own paper, the *Students' Farm Journal,* from 1884 to 1887. Of general interest were lecture courses, glee clubs, and a college band. Athletics before the nineties were most informal and local. As previously noted, manual labor in addition to the military drill left little time or energy for organized sports.

Organized social activities were also in the embryo stage. The major event, the sedate "junior trot," was a long cry from the glamorous prom. A small group essayed Greek letter societies and one fraternity and two sororities were organized. Welch and Chamberlain were in sympathy with such organizations but the prevailing student sentiment was strongly opposed to exclusive minority groups. Chamberlain's failure to take more positive action in the resulting conflicts led to concerted student disaffection which contributed directly to his resignation.

As in all educational institutions, the ultimate test of achievement at any stage was in the careers of its students. By 1878 alumni consciousness brought organization, due in large part to the efforts of Stanton. He remained a guiding spirit throughout his life. With the growth in numbers and prominence of its members, the organization as a group and by its individuals came to have an increasing influence upon college policies.

A survey of the graduates of the first twenty classes, so far as available, indicates a wide geographical distribution and a varied range of occupations. Business of all sorts led with 73, followed by law, 66; engineering and architecture, 60; college professors and research scientists, 44; veterinarians, 44; public school teachers and administrators, 41; farmers, of all branches, 36; physicians, 33; journalists and publishers, 18; clergymen, 6; missionaries, 2; nurses, 2; dentists, 1. Nongraduates sampled followed the same general proportions. The classification is based upon the main, longest-continuing occupation. A considerable number taught for a time before entering upon their chosen field, and teachers and others often retired to farms later in life. Law and business were frequently joined and both were more often than not concerned with land holding.

However integrated the occupations, it is evident that in this College the industrial classes had spread over most of the "several pursuits and professions of life." Throughout the early plans and discussions of industrial education it was assumed that those desiring training in the learned professions, more especially law, would not be interested in this type of education; that in fact it had little for them. But that profession ranked near the top of the early graduates. The founders had been building better and broader than they realized.

In the matter of public leadership the showing of early years exceeded the expectations of the most confident champions. In his address at the opening ceremonies, Gue — in his zeal for the occasion — had ventured the prediction, "We may not live to see the day, but the time will surely come in which the graduates of the Iowa Agricultural College will be found among the most eminent men and women that our State or the country will produce." Already the College's students had numbered future governors of three states, at least two members of Congress, and many others who would hold prominent positions in state and federal service. No less or even more eminent were to be leaders in science, industry, and education.

Whatever certain individuals and interests might think of their Agricultural College and Farm, the evidence was positive that it was training experts and leaders and steadily inaugurating direct services for the agriculture and industry of the state and nation. If the program was not moving fast enough to suit some or if the president and his staff did not have the answers ready at hand for a most troublous time, that was something else.

Chapter 3

Reconciling Liberal and Practical

THE VERY REAL ATTAINMENTS of land-grant education in Iowa during the first two decades — in training useful and in some cases distinguished scientists, teachers, business and professional men, and public officials — in the views of a depressed farmer constituency seemed but a travesty on the true mission of an "agricultural college." Bankers, lawyers, and industrialists generally were regarded as parasitic, so why train more of them? The increasing enrollment in engineering, which would have been welcomed in an industrial state, was regarded as a disproportioned emphasis upon a subordinate interest.

Unquestionably the instruction in the title role subject had been disappointing — here as elsewhere. Following the resignation of Seaman Knapp in 1886, there had been no adequate instruction in the main branches of the profession. Chamberlain's practical lectures to students and farmers based upon his experiences in Ohio did not take

well in Iowa. His young eastern professor, Loren Smith, was not familiar with prairie practices and seemed unsympathetic to the practical. His course in "science and agriculture" was regarded as a subterfuge. It was felt advantage had been taken of the Sutton Act to change the farmers' college into an old-line "classical" institution. In the late eighties there was but one student taking a straight agricultural course of study.

As noted, the immediate occasion of Chamberlain's resignation was campus unrest, involving among other disturbances his dealing with fraternity disorder. Basically the opposition of organized farmers was the determining influence. At the same time Smith, Mount, and six other staff members resigned.

Chamberlain's four-year term, while disappointing to himself and to his supporters, was not lacking in conscientious service. In a time of unrest he had in the main held together a competent faculty and kept the program on an even keel. In more settled times he might have prolonged his administration with a fair degree of success. But the situation demanded unusually strong and inspiring leadership. Plant, organization, and curriculum were becoming outgrown and the full and balanced land-grant program was being challenged. Such urgent problems called for an executive of unusual vision and personal appeal, to campus and state.

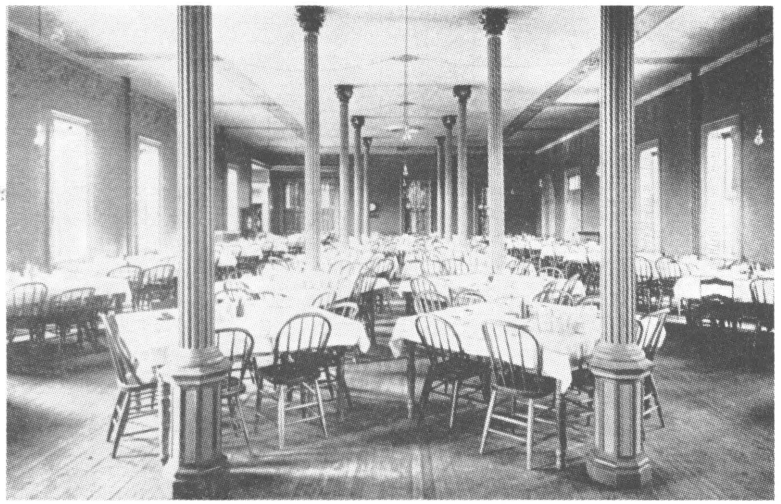
Pending the search for such a leader, Stanton was named for the first of his *ad interim* services. The confidence of the trustees in his judgment, which was to increase through the years, was shown in a request for his opinion regarding administrative functions and relations. He responded curtly and to the point that the best guide was in the law itself. The College had been going steadily forward and

Acting President E. W. Stanton served from November 13, 1890, to February 1, 1891, when President Chamberlain resigned. He served again from August 6, 1902, to August 31, 1903, after the death of President Beardshear. He served from September 1, 1910, when President Storms resigned, to August 31, 1912. He served again for the fourth and last time from April 20, 1917, to November 21, 1918, while President Pearson was in Washington, D.C.

the immediate need was to follow positive unified rather than negative divisive policies. Unhappily the spirit of the time tended toward overturning and replacing — a trend not well adapted to balanced construction.

The opposition was spearheaded by the Alliance and the leading commodity cooperatives, as that of the seventies had been by the Grange. The main organ in both cases was the *Homestead,* now under the editorship of Henry Wallace. His ally, James Wilson, in addresses at farm gatherings and in his page in weekly papers had long denounced and ridiculed the pretensions to practical agriculture at Ames. The crowning affront was held to be the action of the board at its 1890 fall meeting in utilizing professors of the leading departments for experiment station work rather than employing a separate staff. The vacating of the key positions opened the way for the new deal sought.

As related in the recollections of Henry Wallace, plans



College meals for students were served in these surroundings, known as "Andersonville" — the term bestowed on the dining room in the basement of Main Building at the time of this picture, 1894. It was so called by the students because C. V. Anderson was steward.

were carefully laid and the stage set for remaking the College according to the practical pattern. The opposition group found sympathizers among the trustees. A committee of Alliance men met with the board in November, 1890, to acquaint the members with their general desires. In December at the meeting of the stock breeders association, under the management of Wallace and Wilson, open challenge was given in resolutions demanding "a distinctly agricultural and mechanical course in which no place will be found for purely academic and scientific subjects," the establishment of a special dairy school, and an experiment station as a "distinct department for the benefit of farmers, incidentally of students." This farmer-centered system of instruction and research was to be implemented by a president and professor of agriculture in full accord with its objectives.

Finally a specific bill of grievances and a corrective plan of action was drawn up by a joint committee of the Alliance and the leading producers associations the day before the January meeting of the board. The resolutions were endorsed by the organizations represented and a few days later by the State Agricultural Society. The accusers purported to find "the higher mathematics, ancient and modern languages, and other studies which are at most permissive under the law, occupying the time and attention of the

At the Centennial, Linden Hall dining room was typical of those in operation by the College. This unit, although located in a women's dormitory, served both men and women and had a seating capacity of 525. Breakfast and lunch were served cafeteria style, but for dinner there was table service. Linden Hall was completed in 1957 with a normal occupancy of 373, at an approximate cost of $2,000,000.

student to the almost entire exclusion of studies that by the same law are made one of the chief objects for which the college received its munificent endowment."

To restore the proper balance, according to their notion of land-grant education, the agrarian spokesmen would have gone to the extreme of practical vocationalism. Their demand was that in addition to the regular degree course in agriculture, a two-year strictly professional course, a three-month winter course — open to anyone regardless of age or preparation, and a special dairy school be provided. Furthermore, as a negative safeguard, quite oblivious of the redefining act of 1884 under which the College was functioning, these proponents would exclude "all scientific and classical studies that are not absolutely necessary to the successful pursuit and highest attainment of a practical agricultural, mechanical, and business education, not only from the course but from all the courses, and make the college distinctly industrial and agricultural."

Equally important for the new look was a president and faculty who were "understanding and sympathetic" to the Alliance and kindred programs. This extreme vocational and provincial consciousness was expressed in a letter to the board from an impatient agitator contending that the College should be strictly an institution for Iowa farmers "managed by Iowa men — from the president down to the janitor — men whose every interest is in Iowa, and who are thoroughly imbued with the spirit of progress now extant in this state; men who have a greater interest in the institution than simply drawing their salary." Prompted by this proposal, several non-academic farmers actually offered their services as "professor of practical agriculture."

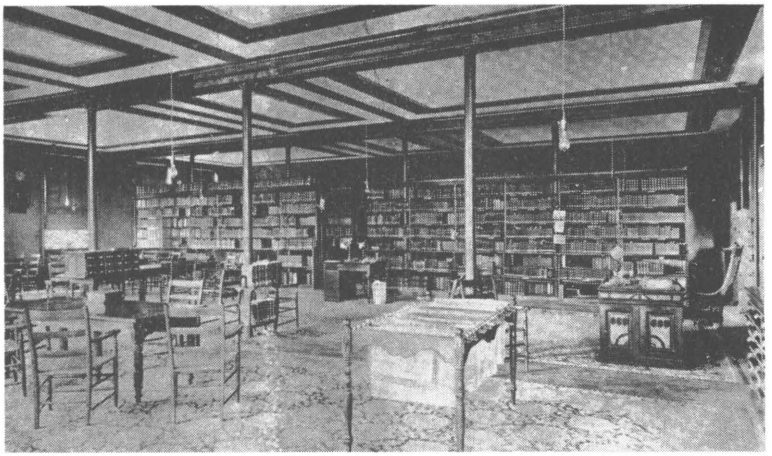
As a rebuke to the reported alumni support of Stanton,

President William M. Beardshear served as president from February 1, 1891, until his death August 5, 1902.

the committee deprecated the suggestion of the selection of any staff member or alumnus not "thoroughly imbued with the farm spirit" and who would countenance the design of certain alumni to divert the funds of an industrial college to promote a "general university."

On the contrary the position called for a man who had demonstrated high ability in educational administration and who was fully in accord with the aims of the committee. Providentially, such a man for the time and place was at hand in the person of the superintendent of the West Des Moines school district, the Rev. William M. Beardshear.

No less essential was a successful operating farmer to head the key department. Again fate aided a good selection in a true son of the soil who combined success in stock-



These were the facilities of the library when it was housed in Morrill Hall — from 1891 until 1913. This photograph was taken in 1894. From the beginning of the College until 1891 the library was housed in the Main Building. From 1913 until 1925, the library was in Beardshear Hall. Since 1925 it has been in its own building.

raising with ability to impart his experiences in a popular manner. Additionally, and by no means least, he was a clever politician — the canny James Wilson. (Henry Wallace in his memoirs modestly confesses that he was the first choice, but skillfully maneuvered his friend into it.)

In essentials the board bowed to the will of the organized groups who spoke for the farmers and thus for the dominant public opinion. After brief interviews, the dictated candidates were elected. By a majority of one, Speer was replaced as director of the station by Wilson — an early precedent for combining teaching and research. In the matter of the staff of the station, the board still was convinced that the combination of teaching and research was preferable and respectfully asked for a longer trial. As to subject emphasis, the customers were indubitably right. The plea in abatement that the trustees had not been aware

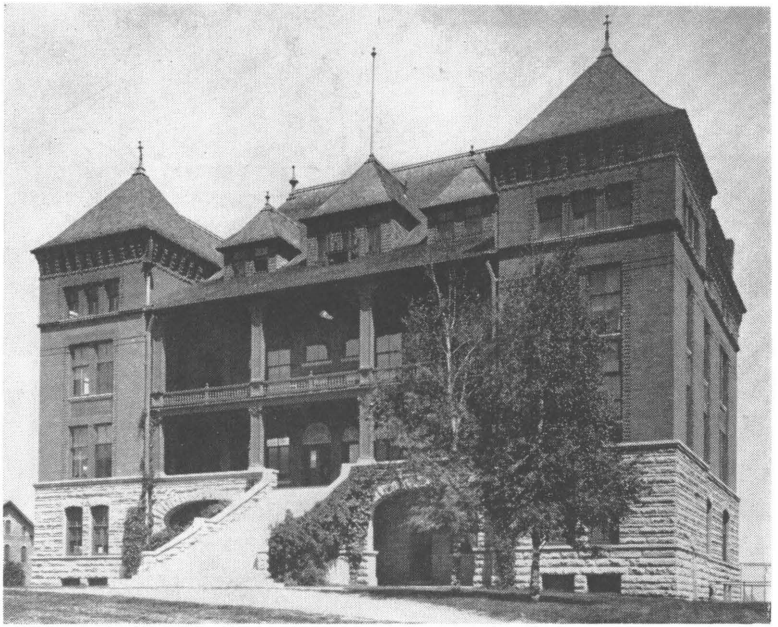
of the change in the course in agriculture before it was printed in the catalogue was more a confession of negligence. In reply to the reflections on Stanton and other prominent alumni, the spokesmen, purporting to represent both factions, made their one corrective denial. The acting president and the other alumni on the staff, they asserted, had been among the truest supporters of the agricultural cause.

The new program and leadership marked a turning point for the College as the attending conditions did for the land-grant movement generally. The departures synchronized with the establishment of experiment stations; the raising of the federal Department of Agriculture to executive status and the systematizing of its research and regulatory work; the beginning of the standardizing and cooperative services of the Association of Agricultural Colleges and Experiment Stations; and the high point in the organization of farmers before the World War I era. Industrially and commercially the impact of modern technology and business consolidation were beginning to dominate the scene. How far and in what directions the new forces would shape the destinies of this particular land-grant institution depended largely upon the new leadership.

An early maturing Buckeye lad, Beardshear, after serving in the Union army throughout the war, had studied for the ministry at Otterbein University, filled several pastorates, and spent a couple of years in the Yale school of divinity before coming to Iowa, in 1881, to head Western College at Toledo. His conspicuous success in bringing vitality to this dubious venture in sectarian education and his energetic participation in state educational organizations led to his selection to head the school district on the "right" side of the river in the Capital city — probably the most desirable public school position in the state. Two of the trustees,

impressed by his organizing skill and his facility in public relations, had been able to sell the preacher-schoolman to the impatient farmers. Beardshear took office February 1, 1891. He was impressive in appearance and manner — tall and heavily built with bushy black hair and full beard. He had a nervous energy that drove him to the limit, on the campus and around the state. In temperament he combined hard common sense with a large vein of sentimentality, a combination which appears throughout his addresses and even in his formal reports. He could discuss buildings, budgets, and courses of study with the conventional vocabulary, but at the same time he had a fondness for the household poets and could give homilies on the old verities. A powerful speaking voice, a racy diction, and a homliness of idiom gave him a ready approach and welcome hearing by student and public audiences. He could voice the varied languages of education, religion, business, and farming. Teachers' institutes, and regional and state associations, church suppers, harvest festivals, and old soldier gatherings were all on his busy circuit. The new executive needed all of these elements of understanding and adaptability to adjust and balance rival differences within the College and to win the confidence and support of a disaffected constituency.

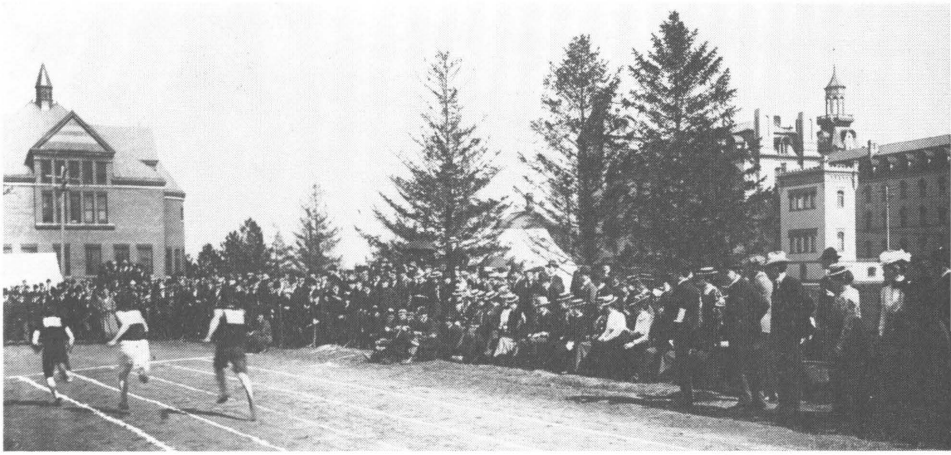
The immediately demanding problem was to conciliate the farm groups who had staged their intended *coup d'etat,* without sacrificing the essential program and standards of a true land-grant college. Wilson's appointment to head the work gave assurance to the farmers that teaching and experimentation were again under safe and understanding direction. James Wilson (popularly known as "Tama Jim" to distinguish him from two or three other Iowa public men of the same name) belonged to a family of Scotch



Botany Hall was built in 1892. The lower stories are composed of stone from the state quarries at Anamosa. It was called Agricultural Hall and housed Horticulture, Agriculture, Agricultural Chemistry Experiment Station work, and Veterinary Medicine. Handrails on the entrance steps and outside fire escape and a heavier growth of surrounding foliage mark the only exterior changes of Botany Hall by the Centennial.

immigrants who had migrated to central Iowa in 1855 and become extensive land-holders. Largely self-educated, he had attained a success as a stock grower that had given him a state-wide and regional reputation. His experiences had been the basis of his practical talks to farm gatherings and his farm page in a group of weekly newspapers. His reputation and skillful leadership had brought political recognition in election to the General Assembly and to Congress, and as a member of the state railroad commission. His interests and ambitions, as was soon to be demonstrated, were more political than academic.

His was frankly the empirical approach and within the



Student body interest in athletics has in some instances run as high in rivalry betwee classes as in inter-collegiate competition. This photograph shows the turnout for a trac meet in the 1890's. At the Centennial, runners on these same spots would be in lane along the south edge of the Beardshear parking lot — going east.

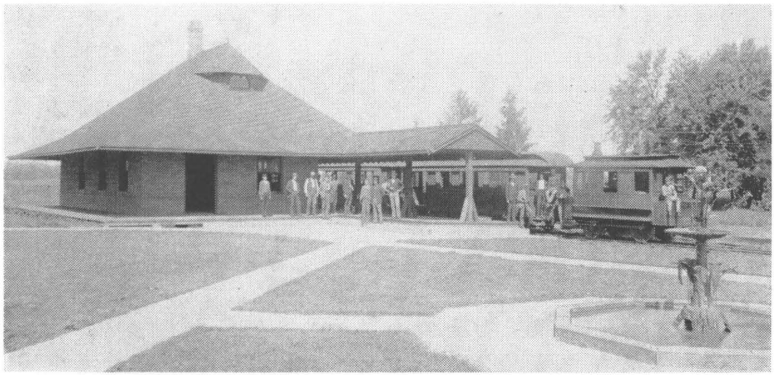
limits of his experiences and observations he apparently presented his ideas with considerable effectiveness. He was admirably suited to give the "practical" tone that was so much desired while trained scientists developed the special branches and conducted the investigations. By the time that he was called to national service, the "main interest" was well provided for.

With the reorganized curricula in agriculture the president could boast that the College was now prepared to meet every need. The degree course was opened to boys with "good country schooling." Algebra, previously required in all courses but veterinary science, could now be secured by the eighth grade Ags at the College. Wilson was incensed that this subject was proposed as a requirement by the agricultural college association, declaring that his college got boys "20 miles from where algebra was taught" and that the students who made up this deficiency had as good records as those presenting credit for it. For those who

lacked "good" elemental schooling, non-collegiate and special courses — including the much-sought dairy school — were provided. The needs of major lines of production were recognized in the creation of departments of farm crops, animal husbandry, and dairying.

The station was organized with both full-time investigators and part-time members of the teaching staff. For the new departments and the expansion of the existing ones, notable recruits were secured from graduates and imported talent, including George E. Patrick and Julius B. Weems in agricultural chemistry, Perry G. Holden in farm crops, Henry C. Wallace, '92, and George L. McKay in dairying, and Homer C. Price and Arthur T. Erwin in horticulture. Charles F. Curtiss, '87, started his long and distinguished career in 1891 as a station assistant and by 1896 had advanced to professor of animal husbandry and assistant director of the station. The veterinary program in teaching and research was expanded and strengthened by the addition of men like John H. McNeil, John J. Repp, and William B. Niles, '85.

In 1893 this athletic field was built west of Morrill Hall and north of Marston Hall. Tennis courts, baseball diamond and football field, and track can be seen, as well as the cemetery in the distance, also the horticulture barn at the right. This field was used until 1913.



The "dinkey" was the steam motor line which operated between Ames and the College from 1891 until 1907. Its station on campus — shown here — was located north of Beardshear Hall. When the dinkey was discontinued in 1907 the station building was moved a little farther north and remodeled but continued to serve as a post office and bookstore, as had been true even when the dinkey was in operation. This was a dual role it continued until expansion of the Memorial Union included bookstore facilities in the Centennial year.

Engineering in the early nineties entered the modern era in specialization, standardization, and leadership. George W. Bissell and Warren H. Meeker in mechanical engineering and Anson Marston in civil engineering all came from Cornell. William S. Franklin, of youthful appearance, brought from Kansas, Berlin, and Harvard the latest findings in physics and the developing electrical application that quite overwhelmed the average undergraduate. Louis B. Spinney, '91, of the same department, after special studies in electricity at Berlin, Zurich, and Cornell could still "get it across" with rare effectiveness. Samuel W. Beyer, '89, with graduate work at Johns Hopkins — from which he secured one of the first two or three Ph. D.s on the staff — headed geology and mining engineering.

Markedly increased enrollment and the dependence of

the technical groups upon the maligned "scientific studies" necessitated the expansion of the general sciences, in staff and equipment. Promising graduates were utilized as instructors in the junior college classes. Thus Stanton in his basic department secured sterling recruits in Maria Roberts, '90, Annie Fleming, '94, Ernest Pattengill, '97, along with Julia Colpitts, from Mt. Allison (Canada) and Cornell.

In the revision of the technical curricula to meet the desires of the vocationalists, it developed that the general subjects essential to the "successful pursuit and highest attainment of farming, engineering, and business management" were very considerable. In agriculture, history and English were required of the under-classmen and the history of civilization of the upper, with American literature, economics, history, and psychology in the rather wide range of electives. The tighter packed engineering curricula found place for English, elocution, history, and in two instances, French or German.

The farmed-out social sciences came a step nearer to stability and specialties. When Barrows answered a call to Ohio in 1894, the venerable Dr. Wynn had sufficient influence with alumni to be restored to his old position. But the old-time appeal was lacking and his eccentricities had become accentuated with the years. His work was divided in 1899 when Alvin B. Noble, of the famed Howe Academy and the State University of Iowa, took the English work under his competent direction. Two years later, with the calling of the Rev. Orange Howard Cessna, '72, to a new professorship of history and psychology, the good bewhiskered preacher-professor Wynn was dropped with a feeling of injustice for which the group of memorial trees just east of his seat of labor was a tardy and inadequate recompense.

With the divisive and disrupting controversy over subject emphasis adjusted for the time being at least, and a measure of security attained, the way was cleared for long overdue modernizing. After extended agitation the official name was broadened (with the adoption of a college seal in 1898) to the more realistic "Iowa State College of Agriculture and Mechanic Arts" which was to be more expressive in the shortened form which could imply the general as well as the technical. The same year, in seeking to emphasize the distinctiveness of the agricultural areas, nominal divisions with deans were created: Wilson in absentia for Agriculture, and Stalker for Veterinary Science. The following year, after varied chromatic trials, cardinal and gold were adopted as the official colors. From the year 1900–1901 the obsolete calendar was changed to the prevalent, September–June year.

The student body of increasing size and more varied representation manifested their own modernizing trends and departures; "collegiate" interests and attitudes were becoming standard in the "gay nineties," in technical as well as in the old-line institutions. As an expression of the new consciousness and sophistication and supposedly to voice student opinion, the I. S. C. *Student* was started in 1890 and soon superseded the sedate *Aurora*. The class of 1894 had the further initiative to issue an annual in their senior year with the startling title, *Bomb* — suggested, perhaps, by the current labor riots. The early numbers were characterized by an unusual artistic skill, and by the freedom with which it was used to caricature the administration and staff. Especially was this true in the drawings of Robert Beecher and William E. Hocking, the later world-famed philosopher. Both features might well be the envy of their current suc-

cessors. Professional consciousness was manifested in an *Iowa Engineer* (1901) and an *Iowa Agriculturist* (1902).

With growing inter-collegiate contacts the literary societies were losing their centrality as intellectual activities, but forensic contests were at their height. Lecture com-

Members of the editorial staff of the Iowa Agricultural College "Student" were in a capricious mood as they assumed this pose to introduce themselves to fellow students in 1894. The publication started in 1890 and at the Centennial appeared as the "Iowa State Daily" each morning of the week except Sunday and Monday.

mittees brought highlights of the lyceum and filled in with professorial talent.

Inter-collegiate athletics, as through the country generally, came alive in the early nineties. The "national game" of baseball was the first to appear on the campuses and provide inter-college contests. An improvised team had played against country towns in the early years but regular "varsity" performance came with a baseball league in which I. A. C. skill and endurance won a fair share of the high-

As an undergraduate, William Ernest Hocking, '97, later noted professor of philosophy at Harvard, enlivened the pages of campus publications with his caricatures of campus personalities. This page from the "Bomb" shows his impressions of some of the staff members of his day.

Top row, left to right:

A. A. Bennett, chemistry

General James Rush Lincoln, military science

Mrs. Eliza Owens, domestic economy

W. S. Franklin, physics and electrical engineering

Middle row, left to right:

Herbert Osborn, zoology and entomology

E. W. Stanton, mathematics and economic science

President Wm. M. Beardshear

Miss Margaret Doolittle, English, Latin, and rhetoric

W. H. Wynn, English literature and history

Bottom row, left to right:

M. Stalker, veterinary science

Miss Marie Chambers, elocution, director of music and vocalist

James "Tama Jim" Wilson, director of the experiment station

L. H. Pammel, botany

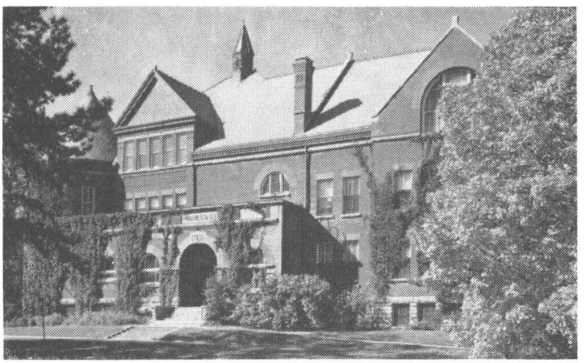
THE COURT.

score games. Football was not far behind, due to the organizing and training initiative of student enthusiasts, like Ira Brownlie and Burt German, with some early season briefing by the famous "Pop" Warner. By the middle of the decade the schedule was running according to form. Equipment was elemental and budgets precarious but many of the problems of big time games had already appeared.

Far less spectacular but more constructive and far reaching in benefits were to be the organized intramural sports and systematic programs of instruction and guidance in physical training, both of which date from this era.

Beardshear's student relations were generally understanding and up to a point, tolerant. With his tireless activity in getting around the campus and community, he could foresee and often head off disturbances and infractions of regulations. Some of these episodes have been the basis of stories that have grown by repetition and have entered into the accumulating body of college tradition.

However, there was one regulatory issue, involving a special group of students, that was to constitute a major test of administrative skill — the old but ever present in some form "fraternity problem." Instead of being in influential position, the first fraternity and sorority that came in the early days had to struggle for existence. Regarded by the generality of students as an aloof aristocratic clique, the small bands of Greeks became a persecuted minority; they were excluded from the existing literary societies and forced to form new ones. The fraternity would have lacked a meeting place but for the asylum that Welch gave in his classroom. Their banquets were subject to attack from the superior "barbs." Both Welch and Chamberlain were



Morrill Hall was completed in 1891. It housed the library, chapel, museum, lecture rooms, and laboratory of the department of natural history and geology. It was named for Justin S. Morrill who sponsored the Land-Grant or Morrill Act of 1862. At the Centennial it continued in use in basically the same form except for relatively slight interior remodeling.

sympathetic to the organization, and were hopeful that the societies would increase.

Meanwhile the division made for dissension and disturbance. Without considering the values of such organization, prevailing opinion was reflected in the *Student* as intransigently abolitionist. The trustees were called upon to

take prompt drastic action. They acted promptly but only to pass the hot potato to the faculty, "with full power to act." That body, in turn, freely and fully delegated its authority to the president to the end that he would settle the whole matter "in such manner as his judgment might determine." The decision was thus left fully to Beardshear and he did not seek to evade it. His decree was that while existing members might retain their status, no future elections should be made, upon penalty of expulsion. In a subsequent test case the courts upheld the authority of the College. So sweeping a condemnation showed a lack of understanding of the constructive possibilities of such organizations. In view of the steadily mounting housing demands the policy was short-sighted. The solution, as his predecessors had recognized, was for multiplication, under proper regulations, rather than prohibition. While the drastic action brought bitter and enduring opposition to the administration and, according to old timers, was disregarded on the q.t., unquestionably it was in accord with the existing desires of the bulk of the students and their parents and the majority of other citizens. On the whole, the widely publicized episode enhanced the president's standing over the state. And the rating was high indeed for the inspiriting executive and his College.

The Beardshear regime set a record for state contact before the fully organized extension service. The president left his classroom, office routine, budget making, and scheduled conferences to mingle with the large constituency at the grassroots and the street corners and town halls, and he encouraged the staff to do likewise. Strategic organizations like the state agricultural and horticultural societies and the stock growers association were infiltrated by college

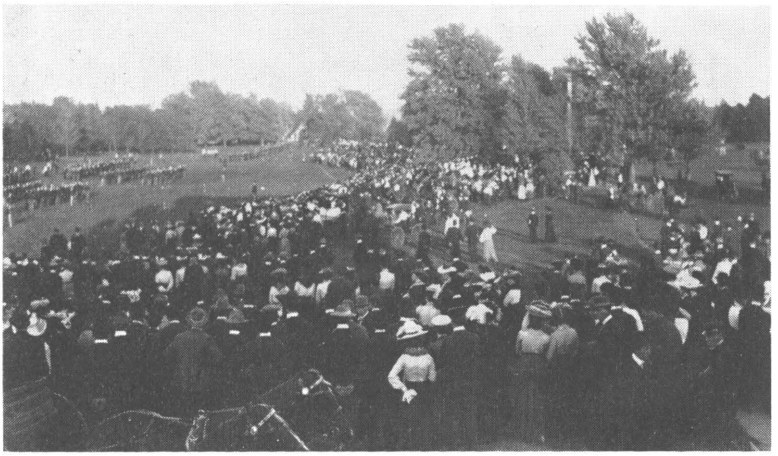
A group of livestock men in 1904 voiced the need for college-trained agricultural writers. As an outgrowth of this preliminary discussion, these interested agricultural leaders and editors met on the Iowa State College campus on May 30, 1905, to formulate plans for the first course in agricultural journalism, opening in the fall of 1905: (back row, left to right) Alvin H. Sanders, C. F. Curtiss, J. A. Rutherford, Will H. Ogilvie, Mr. Farwell, R. Merrick, W. J. Kennedy, W. E. Skinner, R. B. Ogilvie; (front row) John Rigg, W. A. Harris, Mortimer Levering, Arthur G. Leonard, John Clay.

experts, and educational gatherings were not allowed to forget that the state had a College as well as a University. The College was not content with merely going to the citizens; they were brought to the campus in general and special assemblages. The college excursions from 1898 brought thousands to be instructed and entertained. A fortnight stock judging course, in 1900, was the forerunner of the famous farm and home week. Special groups were appealed to in sheep shearing festivals, plowing matches,

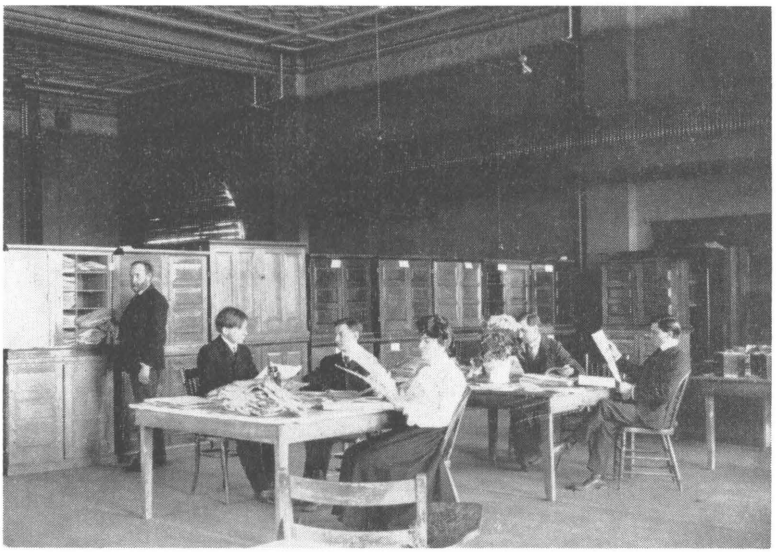
and the campus meetings of the state Grange and the dairymen's association. City-campus relations were greatly furthered by the substitution in 1890–1891 of a steam railroad — the famous "dinkey" — for the cumbersome stage.

Such intimate relations with the citizenry in general and cooperation with special groups, along with the growing number of influential alumni, facilitated getting appropriations both for pressing capital needs and for operation. The depressed conditions during most of the decade made large undertakings and advanced projects of any sort out of the question. But by the turn of the century there came the "new prosperity" in which even education could share.

The period marked the erection of a number of buildings, intermediate to the more "permanent halls"; a lasting campus memorial; and provision for the beginning of the



The first Excursion Day or Harvest Home Festival was held in 1898. Railroads gave excursion rates until 1906. The first Excursion Day drew 6,000 people and one in 1905 drew 12,000. All departments of the College were on exhibition as well as the garden, the herbarium, and museum. In the afternoon there were speeches and music, at a general assembly in a large tent. Part of the program was a dress parade by the military department.



A glimpse at the adaptation of circumstances to facilities is shown here in these temporary quarters of botany department in Margaret Hall in the early 1900's. Botany had occupied rooms on the first floor of Main until it burned in 1900. It moved into Central (later Beardshear) when it was completed in 1906. Dr. Herman Pammel, head of department of botany, is standing.

modern campus. In 1891 the triple purpose Morrill Hall — as proclaimed on the stone facing "chapel, library, museum" — was dedicated with ceremonies befitting the name. Soon after came the curiously designed and arranged "old ag." hall. In 1895 the first residence for women was provided. This pleasingly lined and appointed building was named Margaret Hall in memory of Margaret McDonald Stanton. As a personal memorial to his wife, Dean Stanton contributed chimes, which proving unadapted to the hall, were hung in a separate bell tower. A commodious presidential residence on an eminence east of the meandering brook at the south of the campus was occupied though not fully completed at the time of Beardshear's death. With a major

building program accentuated by the partial destruction of Old Main, the legislature in February, 1900, extended to the State College the one-tenth mill tax that had been granted to the University four years previously. Even more significant for the future was the securing from the legislature, the same year, of the first biennial educational support fund. In the biennium 1900–1902, $25,000 per year was granted.

Not only in the state but nationally, the College was steadily gaining recognition in this fruitful decade. The military department secured metropolitan publicity in a trip by special train to the Columbian exhibition where intricate drills were executed both by the men's and women's companies. Two years later the Chicago papers were to feature the decisive football victory of the I. A. C. squad — the first "cyclones" — over Northwestern.

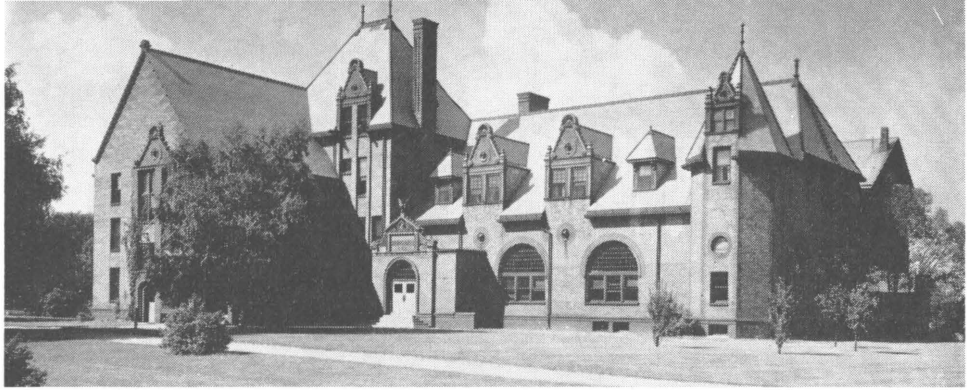
Even more far-reaching was the prestige gained by the record-breaking tenure of Professor and Dean Wilson as head of the U. S. Department of Agriculture. To this rapidly expanding government service he brought a number of alumni, including the assistant secretary and heads of leading bureaus. In a centennial survey in 1899 A. C. True, head of the Office of Experiment Stations, referred to I. S. C. as outstanding in the development of its agricultural program.

Both Beardshear and leading department heads were active in the agricultural college association. In 1900 Beardshear was delegated to present to the division of superintendence of the N. E. A. a statement of the aims and functions of the land-grant colleges. He had long been active in the N. E. A. and was president in 1902, the year of his death.

An estimate of such an energetic and picturesque personality who impressed students and fellow workers so greatly as to have become something of a tradition is not

Football had its beginnings on the campus in 1892. This 1895 team beat Northwestern 36 to 0. A sportswriter said that Northwestern might as well have tried to play football "with an Iowa cyclone" as with the Iowa team it met. So the Iowa State Cyclones were born. Over the course of years the photograph of this football team probably has had more wide-spread distribution than that of any other athletic team in the school's history — and undoubtedly a major share of this attention has come toward the latter end of the first century of Iowa State College as this valiant band has advanced to almost legendary stature.

easy to make, especially as sudden death left his program very incomplete — "his tale half told." The immediate crisis had been met in placating the organized farmers, and in gaining public favor, for the time being at least. In this he had made certain concessions to popular desires, as in the lowering of entrance requirements for the agricultural course and in the abolition of fraternities. When the cry



Margaret Hall, the first women's dormitory outside of Main Building, was built in 1895 and was named for Margaret McDonald Stanton, a preceptress before her marriage to Professor E. W. Stanton. It stood on the approximate site of the new wing to Home Economics Hall which carries the Centennial year date. Margaret Hall burned in a spectacular fire on the Saturday night of the Bomb Beauty Ball in 1938. At that time it was being used as a graduate women's dormitory.

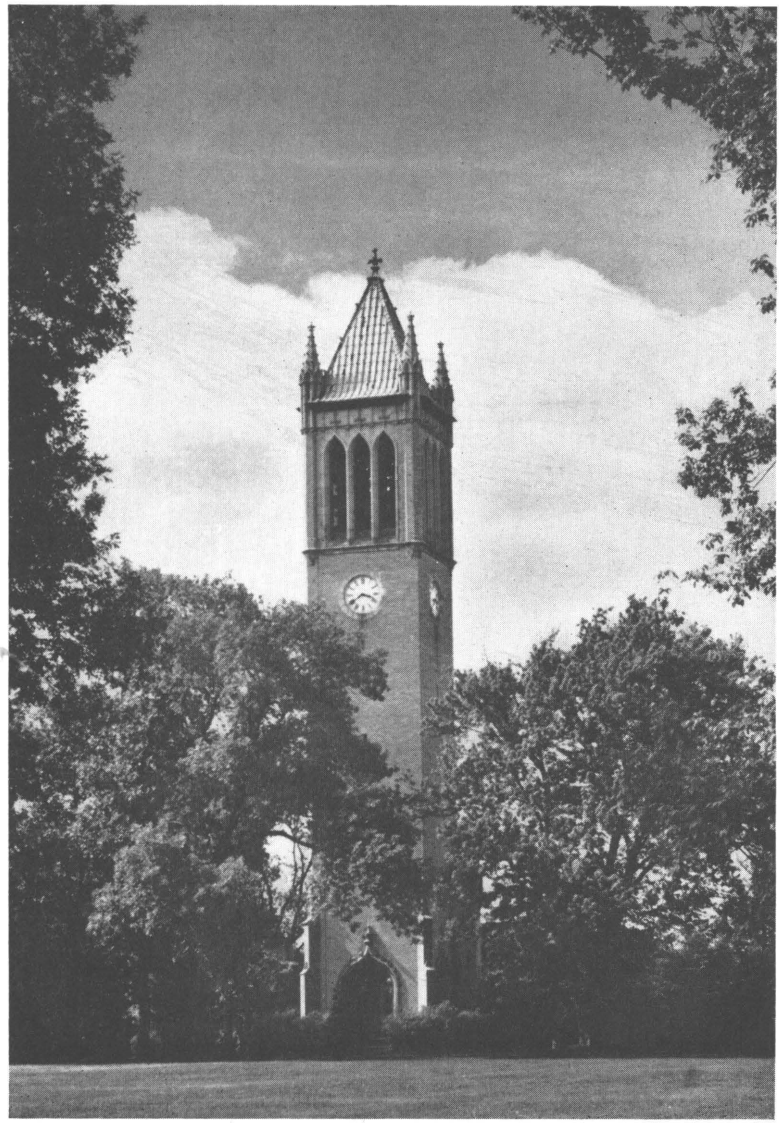
for economy and the possibility of duplication was raised in the legislature, he prudentially hastened to change the designation of the general division from the liberal sounding "science and philosophy" to the more practical connotation of "science as related to the industries." At the same time he was aware of the danger from special interests. With broadening name safely secured he could refer sardonically to the "demagogic period of fishing for votes with the names of these colleges as fly baits. . . ."

But he had kept clear from one tempting form of the last infirmity. Unlike a considerable number of popular land-grant leaders in this era of agrarian unrest, he had not sought political office. To be sure, he had an active interest in public affairs and in 1898 had headed the county delegation to the Republican state convention, as Welch had before him and Storms would after. But he apparently had no designs or desires for either the state house or the national capitol. Wisely, he sought no such release from his academic trials.

To speculate on Beardshear's capacity to deal with the metamorphic changes of the next two decades had he been destined to live out the full span would be interesting but wholly futile. The record is that he had brought the College to the threshold of the modern era without either full commitment or prejudice to the land-grant idea. The basic issue of the technical and general, the practical and the liberal, remained unresolved.

The choice of a successor to so strong a personality would at any time have been difficult. As it was, the removal at this juncture of a stabilizing and balancing influence precipitated a direct and bitter contest between rival interests that had kept a tacit truce but had never been reconciled. Stanton was put in charge for a year and as usual kept the program at all points moving along steadily, but with no opportunity to alter or innovate.

The selection of a permanent head involved a contest of agriculture versus all other interests of the College — an effort, in effect, to return to the narrow "agricultural college" status. The leaders of this group were Secretary Wilson and Professor Curtiss. For a time Wilson, with his distinction as a national administrator, was regarded as the most available candidate. But the general feeling was that



The stately Campanile was built in 1899. A Carillon of 10 bells manufactured in England was donated by Professor E. W. Stanton, '72, in memory of his wife, Margaret McDonald Stanton. In 1929, 26 bells were added, and in 1956, 13 more were added to make a total of 49.

he was of more service in Washington and that his young successor who had gained a reputation as a practicing scientist and a dependable leader seemed the farmers' best hope. Curtiss had an energetic campaign manager in his colleague, Professor Willard Kennedy. His candidacy was supported by farm organizations and press and by the agricultural alumni, most of whom were recent graduates and ardently divisional conscious. Richard Clarkson of the *State Register* claimed to have evidence that Beardshear had been so favorably impressed by Curtiss' leadership that he had sought to build him up as his successor. "Uncle Dick" himself was convinced that the intent of the founders like his father was to have the college remain an "agricultural school."

The opposing group was recruited from the older alumni, especially the graduates in general science and engineering, who resented such a belated effort to narrow the scope of the College. It was a fatal tactical error of the agricultural interest not to have made alliance with the other technical groups. Wilson was widely quoted as saying that all the work but agriculture should be sent to Iowa City. While such a sweeping reduction was denied, every one knew that with Tama Jim the eastern side of the campus was the real college, to which all the rest was subordinate, when not superfluous.

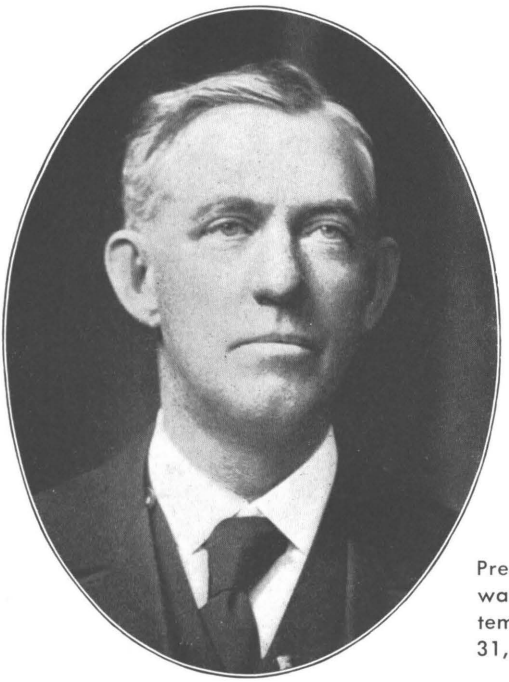
The conglomerate alliance found the most appropriate and available candidate in Stanton, the teacher and counselor of all of them. In dealing with college problems, he had the direct advantage of his long experience as secretary of the board, and acceptable service as temporary president. Gue, speaking as a founder and one of the most enlightened of the early trustees, was convinced that Stanton would be

The Knoll was built for President Beardshear in 1900. He died shortly thereafter. When the Storms moved into the house in 1903, Mrs. Storms, who read extensively, gave the house a name as was the custom in those days. She named it the "Knole" after one of the finest baronial castles in Kent, England, near Sevenoaks. President Pearson changed the spelling of the name to Knoll. At the Centennial the Knoll continued to be the residence of the president of Iowa State College.

the logical executive, while Curtiss could better serve the cause in his existing position. No wonder, in retrospection, the agricultural protagonists held Gue mainly responsible for starting off the College with "the wrong emphasis."

Naturally both sides brought all possible pressure upon the trustees who were known to represent the rival interests. After long delay and schemings worthy of the cleverest political management, the election was made at the meeting on July 2, 1903 — at the same time and place, by design or otherwise, of the Republican state convention. The preliminary poll showed that Stanton had a majority of one, and his election could thus have been put through. But as Stanton's supporters recognized, the victory under the circumstances would have been a futile one. The opponents were so equally matched and so fully committed that the opposing side would not have accepted the result, and in consequence the College would have been disastrously divided. Stanton, following the advice of his calmer advisers, withdrew his name.

Compromise was necessitated and it remained to determine who from the large field of entrants would best unite the opposing interests. The choice was not a matter of chance or offhand whim; it was carefully planned and engineered by a man who understood practical educational politics. Richard C. Barrett, retiring as superintendent of public instruction — a position which made him a trustee of the College, presented and pressed the claims of his pastor, the Rev. A. B. Storms, of the First Methodist Church of Des Moines. Barrett pictured him as a popular young scholar of pleasing address and attractive personal qualities and with no prejudicial academic or occupational involvements. The rare availability of the candidate was recog-



President Albert B. Storms was president from September 1, 1903, to August 31, 1910.

nized by both factions and, after a brief personal conference, he was elected unanimously.

The unanimity of praise with which the choice was received by press and public was a tribute to the young clergyman's standing at the capital city and in the state. Added to this was the general feeling of relief that the distressing and divisive conflict had been adjusted so satisfactorily. The choice was a face-saving out for the leaders of the rival camps, both of whom hastened to tender congratulations and pledges of full support. Whatever the immediate disappointment, both in the longer view could have the satisfaction of knowing that they had not been forced to abandon their positions and that their influence was not weakened. Stanton had come to occupy a unique position on the campus and among the alumni as teacher, student counselor,

and organizer that executive power could not have enhanced but might conceivably have weakened. Curtiss faced a professional opportunity as a key leader in the "new agriculture," in state and nation, that should have been more inspiring than the burdens and uncertainties of executive dignity.

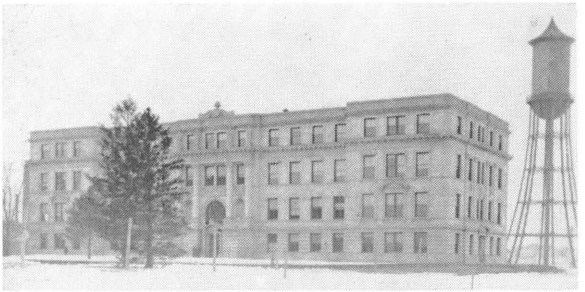
The young president at forty-three was in the prime of an energetic career. From a Michigan farm home he had gone to the classic halls at Ann Arbor where he earned his A. B. and A. M., to which Lawrence was to add a D. D. and Drake an LL.D. He had held pastorates in Detroit and Madison, Wisconsin, before coming to Des Moines. His diction, manner and voice made him welcome not only in the pulpit but on the lecture platform of chautauqua and lyceum. His special scholarly interest was in American history and at Madison he had attended the seminar of the famed Frederick J. Turner. He had published several volumes of sermons and essays.

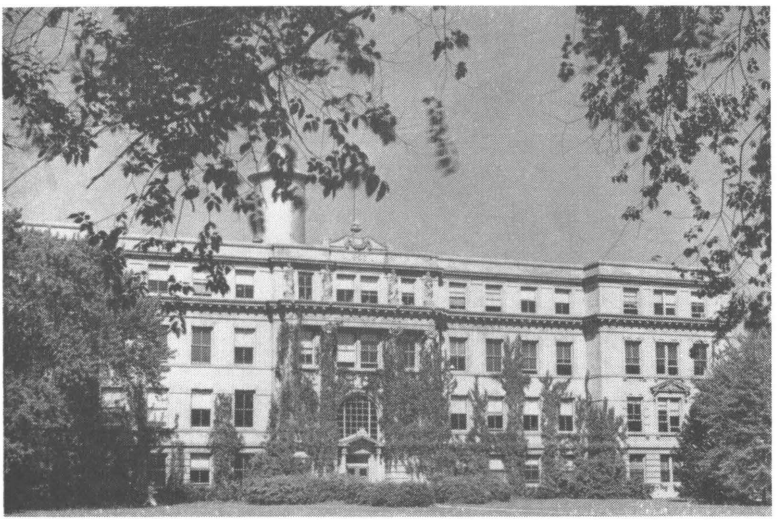
Storms' views of land-grant education were unusually definite and realistic. His general beliefs and aims were stated in his inaugural address and elaborated in his annual reports. His convictions were to be confirmed by rigorous experience. In 1909, a year before his resignation, he presented a frank, well reasoned paper before the land-grant association on "The distinctive work of the Land-Grant Colleges: their function, growth, and organization." His position was that of the liberal-minded land-grant educators: an understanding recognition of the essential place of technological education in an industrial age, but with the broad view of such education, as firmly grounded upon the general sciences and enriched by the humanities. His interpretation of the organic act not only embraced the general sciences, including the social, but gave legitimacy to the

"liberal arts," as then understood – although he recognized that such an extension at that stage would be inexpedient. The young president's convictions on teaching and research approached closely to the ideal. He would allow departments the fullest possible control over appropriations, and the organization and conduct of their teaching and research.

With such a breadth of outlook and freedom in supervision, Storms was admirably fitted to secure the reorganization of the College on a divisional basis. Curtiss became the active dean of Agriculture in 1902, McNeil headed the Veterinary division until 1909 when the youthful Charles H. Stange took charge, and Marston, in 1904, was given this status in Engineering. The group of sciences related to the industries, including domestic science, was still in uncertain and more or less probationary status, as administered in a tentative division under the acting deanship of the president himself with the abbreviated designation, "Science and General and Domestic Science." This title was calculated to include everything of collegiate rank not otherwise organized. Graduate study was continued under committee supervision.

Indicative of advances into new fields of training was the creation of a number of new departments . One of the first departments of farm mechanics was organized by Jay Brownlee Davidson. Forestry was made a distinct profession by Hugh P. Baker at the beginning of his notable career. In 1908, the year that he received his doctorate at the University of Chicago, bacteriology was added to the general sciences under the direction of Robert E. Buchanan, '04, who previously had taught the course in the department of botany. Financed initially by a gift from John Clay, a Chicago commission merchant, a course in technical journalism was offered in 1905 by Will Ogilvie, the bulletin





Engineering Hall — a rugged structure forming the western perimeter of a circle of Bedford Stone buildings on central campus — was built in 1903. In 1947 it was renamed "Marston Hall" in honor of Anson Marston who joined the engineering faculty in 1892, served as dean from 1904 to 1932, and subsequently as dean emeritus until his death in 1949. At the Centennial the ivy had effected great change from its original appearance.

editor. In later years this training was brought to full professional recognition by masters of the craft like Clifford V. Gregory, '10, and Fred W. Beckman. To meet a growing demand for the training of high school teachers in applied subjects, a department of vocational education was introduced in 1909.

This is a typical scene from one of the various short courses staged at Ames. At the end of the two week short course on Corn and Livestock judging in 1903, "Uncle" John Gosling from Kansas City gave an illustrated lecture on beef cutting. It was a popular part of the short course.

This period of adjustment that involved such decided advances in the systematizing of the natural and physical sciences and their applications marked the distinct formulation of the main social sciences. The more conventional subjects of the group had been included in land-grant programs from the beginning, largely as convenient fillers before the technical disciplines were sufficiently established to stand by themselves. But the reasoned serious study of social phenomena had a real and vital place in the land-grant objectives.

Training for citizenship, then as later not generally clearly defined, was accorded major emphasis by Morrill and such representative educators as White of Cornell, Gilman of the Sheffield School and California, Peabody of Illinois, Patterson of Kentucky, and Fairchild of Michigan and Kansas. The Iowa leaders were continuous and consistent champions of this training. Gue had stressed the training of leaders for the public service no less than for the industries. Welch with his social mindedness and experience in practical politics had an understanding appreciation, and

Knapp, Chamberlain, and Storms were no less committed to the training. Unhappily for such a socially-purposed design, appreciation far outran provision in the new colleges as in most of the old. Senator Sutton in 1884 in his plea for liberalization had emphasized the essential place of this group, and history, in particular, he declared to be the Hamlet of the whole play. However, it was only in the middle 1920's that this subject was accorded separate status, and the others of the group, with more obvious relation with current affairs, were slow in getting full recognition. In previous administrations, as noted, these studies of mankind had been fitted into the homework of the presidents or lumped together with various of the humanities.

The establishment of Cessna's chair of history and psychology in 1900 was a step toward subject differentiation. In exchanging the pulpit for the desk, the new professor sought persistently to acquire professional attitude and familiarity in the twin disciplines by attendance at summer schools and professional meetings, and by voracious reading. He was assisted in the history courses for a couple of years by Paul S. Peirce, a graduate of Cornell University and Yale. On his resignation in 1906, Peirce was replaced by Louis B. Schmidt, a superior student of Cornell College with graduate study at the universities of Chicago, Iowa, and Wisconsin. Schmidt proved to be an effective, inspiriting teacher and a popular public lecturer.

Government, under the term "civics," had been taught by Welch and Chamberlain. To justify his appointment, Barrett, in addition to his service as chairman of the committee on entrance and secondary school relations, was given a professorship of civics, evidently in recognition of an LL.B. that he had acquired during his service in the statehouse.

Without systematic training, Barrett's teaching apparently tended to be inspirational and hortatory rather than analytical and expository. Storm's obituary tribute that, "his classroom was always a school of patriotism," seems to be verified by the course descriptions of his department.

"Economic science," as it was long termed, continued to be the junior partner in Stanton's dual department. Considering the later emphasis upon econometrics, the combination might seem to have been a logical anticipation. In the one advanced subject, however, the student was invited to venture directly from a general introductory course into the abstractions and imponderables of the history of economic thought. In 1902, a former asisstant, Benjamin H. Hibbard, '98 (who had just received his doctorate at Wisconsin) became an instructor and courses were added in economic history, money and banking, public finance, and labor problems. In 1906 Stanton relinquished the subject to his associate who thus was able to organize a separate department. When Hibbard was called to Wisconsin in 1912, John E. Brindley, a graduate of Wisconsin with a Ph. D. from Iowa, headed the expanding department.

Sociology had been taught from time to time in the potporri of Welch and Knapp but it was not recognized as a special branch of study until the following administration. Due largely to the interest in rural life aroused by the report of the country life commission, in 1913, George H. Von Tungeln, who had studied with T. N. Carver at Harvard, was made an assistant professor in rural sociology.

With increased federal aid and the enthusiastic support of the administration, the work of the agricultural experiment station became more fully organized into the main sections of investigation, and the findings greatly extended

In the early years of the 20th century, one of the means of sharing knowledge across the state was through "extension trains." The Apple Special was just one of these. Besides P. G. Holden's famous corn trains there also were oat trains, alfalfa trains, potato trains, baby beef trains, hog trains, and dairy trains.

and perfected to the advantage of the economy of the state. For corresponding service to the industries an engineering station was established in 1904 as a state supported research center. The same year, as a special phase of such research, the College was made a "state highway commission" under the joint direction of the deans of Agriculture and Engineering.

This period marked the centralizing and systematizing of the College's long and varied contacts with the farmers of the state. An extension department within the Division of Agriculture was established in 1906 under the supervision of the dynamic P. G. Holden, who had become famous in state and nation for his demonstration train and short course campaign for the improvement of seed corn.

Increasing enrollment and the expansion of courses and research projects, together with the gap left by the destruction of Old Main, created demands for buildings that no

makeshift adjustment could satisfy. A thorough long-time campus planning was clearly indicated. This became especially imperative as the first "permanent" major stone buildings began to appear. The new engineering building for which Beardshear had secured appropriation was available in the spring of 1903. The central building — long to be the special pride of the College — was ready for dedication at the commencement in 1906. Like the city halls, court houses, and capitols of the period, the imposing domed structure displayed spacious halls and ornate design at the expense of functional utility.

The growing needs of the Agricultural Division were not met adequately by a "fireproof" addition to the old hall, a substantial dairy building, and various special structures. A general purpose structure comparably commensurate with the provision for engineering and general administration was clearly overdue. The location of this major building on the eastern side of the campus precipitated the issue of future designing. On the advice of Professor Erwin, chairman of the grounds committee, the College employed the senior member of the noted firm of landscape architects, Olmsted Brothers. His report, which reflected throughout an appreciative understanding of the background and existing situation, pointed out that the naturalistic design of Welch had been broken up by the new permanent buildings which should constitute the main quadrangle of a modernized campus. Such a design, as he explained in detail, did not necessitate artificial conventionality and made possible the preservation of the natural growths on the bordering areas.

Convincing as the recommendation would seem to be, it was met by a barrage of protests from old grads. They

The first short course held away from Ames was one on corn judging at Red Oak in 1905.

regarded the abandonment of the plantings, on which some of them had labored no doubt with little enthusiasm, as nothing short of desecration in what was represented to be a stilted checker-board layout as artificial and formal as a draftsman design. Such nostalgic regret has attended the working of time and change on all large campuses relentlessly expanding to meet enrollment and functional needs. The reaction was but another evidence that sentimental emotions could be as strong among the graduates of a technical institution as with those of an old-line college.

Modernized utilities were no less imperative. Water, sewage, and central heating and lighting plants were planned and designed by the engineering staff. In 1907 an electric line replaced the picturesque steam dinkey.

Student life and attitudes were becoming as modernized and sophisticated as plant and program. The period was marked by freedom and increased individual initiative. The old paternalistic regulation and supervision were replaced by counseling and attempted constructive motivation. The ban on fraternities was lifted and the Greek letter societies became a recognized part of the college community.

Inevitably the new freedom was abused by a small but disturbing minority, in personal and group indulgences and troublesome and often destructive demonstrations. Such conduct was not only disruptive to the orderly campus program but was highly discrediting in the state, especially as academic irregularities invariably receive an exaggerated journalistic emphasis. As an agency of self-improvement, a group of able and serious minded students of the class of 1904 formed a student government organization known as the Cardinal Guild. It sought to promote high standards of conduct on the campus by turning youthful energy into constructive manifestations of "college spirit," and to uphold and advance the public standing of the College. The truly commendable aspirations kept the reach far above the attainable grasp. A special abuse of these years was an orgy of classroom cheating. The demoralizing practice led to a periodical crusade for an honor system, then as later frustrated by the besetting weakness of all self-government — the failure to assume adequate responsibility. For the average student, religious and social activities centered in the YMCA and YWCA which in 1907 moved into the relatively commodious and well equipped building, named Alumni Hall for the main donors.

Whatever his other interests, desirable or otherwise, the modern student was greatly concerned with inter-collegiate athletics which really came alive with membership in the Missouri Valley Association. Under the enthusiastic but well balanced guidance of staff members like S. W. Beyer and W. F. Coover and the skillful coaching of Clyde Williams, the Cyclone teams won honorable place in state and conference. Achievements in this realm brought pride and satisfaction to the alumni no less than to the student body.

Alumni Hall was started in 1904. It stood in this unfinished state until more funds were forthcoming from alumni, faculty, and friends, then was completed in 1907. This view is looking north — so actually is looking toward the back of the building.

Emergency Hall, the temporary classroom building constructed after Main burned, can be seen just north of Alumni Hall. In the background Beardshear Hall is under construction. At the right the English Office Building is visible through the trees.

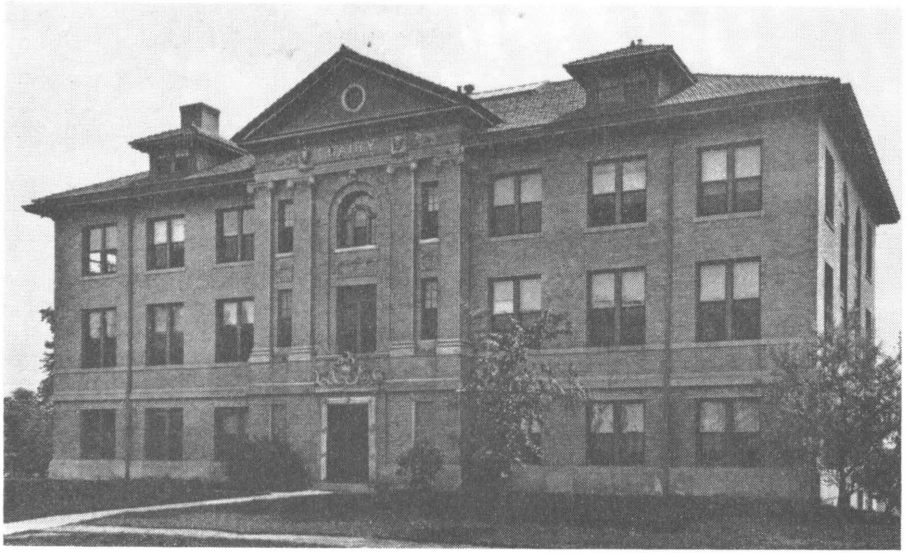
The first decade of the century was marked by an awakening interest and participation of the alumni in college affairs generally. An official journal, the *Alumnus,* was founded in 1905 to keep former students in touch with the College and with one another. By that time alumni clubs had been formed. They met not only in the leading Iowa towns but in strategic centers about the country. From the late eighties there had been continuous alumni representation on the board that came increasingly to influence policies and appointments.

As exercised, this control was bringing the board into marked disfavor with the legislature. The Healy committee in 1898 denounced the employment of close relatives of trustees as well as a looseness in financial accounting. The establishment that year of a central board of control for the state's custodial institutions suggested a similar system for the educational. Institutional consciousness postponed such

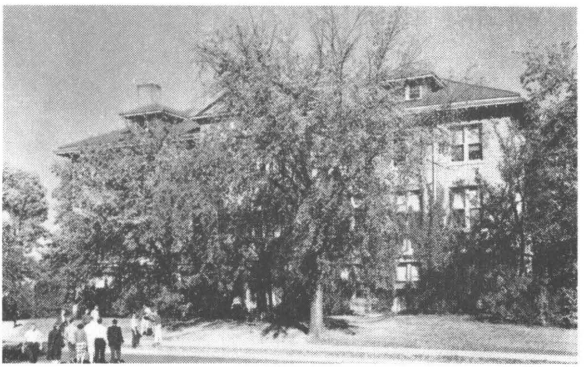
a centralization, but with the demands of increasing size and improving standards, the rivalry for support and recognition reached a point where the legislature felt a halt should be called. In 1904 the Whipple committee was authorized to make a thorough survey of Iowa's public higher education and to include visits to the institutions of neighboring states for comparison. The findings were strongly condemnatory of the existing system. Separate boards, they found, led to duplication of work and intense competition for appropriations. This unseemly rivalry was intensified by the alumni among the trustees. By reason of lack of cooperation and uniformity, the expenditure of the millage levy involved needless extravagance. Student fees were not uniform. Without going into specifications, the committee was confident that the educational programs could be improved. The only solution for these deficiencies and derelictions, in the judgment of the committee, was a centralized policy-making board with a full-time administrative committee whose main function would be to handle the financing, for which there was such obvious need.

Storms and vocal alumni were strongly opposed to the change of control. As a special type of institution with peculiar objectives and program, it was essential for the College to have its own understanding board to safeguard these interests. Instead of contributing to greater harmony and understanding, it was contended, the proposed control would bring political scheming to determine personnel and policies.

Public opinion was so divided that the bill failed in two sessions but was finally enacted in 1909. In certain respects the new board was an innovation in educational administration. The nine members were appointed for six years on



Dairy Building, later called Agricultural Annex, was built in 1905. At the Centennial it was housing the economics and sociology department, extension home economics, and a strictly up-to-date journalism photographic laboratory.

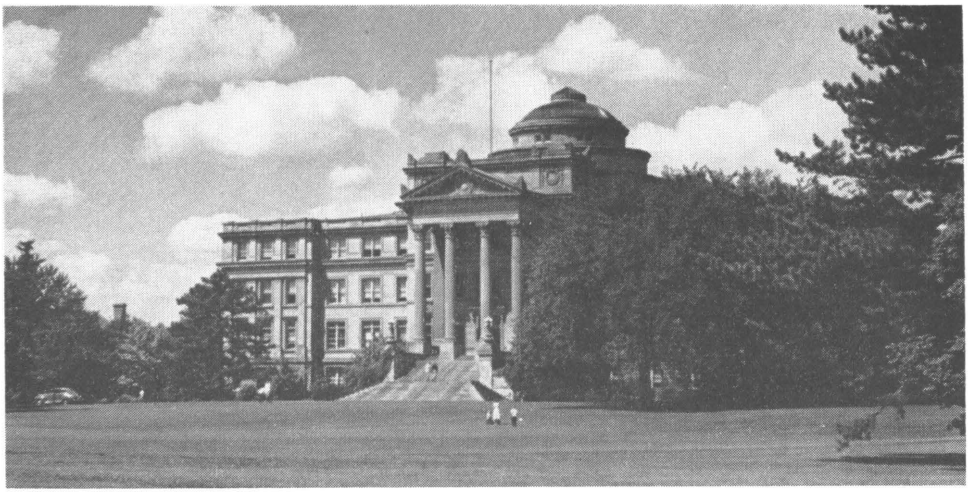


a bipartisan basis. To prevent undue institutional influence, but three of the members at any time could be graduates of the state's institutions and not more than one could come from a given institution. The main function of this "lay board" was to formulate general policies; of necessity much of their nominal authority was delegated to the presidents of the institutions and their staffs. A peculiar feature

was the three member finance committee appointed by the board, one of whose numbers would be the secretary of the committee and board.

Educational leaders generally viewed the Iowa system as an administrative advance. It stopped short of complete consolidation of the higher institutions as it did of integration of all levels of public education. As frequently happens, the most uncertain feature was in the most original provision: the finance committee whose authority and prerogatives were never clearly defined, with consequent possibilities of exertion of unanticipated influence by ambitious members. In general the board members were persons of ability and recognized standing. Women were included from 1921. Continuity of policy was afforded in the formative years by the notably long tenures of certain strong minded members. No less significant was the forty-five years' chairmanship of William R. Boyd and the twenty-two years' secretaryship of William H. Gemmill, '94, of the finance committee. The large proportion of lawyers and businessmen gave assurance of stability and a generally conservative trend of policy.

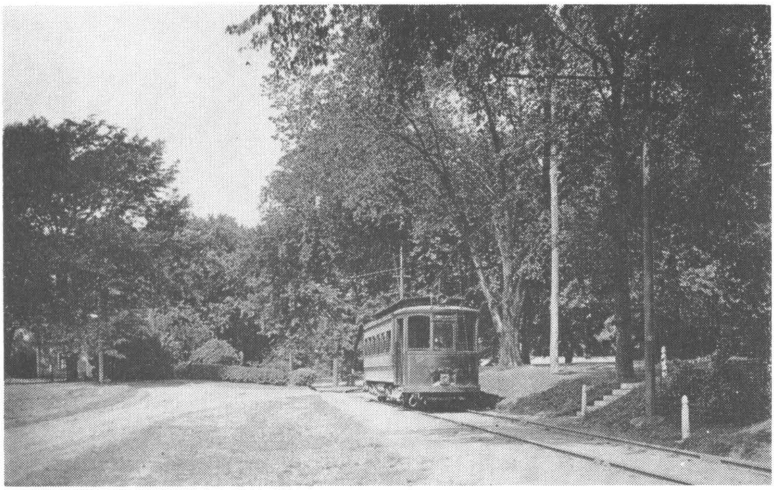
From the conditions and influences leading to its creation, the new board had a virtual mandate to promote efficiency and economy by preventing duplications and abolishing courses regarded as inappropriate to the needs of the state. Essential to these ends were presidents generally agreeable to the efficiency line. The heads of the University and Teachers College could be counted upon for compliance, at least when their own programs were not too directly involved, but the College's executive remained more dubious. The board's objection to Storms, as represented at the time and by its spokesman years later, was not his



Central Hall came onto the horizon in 1906 as the administration building for Iowa State College. In 1938 it was renamed Beardshear Hall, and at the Centennial was continuing as administrative headquarters.

outspoken opposition to the new control, but rather that he did not provide the "forceful administration" that the College needed. Undoubtedly both were involved in an untenable situation as Storms recognized in stating in his dignified letter of resignation, to take effect in the fall of 1910, that the board in carrying out the contemplated changes should have a president of their own choosing.

Storms had labored under the handicaps of following an unusually popular president and of inheriting a program of expansion and reorganization of which no part had been brought to completion. Added to these difficulties was the



From 1907 until 1929 the artery of communication between downtown Ames and the campus was the electric trolley. This view looks west from a vantage point in front of what at the Centennial is the south entrance to the Press Building. The Farm House is visible in the trees at the left and the Landscape Architecture Building is the one up the steps on the right.

unsettlement of a new governing authority. Even so, Storms' seven years exhibited definite advances and permanent achievements: the campus delimited, the main divisions organized, a marked growth in enrollment, increased support, and a strengthened staff. If he had given the technical divisions too free a hand in seeking their special interests, at the same time by reason of his appreciation for the general sciences and the humanities he had maintained a salutary balance of the curricula that a narrower visioned executive would not have secured. He had thus helped to preserve the essential bases of the land-grant idea for the years of critical testing that were just ahead.

At this crucial juncture for higher education in Iowa,

the board used care and deliberation as it sought a new president, in accord with its standards. Neither of the previous rivals was available. Secretary Wilson again used his influence for Curtiss, but in addition to the feeling that the dean was of more service to College and state in his present key position, his candidacy was prejudiced by the likelihood that his successor as dean would be his close associate Professor Kennedy, who had become involved in controversies regarding stock judging practices and relations with commercial enterprises. Stanton was no less out of the running. In laudatory resolution he was again appointed acting president but with the renunciatory condition that he was not a candidate for the permanent position.

These two full years of the dependable relief man — 1910–1912 — were by no means ones of marking time and avoiding positive action. On the contrary, they showed definite expansion and advance. The home economics, veterinary, and gymnasium buildings were completed. The plan for an agricultural short course, started in Stanton's first administrative service in 1890, was completed in 1910 by the creation of a two year program distinct from the degree curriculum in subject matter, aim, and supervision. Throughout its years of useful training the reorganized course was to be under the enthusiastic and inspiriting guidance of Jules C. Cunningham.

From a short course in 1911, a general summer session emerged which was to evolve to the dignity of a regular quarter.

A signal recognition of the national standing of the College and an unexampled stimulus to high scholarship in all of its divisions was the installing, in October, 1911, of a chapter of the honor society of Phi Kappa Phi, open to

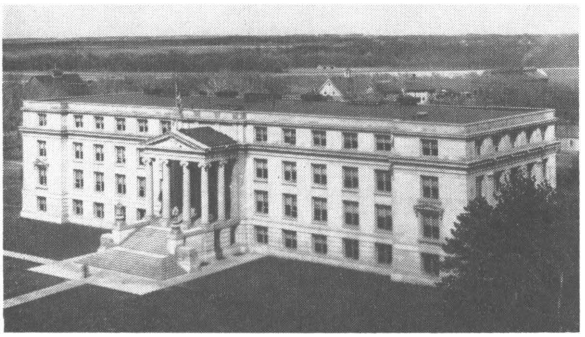
students in all divisions. The establishment was peculiarly appropriate as the society was founded and has always been especially strong in land-grant colleges and universities.

With all his kindliness of manner and conciliatory temperament, in a cause to which he was thoroughly committed, Stanton could assert himself forcefully and fearlessly. Thus he took advantage of his temporary authority to abolish, for his time at least, the long-standing barbaric practice of hazing. While there were to be sporadic appearances in later years, this collegiate abuse was never revived in its more objectionable aspects.

► RECOGNIZED STAFF EFFORTS

Unlike too many in temporary command, he showed rare tact and appreciation in his relations with the staff. Skillful in adjusting differences and misunderstandings, he was quick to give generous commendations in his official reports and elsewhere for services and achievements too frequently taken for granted.

Altogether Stanton's administration in these changeful years, at the height of his vigor and enthusiasm and with his unequaled understanding of the aims and needs of his College, went far to verify the claims of his supporters as to his executive adaptability and consequently to occasion regret that the service was not to be prolonged.



Agricultural Hall took its place on campus in 1909. Since 1947 it has been called Curtiss Hall in honor of former dean Charles F. Curtiss.

However, the board believed that the new era of restored prosperity and industrial expansion in which "greater Iowa" was participating called for a new promotive executive of national standing for a greater Iowa State College. After long searching, sifting, and screening, the members were convinced that such a leader had been found in the retiring commissioner of agriculture in New York, Raymond Allen Pearson.

The candidate certainly seemed in many ways well fitted to guide the destinies of the College in this era of expansion. At thirty-nine he had shown effective ability in organization and administration, and a facility in making strategic contacts. He had the strong endorsement of prominent educators, public officials, and farm and industrial leaders. Of

old New England ancestry, he was born at Evansville, Indiana, where his father was a railroad executive. His two elder brothers gained unusual distinction, one as a railroad president, the other as a research veterinarian. All three had attended Cornell University where their uncle, George W. Jones, had become a professor after leaving the Iowa Agricultural College. Raymond enrolled in the college of agriculture, majoring in the developing branch of dairy industry. He graduated in 1894 and earned a master's degree in 1899, following intermittent study. In 1910 Alfred University awarded an LL.D.

His professional advancement was rapid. Following formative experience as assistant chief of the dairy division of the U. S. Department of Agriculture, then the management of a commercial servicing dairy laboratory, in 1903 he organized and headed a separate department of dairy industry at Cornell. However, administration always appealed to him as a life career more strongly than teaching, and with the backing of the main state farm organizations he became head of the state's department of agriculture in the spring of 1908. His four year service, terminated by change of party control, was marked by a vigorous enforcement of regulatory measures and an effective cooperation with research and extension agencies. As a final service, the incoming governor engaged him to make an investigation of cooperative marketing in Europe, and he arranged to complete this assignment before entering upon his duties in Iowa in September, 1912.

With this background of experience and influential acquaintance, Pearson was confidently ambitious to obtain a college presidency. From his training and interest this would naturally be in the technical rather than the general

field. In addition to the Iowa position he was considering a tentative call to the Maryland Agricultural College. His personal interest in Iowa came not only from the early connection of Jones with the College but the continuing residence of another maternal uncle on a farm in Humboldt County where he had spent summer vacations in his boyhood.

► GAINS BOARD ASSURANCE

The final negotiations were somewhat prolonged. Pearson, with prudential foresight and the advantage of two strings to his bargaining bow, sought certain assurances: Agriculture, Engineering, Veterinary Science and such general subjects as essential would remain at Ames, regardless of what consolidation of subjects might be effected between the state's institutions; the trend toward divisional emphasis in the present administration would not interfere with full executive authority; the College would endeavor to meet the standards of the Carnegie Foundation for retirement; salaries would be increased to retain the abler professors, and it would be the intent "to considerably increase the salary of the President at as early a date as . . . practicable." The board was not in a position to guarantee all of these conditions, but there was sufficient agreement to bring acceptance. Pearson's high aspiration for the College, but at the same time his uncertainty in academic classification, was shown in the expression of the hope that in public service and relative standing it might be comparable to M. I. T. and Johns Hopkins.

During his early years the new president made a most favorable impression over campus, community, and state. He was affable, democratic, and in many ways adaptable.

His boyhood mid-western background gave him an acquaintance with the region. His experiences in New York and Washington brought an understanding of the ways of politicians, as the utility connections of his family gave an easy approach to big businessmen. At the same time he could address farmers as one of them, particularly the dairymen.

Students found him friendly, readily approachable, and sympathetic to their interests. A system of faculty advisers for freshmen was instituted, in which upperclassmen assisted. Two successive classes gave voluntary pledges against hazing. Fraternity heads were counseled with. The Cardinal Guild was encouraged in varied useful services, involving the regulation of conduct and the rationalizing of the growing round of activities. Best of all, in the view of the average undergraduate, the youthful prexy was in full accord with the desire for the big athletic program that the contemporary collegian was demanding.

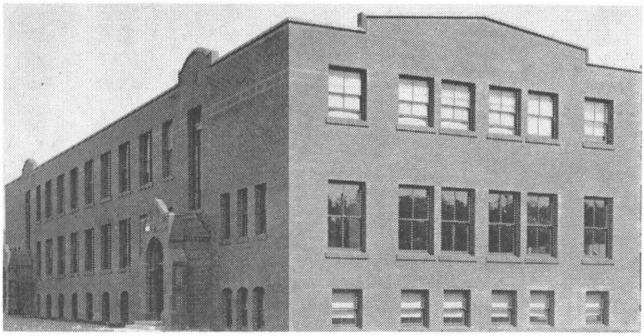
Socially, life at the Knoll and throughout the community was greatly stimulated by Pearson's marriage to Alice Dunsford, a woman of gracious charm, culture, and tactful understanding whom he had met in Albany where she was a member of the staff of the New York State Teachers' College.

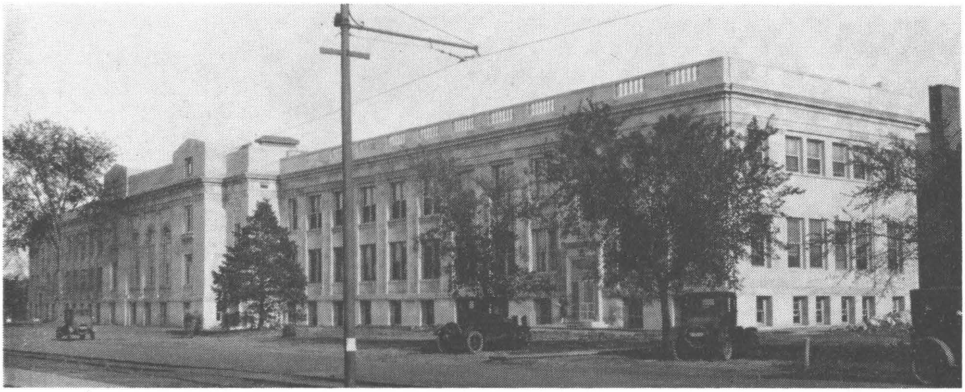
While fully aware of divisional unbalance and personal rivalries, Pearson sought to let sleeping dogs lie until they became annoyingly aroused. He gave unstinted public tribute to Stanton's service, and joined whole-heartedly in the homecoming welcome to Secretary Wilson and the recognition of the initial members of the twenty-five year club. However, the honeymoon season could not persist. As a matter of fact he had inherited controversies both within

President Raymond A. Pearson was president from September 1, 1912, until August 31, 1926, except when he was on military leave in 1917–18.

and without. Most immediate was a proposal of the board, just before Pearson took office, that all engineering work be given at the College and that in turn home economics and general science be transferred to the University. The consolidation move was vigorously opposed by both institutions. Alumni associations joined with hastily organized local groups to preserve what they regarded as their vested rights. Both candidates for governor that fall pledged their opposition. In the face of such a persistent stand by both of the rival institutions, the legislature requested that the order be withdrawn and the board reluctantly complied. In vain the president of the Carnegie Foundation assailed the proposal as political interference with what he held to be the true interest of higher education in Iowa.

With the main areas of the work of the College preserved intact, the way was open to complete the divisional organization. In 1913 Home Economics was accorded coordinate status with Catherine J. McKay as dean — a graduate of Drexel Institute and Columbia. The definitive establishment of the Division of Science, still under the temporary charge of Stanton, came only after a contest between the old rival ideas and interests that in its directness and bitterness was characteristic of the marked vocational trend of the period and especially of the emergence of an agricultural professionalism. Unprecedented industrial expansion had brought an emphasis upon "education for efficiency" from high school to college, which in effect meant a practical vocationalizing that found justification in "jobs" which were opening up on every hand for the technically trained. Agricultural graduates were sharing increasingly in these opportunities, in contrast to earlier limited demand. With all the agitation for consolidation, the position of agricul-





The largest home economics program in the world — that at Iowa State College — first had its own building of any size provided by the Domestic Technology Building, constructed in 1910. As can be visualized from these two views taken at approximately the same angle, this original structure then was incorporated into Home Economics Hall built in 1926 — the original building becoming the west section of Home Economics Hall as viewed here. Within these walls were developed such outstanding programs as research in home economics, initiated under Dean P. Mabel Nelson and carried on through the years by many others recognized on a world-wide basis — such as Dr. Pearl Swanson and Dr. Belle Lowe. Another area recognized world-wide as being particularly outstanding is that of Home Economics Education, for which Miss Florence Falgatter provided much of the stimulus. At the Centennial the leading home economics institution was eagerly looking forward to its expansion into a new northwest wing projecting approximately onto the spot originally occupied by Margaret Hall.

Further acknowledgment of the importance of home economics was accorded with evening extension classes in home economics in the 1910 period. Miss Neale S. Knowles is seated.

ture was secure in a land-grant institution, especially in a dominant agricultural state. With this changed situation there was the feeling that, at long last, the bottom rail had come to the top and there was a fixed determination to keep it there.

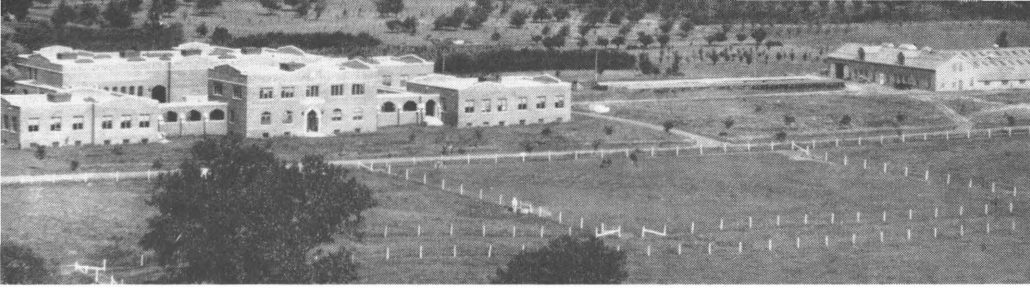
In the campaign against the removal of the general science course, the divisional leaders had sought to justify their essential functions in the institutional program and to strengthen their offerings both in relation to the needs of other divisions and of their own degree course. To give authoritative support to the basic place of general science in a technical institution, Pammel had secured supporting letters from representative scientists in the leading universities. The number and prominence of the writers were highly impressive. A change of divisional name to "Industrial Science" was proposed, as a more descriptive designation and one that indicated professional status. With the proposed new name went a curricular revision. In anticipation of future inter-relations of the general with special

divisions, five-year curricula in Science and Agriculture, Science and Engineering, and Science and Home Economics, and one of six years in Science and Veterinary Medicine were presented. The straight Industrial Science curriculum provided for major and minor work in particular sciences with electives in other departments, including the humanities. Up to twenty-four credits might be chosen from other divisions.

The special functions of the division were held to be to provide basic foundations for the work of the technical divisions and to train experts for the industries in the general sciences. There might have been added truly and realistically, though not expediently at this stage, "to furnish a general education with general science background for varied occupations and professions." A separate division with such a program and objectives, it was contended, had full authorization under the Morrill Act — along with the state's legal endorsement and interpretation in the Sutton Act.

Regardless of laws, federal and state, when the issue finally came to a showdown after various delays and postponements, the spokesmen for the Agricultural Division treated the whole plan for a science division as an insincere pretense. The argument presented by Vice-Dean Beach followed the straight vocational line. The name was held to be but a subterfuge since it was not an industrial but a general course "bordering on" the by-path meadow of the liberal arts. The proposed science and agricultural combination, it was warned, would discredit and lower the high standards of the Agricultural Division by turning out unprepared students to teach the subject in the schools.

To put the general departments in their proper place,



The Veterinary Medicine Quadrangle was built in 1912. Hog Cholera Serum Plant (top, right) was built in 1913. It was later used for Veterinary Research and was torn down about 1926. This view is looking west. At the Centennial the Quadrangle itself was deeply shadowed by the trees shown as mere saplings in the picture. The neat rows of fence posts in the foreground still were being maintained in the same pattern but by the Centennial were surrounding parking lots.

they were reminded that the true function of science departments in a land-grant college was to "support and sustain" agriculture and engineering and that it was "no secret" that the departments at Iowa State College did not do this adequately. As a possible improvement of these relationships a substitute plan was suggested in science courses especially adapted to agriculture, to be given at the senior and graduate level.

The science forces in a brief prepared and defended by representatives of varied subjects — Stanton, Pammel, Coover, Buchanan, and Brindley — gave specific and pointed reply to each of the allegations. Since the programs in Science were planned for professional work they were properly "industrial." The liberal arts cry was held to be a bogy, since the proposed program was less liberal than

some that had been offered in the past without protest and than the one that it would replace. They found the alarm over teacher training a false one as more agricultural students were teaching science than science students teaching agriculture, and the records showed as many failures among technical students as science. Prophetically for the mid-century Centennial times, they asserted, "From the standpoint of strength to the institution we need our science students in the High Schools of Iowa."

There was heated denial that their only cause for being was to serve as hewers of wood and drawers of water for the technical lines; they had their own proper and essential place in the land-grant scene. Consequently the subordinating substitute plan was wholly inadequate, especially as it made no provision for training at the junior college level. If the supporting work had been unsatisfactory, the fault was with the Agricultural Division in allowing no consultation in curriculum making. In conclusion they pled for a fair opportunity, both to serve other divisions and to develop their own appropriate line as essential to a "complete industrial institution."

Following a motion to adopt the science plan, Dean Curtiss for his division offered the substitute that while such science work as was necessary to support the technical lines be maintained on a high level, the degree course in science should be abolished and no similar course established. The substitute was lost by a vote of eighteen to twenty-seven and the new science course was thereupon adopted in 1913. An off-the-record but authenticated analysis of the vote reveals that the agricultural block of fifteen, with only one absentee, had but one opposing vote, by a professor of broad outlook and interest who was shortly to leave the staff. The remaining four opposing votes were secured from the

twelve cast by the Engineering Division, whose delegation had six prominent absentees including the dean. The other technical divisions were clearly unwilling to be parties to the agricultural strategy of dismemberment.

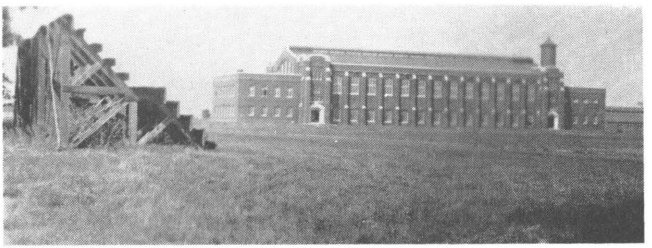
It can be only a matter of speculation whether the board and the legislature with the pressure of the alumni would have allowed the drastic negative step. The decision was a crucial one, second only to the Sutton Act in the maintenance of this function of the College. The struggle was regarded with much concern by other land-grant colleges, and the outcome was to be decisive for the future. While rumbles of the old differences were heard from time to time and the issue involved was to some extent a relative one, such a deliberate backward step, defying both the letter and spirit of the Morrill and Sutton acts, was not again suggested.

Following the blocking of the negative forces, positive ones began immediately to operate. A recommendation of the board of deans that each division should have the privilege of sending representatives to the faculty meetings of the other divisions was enacted at the next meeting of the general faculty. Soon after, Stanton reported a resolution of the Science Division that subjects required by other divisions should be outlined in fullest cooperation with the departments concerned. Stanton returned to his teaching and the headship of the Junior College. Buchanan, after temporary headship of the old science division became the first dean of Industrial Science. Thus after trials and vicissitudes the program of general studies was for the first time clearly delimited and organized on a coordinate basis.

The capsheaf to the divisional organization was that of graduate study. Post-graduate work, as it was termed, was offered from the graduation of the first class, with the work supervised by the general faculty to 1898. The first master's

degree was conferred in 1877. The master of science degree was the only one conferred until the late seventies when the use of technical bachelor's degrees was followed by the corresponding masters'. In 1909 the uniform bachelor and master of science was adopted except for Veterinary Medicine.

With the advances of the Beardshear era a special "committee on post-graduate studies" was appointed. The committee seems to have been selected more on the basis of the



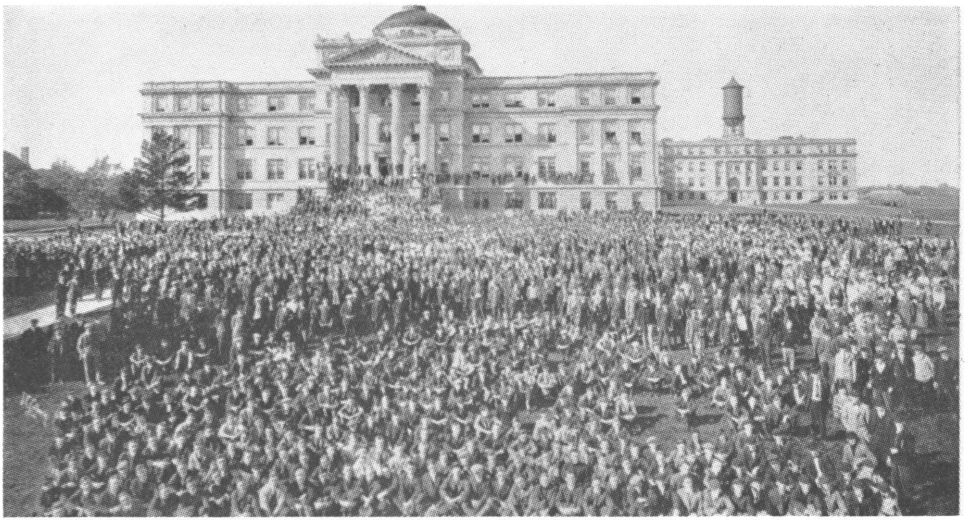
The Men's Gymnasium was built in 1913. The Machine Shop (Mechanical Engineering Laboratory at the Centennial) can be seen at the right. West Bleachers of concrete were built in 1914.

personal interest in research than of subject balance. Pammel of botany and Henry E. Summers of zoology were especially active members. The committee was greatly concerned with developing systematic procedures and relatively high standards of work. A reading knowledge of German and French, and the writing of a thesis demonstrating original research were required. In line with the growing interest in the technical subjects during the first decade of the new century, the advanced degrees were conferred largely in the divisions of Agriculture and Engineering.

From about 1910 the accelerating demands of industry and government for trained experts, and progressively

mounting college enrollments created unprecedented demands for graduate training for both teaching and research. The doctorate was beginning to be demanded in academic circles, and gaining respect in commercial and governmental service. The influence of pioneer graduate centers was rapidly spreading. The Ph. D.'s which previously had been largely earned in Germany were becoming fully domesticated. Pearson found some ten staff members with earned doctorates and several more were nearing that dignity. These and others with research interests and ambitions were a stimulating nucleus for a distinct organization and program. The aspiring president was characteristically zealous for this essential unit of a complete modern academic enterprise.

With such incentive and stimulation the organization proceeded directly. The catalogue for 1912–1913, in advance of formal authorization, stated boldly that in the "near future" all advanced study would be conducted in a "graduate college." In May, 1913, at the time of the general science imbroglio, the faculty — on prompting by the deans — recommended such an establishment to the board. That body responded with the creation of a division with the president in temporary charge. During the next two years a committee on organization brought the program into function. A survey of the main departments found inertial influences in overburdened staff, inadequate plant and library, and the less tangible "absence of research atmosphere." In departmental preparedness they concluded that eight departments were ready to undertake work for the doctor's degree: in agriculture — agronomy, animal husbandry, agricultural chemistry, and horticulture; in engineering — economic geology, and in science — bacteriology,



In 1914 the entire student body of approximately 2,800 assembled for this picture on central campus.

botany, and zoology. Most of the other departments had reached the master's stage. The three bienniums preceding and during World War I were notable, not only for increase in numbers and areas in which the master's degree was conferred but in the awarding of the first doctorates. During the years 1915–1918 five were conferred: two in botany, two in agronomy, and one in genetics.

Interrelated with the graduate research and often providing the subjects of it were the increasing number and significance of the projects of the experiment stations. The investigations were timed and directed to current problems of the farms and industries of the state. For instance, new sections of bacteriology and farm management concentrated on areas of increasing concern.

The parallel extension services were becoming increasingly effective in narrowing the gap between the finding and using of the new information. In 1912 the extension department of the Agricultural Division became an inde-

pendent service with a director responsible directly to the president. The same year Holden resigned to run unsuccessfully for the gubernatorial nomination. Following temporary direction for two years, Ralph K. Bliss, '05, who had served under Holden was recalled from Nebraska (where he had headed animal husbandry) to organize the program and recruit a staff. He was the real founder of the modern service. Under his competent and understanding guidance the service had become well established by the time that the emergent demands of world conflict were forced upon it.

► PRESS FOR NEW NAME

With all these manifestations of growth and maturity in personnel, program, buildings and equipment, and student activities there was a concerted agitation among students, alumni, and a portion of the staff for a change of name and nominal status of the institution. In popular usage and thinking the transition from an agricultural to an A. and M. College had never been fully made. The public in and out of the state more often than not still referred to it as "Ames" and student songs, yells, and symbols centered about that name. There was also the feeling that the reality of organization and function should be recognized in the formal title "university." In this rechristening proposal there was lacking the advantage of an appealing benefactor's or historically significant regional name. There had been no Clemson, Cornell, or Purdue in its annals and the relations with the little city from which it was separated by farms and streams had not always been harmonious or the source of material aid. However, Ames was a short and convenient name that had been sounded around the

nation and the globe; it had served for a football slogan, and with "university" added would not be lacking in dignity.

Pearson was in no way averse to the university aspiration. He had become increasingly restive with the policies of the board which he felt tended to restrict the normal growth of the College and to hamper his authority. He felt that since he was not a member of the board, all administrative policies should be submitted to him before being acted upon. Especially he was incensed at the hampering interference and encroachment, as he regarded it, of the finance committee.

In 1915 an invitation to return to the New York commissionership prompted the submission of an extended specific bill of grievances in a letter to the president of the board. In addition to his keen dissatisfaction over lack of full consultation on policies, he was impatient with the delay in effecting the increase of his salary. Pearson's withdrawal after such a short tenure would have reflected unfavorably on the judgment of the board and emphasized the dissention and instability of the administration of the state's higher education. Accordingly, sufficient assurance, not of specific record, was given to induce him to agree to remain. His decision was greeted with great satisfaction in a memorial of the board of deans and by the college and state press. This round could clearly be scored for the executive.

By the hazard of politics, to which he also would have been subject in the New York position, he missed the possibility (many felt probability) of his appointment as Secretary of Agriculture had his former chief, Governor Charles Evans Hughes, been elected to the Presidency in 1916.

With the adjustment, temporarily at least, of the internal affairs of the College there remained the continuing and intensifying inter-institutional rivalries, jealousies, and

general misunderstandings extending from courses of instruction and areas of research to football. To overcome such disruptive influences and still to achieve something in the way of combating the spectre of duplication short of divisional consolidation, the board in 1915 secured the first all-out survey of its three main institutions. The federal bureau of education was asked to organize and supervise the investigation to insure authoritative talent. The group, headed by the bureau's expert in higher education Samuel P. Capen, was a distinguished one, including Angell of Chicago, Bailey of Cornell, and Hughes of Miami (Ohio). The board had indicated certain specified areas of possible duplication or doubtful inclusion, but the commission decided to get a general view of the whole scene. Letters were sent to leading business and farm organizations and to representative professional leaders. Key state officials were interviewed. Eleven days were devoted to inspecting and interviewing at the three institutions, five of which were spent at the College.

► SPECIFIC RECOMMENDATION

The findings from the observations and hearings, extending to over half a hundred recommendations, were not lacking in specificity. The central problem of institutional rivalry would be adjusted by regarding the three institutions as branches of one university, with the lines of instruction and research to be distributed on a functional basis. The determining "principle" in such a division was to be that of major and service subject areas. By this test engineering should be centered exclusively at Ames, but "popular sentiment," they conceded, would probably necessitate keeping certain special branches at Iowa City. The last two years of the Teachers College should be lopped off,

as its sole function was to train elementary teachers (who supposedly did not merit full college training).

The College, in their opinion, offended more grievously in the general field than the University in the technical. The most alarmist chapter was entitled, with curious exaggeration and confusion of terms, "Liberal Arts Work in the Iowa State College." According to the commission's strict application of their determining principle, general courses were justified only as a direct support to the main technical divisions. This test indicated that several departments were guilty of outlaw offerings. But most dangerous of all the possible trespasses and sins of the College was the design to smuggle in a course "in liberal arts and sciences, leading to a non-technical degree in general science or in arts."

► URGE "SAFEGUARD"

The inquisitors accepted the word of the college officals that any such dire design was not then contemplated, but commission members were convinced that it had been in the past and they were fearful that the non-industrial major work in the Industrial Science Division might lead to a course no less objectionable. To safeguard against such a perversion of the land-grant program, according to their interpretation, the requirements of the Science Division should be revised "to make it impossible to secure the degree except on completion of industrial and professional courses (in contradistinction to liberal arts courses) equal in amount to those required in technical curricula."

Graduate study should hew to the same strict line of major concentration. Beyond this nothing but supporting work should be allowed. Borderline cases of possible duplication should be passed upon by a committee of the board and of the two institutions.

In the survey of institutional administration, the pertinent recommendations were that in view of criticism of present policies and of possible future complications, "the strict definition of the powers and functions of the finance committee" be made. This recommendation was to be repeated in later investigations as was one that the presidents be made ex officio members of the board. "Due to the feuds, charges, and countercharges" attending the annual events, a moratorium of five or six years on College-University games was suggested.

The most scathing rebuke was reserved for the suspicions and petty institutional jealousies between the alumni, staff, and students of the two institutions. The fact that in spite of such hostile relations the institutions had "attained such commanding rank" indicated that "Iowa's difficulty [was] largely a state of mind." (The master minds were not suggested.) The final exhortation was for the "substitution of cooperation for competition...in the adjustment of the relations of the two institutions."

The advice was wholesome; but the means suggested to realize the desired relations were dubious and unrealistic. The views of both technical and teacher training were narrow, savoring of the "job analysis" theory of education. The limitation placed upon the scope of land-grant education was directly contrary to the Morrill and Sutton acts. As Stanton had asserted in 1890, the great need was to carry out the enabling laws in their true spirit. A more realistic "principle" of determining subject matter was that of social need and availability. This was recognized by the investigators themselves in the recommendation that, regardless of the magic major test, no restriction be put on the training of vocational teachers until the need was met. The vision

even of these masters failed to penetrate to the not distant time when all capable institutions of higher learning — general and special — would be crowded to the limits to provide the training that the age of technology demanded. Meanwhile each type of state institution should have been encouraged to develop its program in the fullest, most liberal manner. It was a time to broaden and expand, not to narrow and restrict. The course for institutional leadership was clearly to recognize the mutual advantage of each member realizing its fullest mission, as that for state and national policy was to lend encouragement to such a constructive adjustment.

Regardless of the judgment of highly placed experts, the future of the state's educational institutions would depend primarily upon public opinion as determined by popular services. In this the College was especially fortunate. The practical findings and servicing of the stations, and the extension services for farms, industries, homes, and schools — along with the availability of the type of general education provided — was bringing increasing confidence and support. The College was steadily and effectively adjusting its services to the needs of the expanding state. Whether generally recognized or not, this representative land-grant college had met the central problem of reconciling the liberal and practical with measurable realism and effectiveness. In this promising situation for higher education, as in other aspects of normal advance, World War I proved a highly disrupting factor.

Chapter 4

Testing Under Pressure

THE MODERNIZING ADVANCE in organization and program was brought to an abrupt and jolting halt by the coming of World War I, which immediately absorbed the interest and effort of higher education, as of every other phase of national life. As the first trial of "total war" the struggle made special demands upon the land-grant system of training and research.

On the military side, the war provided the first effective test of the training requirement of the organic act. The indifferent neglect of this department by Congress, in inadequate provision for staff and equipment, had long been deprecated by a small group of executives in the land-grant association. Unfortunately too many administrations and staff members were content with a minimal compliance.

The coming and extension of the war in Europe brought an awakening shock — to all but the hopelessly illusioned — a realization that it could happen here. In December, 1915,

the War Department insisted upon the addition of a second year of drill and the next year, as the collegiate part of the defense act, there was established the full Reserve Officers Training Corps. The faculty immediately petitioned for such a unit.

Ideologically the campus was no less conditioned for the fateful day in the spring of 1917. Throughout the preceding year group discussions and lectures by alert publicists on war issues and international alignments, with the consequent obligation of full preparedness, more than offset the complacence of speakers like ex-Secretary Bryan. By the beginning of 1917 staff and students were becoming fully alerted. A relief fund — a forerunner of war "drives" — was raised for students in war prisons. In March, sixty staff members applied for a reserve unit and began immediate training. Faculty, alumni, and students were polled for special experience and training for war service, and plans were laid for summer officer training camps, two troops of cavalry, and a company of engineers. To show their zeal for preparedness the faculty declared for compulsory universal service.

With such a degree of preparation, following the declaration of war the College became self mobilized in advance of national regulation. Drill twice a day was decreed for all able-bodied students in which some two hundred staff members willingly joined. The women entered no less actively upon Red Cross and conservation projects. Two hundred eager students enlisted before the end of the college year and three hundred left for farms and factories. To accommodate student employment and to accelerate technical training, the work in these divisions was speeded up and a new fall term started in November for late comers.

To meet an emergent need for trained veterinarians the work in that division continued through the summer. Another special service was met by the organization of an ambulance unit which departed for special training on May 31. It was to render effective service on the Italian frontier.

President Pearson set the example for special staff service by joining the Department of Agriculture early in April as one of two assistant secretaries for food production. The board reluctantly granted the leave at this crucial time and turned to the ever reliable Dean Stanton for the fourth and last of his acting presidencies. It was, it may be added, by far the most difficult and exacting.

In seeking to unite the varied resources of the College for the common cause, the task of the veteran administrator was facilitated by the freedom from the controversies over alleged disloyal conduct and sentiments that disturbed and divided campuses and communities in adjoining states. The few charges of the sort that were made proved to be wholly unjustified. A manifestation of this unity and devotion to the war effort of College and community was in the "war commencement" on June 6, 1917, when the speaker was none other than ex-President Taft whose lectures at the College the year before had received state-wide acclaim. To judge from reports and a sketchy stenographic summary, this was one of Taft's most impressive and unrestrained addresses. It was a rallying cry to the whole state as well as to its College.

This full commitment was most fortunate for, as Taft had pointed out, the land-grant colleges were vital training centers. One of the most involved problems of the selective service act was to train and adjust the technical experts that

Facilities of all of the divisions of the College were utilized to their maximum in World War I. Here is a special school in telegraphy set up on campus.

modern warfare demanded. A special committee on education and special training was created in the War Department with a civilian board of key educators and specialists as advisers. Pearson was the land-grant college representative. With the lack of experience in adapted curricula and administrative direction and supervision, the training programs were of necessity delayed and in many respects experimental.

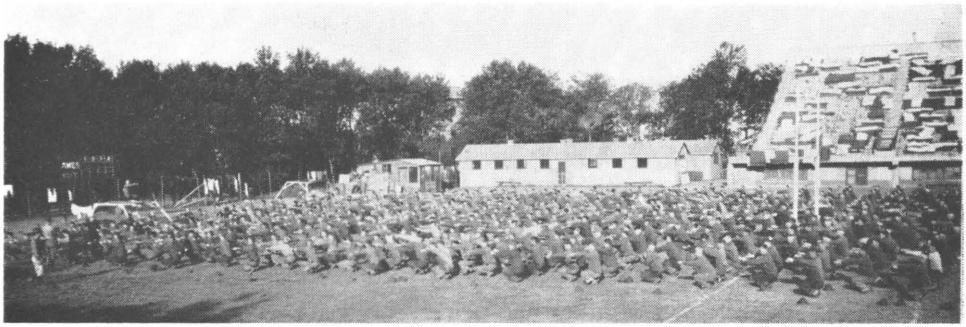
The most immediate demand upon technical institutions was the training of selected contingents of drafted men in mechanical trades and special skills. Beginning April 15, 1918, such trainees were given an eight-weeks' course for auto mechanics, blacksmiths, or machinists. The instruction in practical assembly, operation, and repair was under the direction of W. H. Meeker of mechanical engineering.

Provision for the combination of collegiate study with

military training presented a much more involved problem but it was mandatory if higher education was to continue to function in the majority of institutions. Under the regular operation of the conscription system all able-bodied males over eighteen would be included in the armed forces. The plan in the manpower act of August 31, 1918, sought to combine campus and army camp, scholastic study and military drill, and military discipline with collegiate administration. Students from eighteen to twenty-one were to be voluntarily inducted into active service with regular compensation, and the institutions by contractual agreement were compensated for housing and subsistence. The collegiate and vocational sections of this so-called Student Army Training Corps were kept distinct in housing and instruction. The mechanical group was housed in improvised barracks under the bleachers, with the collegiate group in fraternity houses.

As scheduled the army requirements did not appear excessive. In the collegiate section the military claimed 11 hours as compared with 42 for the non-military, and in the mechanical the proportions were 15½ to 33. The special required subject was a three term survey of war issues — historical, institutional, and philosophical. This key course was directed by L. B. Schmidt, of history.

The collegiate program was inaugurated October 1, 1918, with the ceremonial induction of twelve hundred students into the national army. Here, as elsewhere, the program was beset with immediate and continuing obstacles and complications. The brief time available for planning led to confusion and disorganization which the flow of directives and suggestions by regional supervisors did little to correct. Depletion of the staff by enlistment or special war service



The impact of World War I on campus life was noted in part by activities such as these morning calisthenics on Clyde Williams Field in front of West Stadium.

necessitated emergency substitutions and improvisations. The dual system of administration inevitably brought misunderstandings and intermittent contention where it did not lead, as on some campuses, to open rupture with necessitated change of commandant. Relations did not come to this impasse at the College but misunderstandings between Stanton and Lincoln — the respective educational and military veterans — reached a tensity of difference at one time that necessitated the mediation of mutual friends on the board.

To these organizational difficulties was added in the early days of the term the prostrating scourge of influenza. Medical and hospital facilities were taxed to the limit, strict quarantine was placed on the campus, and travel from the fourth ward to the city was restricted. For a time all work was suspended and the outbreaks of the virulent epidemic continued to disrupt the program until demobilization.

Aside from these limiting conditions, the program had too short and incomplete a trial to provide a basis for conclusive appraisal before the dissolution that followed the armistice. Some parts of the program were not tried at all, as, for instance, two divisions of the war issues course. Brief and incomplete as the experience was, however, it provided

some pointed lessons for any similar future program: the need for more definite objectives; a moderation of the physical training that would allow time and energy for adequate study; and a clear allocation of institutional and military authority.

The research and extension services were no less active in the war effort. The agricultural station centered attention on increased production and utilization of food, and the engineering did the same for war industries. The extension services for their part helped to organize and mobilize the farms and industries. Experts in chemistry, bacteriology, veterinary medicine, and engineering were utilized in Washington and abroad. Others engaged in teaching and recreation work in the camps. In addition to their heavy teaching and research loads, many aided in campaigns for the Red Cross, war charities, and the bond sales.

All in all, the total record was impressive: the early formed ambulance corps, the induction of some 1,600 in the collegiate section of the SATC, and nearly 2,000 in the mechanical, an institutional service roll of about 6,000, and very appreciable contributions to war production and morale. In the first clear test, this representative member had met fully its obligations under the land-grant act.

► ENROLLMENT SURGES

Following the inevitable confusion of adjustment to a peace basis, the enrollment reached new heights as it did in other colleges, especially in the technical. The technological advances hastened by war gave especial demand for the land-grant college programs. The special veteran training swelled the total appreciably until the demand was met. Engineering and home economics were particularly in de-

mand, and veterinary medicine, science, and the graduate work held steady throughout the decade. Agriculture alone, following deflation, declined from the middle twenties.

The resulting shortage and overcrowding of buildings and equipment found relief in major expansions of area and buildings. The most notable were the armory, library, physics, new home economics, and agricultural engineering buildings, and the purchase and equipment of three additional experimental farms.

► PERSONNEL CHANGES

With a reorganization of the program in the post-war years there was an unusual replacement and addition to personnel. The deaths of Deans Stanton and MacKay, Vice-Dean Beach, and General Lincoln within three years (1920–1922) left large voids. Colonel Marston returned to his deanship in Engineering. To replace Buchanan, who was made the first dean of the Graduate College, Beyer was transferred to Industrial Science, bringing geology with him. Anna E. Richardson was brought from the federal board of vocational education to head Home Economics. Maria Roberts of mathematics became dean of the Junior College. John E. Foster came from the state department of education to serve in the new position of dean of men and to direct the summer quarter. Charles H. Brown was secured to direct the library and James F. Edwards the health service. In the business and record offices, Herman Knapp became business manager and treasurer, and James R. Sage, registrar.

The period also marked the selection of an unusual number of heads of major departments: in Agriculture — Henry H. Kildee, animal husbandry and vice-dean; Ernest

W. Lindstrom, genetics; Bethel S. Pickett, horticulture; Philip H. Elwood, landscape architecture; William H. Lancelot, vocational education; and Blair Converse, technical journalism; in Engineering — Almon H. Fuller, civil; Orland H. Sweeney, chemical; Paul E. Cox, ceramic; and J. Brownlee Davidson, recalled from the University of California, agricultural; in Science — Edwin R. Smith, mathematics; Carl J. Drake, zoology and state entomologist; John E. Evans, psychology; Tolbert MacRae, music; and Pearl M. Shaffer, military science.

The work of all the divisions was greatly strengthened in these years by the addition of a remarkably large number of brilliant scholars and inspiring teachers. In nothing else was Pearson's administrative skill better shown than in his genius in selecting key heads who could appraise and attract adaptable talent.

During the 1920's the social sciences came more nearly to coordinate position and status. Up to the world war era this area had kept largely to the conventional in subjects and emphasis. The economic and social problems of the new industrial regime, hastened and intensified by war and the consequent expansion of governmental functions, brought insistent demand for special applications. Hibbard had offered a course in agricultural economics with special emphasis upon marketing as early as 1904. Following his resignation in 1912 the work in this area was given in farm management in the Division of Agriculture. In 1916 Von Tungeln was made chief of a section of rural sociology in the station. Two years later Edwin G. Nourse was secured to develop advanced courses and conduct research in agricultural economics. In 1921 the three lines of agricultural economics, farm management, and rural sociology were

united in one section and sub-department as a branch of the general department of "economic science, applied economics, and social science" headed by Brindley. Further special interests were served by the development of consumption economics for students in Home Economics by Hazel Kyrk and Elizabeth Hoyt, and of industrial economics for engineers supervised by George M. Fuller. The technical branches were administered jointly by the divisions concerned and Industrial Science. Brindley's own special field was public finance and, on several occasions, he served effectively as a research expert for legislative investigations on taxation. A similar public service was to be rendered a generation later by a successor in the department, William G. Murray.

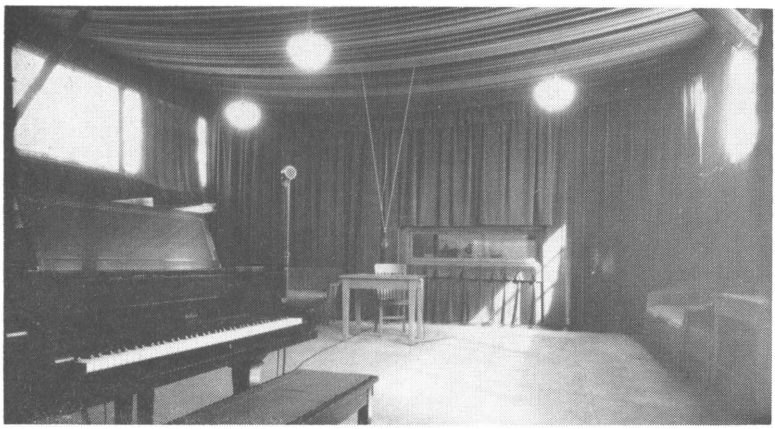
► SET SEPARATE UNITS

A trial of the administrative integration of the social studies was made, in 1924, by the transfer of history and government from psychology to economics. With less adaptability for direct practical applications than the other members of the group and the consequent lack of provision for organized research, these subjects proved to be more appropriately organized by themselves. Accordingly, in 1930, the separate department was created under the headship of Louis B. Schmidt, who had been in charge of these courses since the retirement of Cessna. Schmidt, in addition to developing well balanced curricula in economic history and applied government, pioneered in the development of agricultural history as a distinct subject for teaching and research. He prepared manuals and collected and edited materials for study and made substantial contributions in numerous research papers and monographs.

After dropping off history and ethics, modern psychology under the guidance of the able and astute John E. Evans developed programs of increasing demand in teacher training, personnel and business psychology, and clinical training. The department also became a general servicing agency to the institution in a testing and counseling bureau and in the safety program.

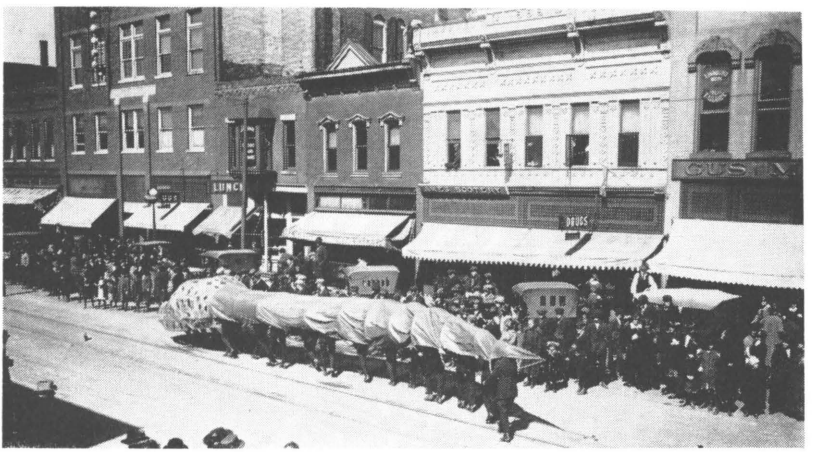
With the rounding out and coordinating of the main areas of study and research, there was among staff and students a manifestation of unity in the institution as a whole rather than in particular divisions. In 1919, the semi-centennial celebration of the beginning of instruction was an occasion for retrospection on the attainments of the integrating College. One important product of this observance was the beginning of the systematic collection of the archives and other pertinent records, and the creation of a standing committee on the history of the College. Historical consciousness was further manifested in the dedication of groups of trees to the memory of early founders and professors. Most enduring of all the memorials was the Stanton endowment for a carillon — one of the few in the nation. The pioneer radio station WOI was a general institutional enterprise participated in by all divisions. The Graduate College united all areas of research under the direction of a committee representing all divisions. Research was further unified by the establishment of a chapter of Sigma Xi, the second in a land-grant college, the publication of the *Iowa State Journal of Science,* and the founding of a college press.

Students and alumni were no less "big institution" conscious. In 1922 the old divisional spring carnivals were merged in the one institutional exhibition called Veishea,



In the early days cf radio, Iowa State College was pioneering the sharing of knowledge by air over its radio voice WOI. This medium and its adaptations were kept abreast of the times from the first day of broadcasting. Here is the WOI studio of the 1920's. At the Centennial Iowa State had three "voices" — WOI and WOI-FM in radio, and WOI-TV in television.

from the initials of divisional names. At the same time there was an intensified renewal of the agitation for designating the divisions "colleges" and the institution a "university." Pearson continued to be fully and aggressively committed to this change in terminology as a recognition of the realities of organization, program, and standards. The limited designation was, he felt, misleading in popular and professional rating and hence a handicap to the graduates. Furthermore, to meet fully the true functions of a land-grant university, as provided by federal and state laws and developed by other representative institutions, the offerings should be widened and enriched by a fuller development of general subjects. He pointed out in his final report that in the past the College had "made less rather than more enlargements and developments than are needed or would be justified."



May Day festival was started in 1907 by the Women's Athletic Association to honor senior women in ceremonies highlighted by the presentation of a "queen." The first Ag Carnival was held in 1912. This parade through downtown Ames led to the carnival midway with its attractions, contests, races, broncho breaking, mule riding, etc., with vaudeville at night. The student Saint Patrick's Day was originated in 1910 by civil engineers and among other things included parading through downtown Ames, as well as engineering exhibits, and entertainment in the evening.

All three of these were discontinued in 1922 when Veishea was established as an all-college festival. By the Centennial, Veishea had become the largest student operated festival in the world. A more than two mile long parade included nearly thirty marching bands as well as colorful floats, attracting an estimated 100,000 viewers to the campus. Comprehensive educational displays set up by students in each of the departments — featured especially on the period designated as "high school day," — were gaining emphasis over the parade and other pageantry at the Centennial.

These aspirations, which extended to full coordinate status with the state's University at every point and to equality with the leading land-grant universities, brought complications and conflicts within and without. The "big" athletic program led to turmoil and unfavorable publicity. In the spring of 1923, following adverse fortunes, a popular but dissentious director was dropped. In protest a student demonstration, fomented by an incendiary harangue by a prominent local alumnus, evolved into a riot of unexampled violence. The episode led to a reorganization of the athletic program with the aim of giving the faculty more effective control. A group of 24 student leaders recommended that resignations of Director Mayser, football coach Milan and track coach Smith be accepted; that Pearson, Coover, Beyers and Curtiss resign from Athletic Council, that student representation be added. Alumni meeting at commencement in 1923 endorsed the student recommendations plus increased alumni representation on the council. These

recommendations were carried out. It was a strain on institutional morale and increased the opposition to the administration by certain local alumni who were already disgruntled over the perennial issue of the location of a city to college highway.

In the expansion of plant and program, sharp differences arose between president and board; location and size and design of buildings occasioned disputes and misunderstandings. This was notably true in the construction of the armory. The executive recommendation for acquiring a square block, largely vacant, west of the campus for a men's housing area was farsighted, but this plan for preventing overcrowding of the main quadrangle was ignored.

Pearson's ambition for developing new lines of work ran counter to the desires of an economy minded board. Technical journalism and forestry were subjects promoted against their desires. Of more personal interest, misunderstandings over the adjustment of the president's salary continued to arise from time to time throughout his tenure. On their side, certain members of the board maintained that Pearson in his desire to carry out his plans ignored or sought to circumvent the board's decisions.

► CONFLICTING PERSONALITIES

No less disturbing than conflicts of policies were those of personalities. Pearson's standing grievance was the alleged encroachment of the finance committee, and that involved in the main its energetic and highly opinionated chairman, William R. Boyd. The president alleged that the chairman lacked appreciative understanding of the function and needs of the College and that he was markedly partial to the University. Boyd purported to believe that

the ambitious executive was constantly scheming to secure his ends regardless of the wishes of the board. At the time and in retrospect, neither in any way disguised his opinion of the other.

In this testing era for higher education in the state it was tragic that the heads of the two leading institutions, who for the advantage of each as well as of the general interest should have been pulling together in full cooperation, were openly hostile rivals for support and popular favor. In training, personality, and temperament they were contrasting; the only point they had in common was birth in the Hoosier state. Walter A. Jessup had secured his foundation education in two small church colleges in his native state. After experience in public school work he became a specialist in educational supervision, receiving a doctorate at Teachers College, Columbia. He headed the colleges of education of Indiana and Iowa before becoming president of the latter in 1916. Jessup had rare skill in public relations; he could make an acquaintance permanently on first meeting. He had a mental personnel sheet — considerably elaborated — of every state official and of other key people in all parts of the state. He had been particularly fortunate in tie-ins with the early educational foundations, especially the Carnegie Foundation which he was to head in his later years. Thus he had a ringside view of the educational scene in general as well as a strategic approach to large benefactions, for special projects. In contrast to Pearson's nervous perturbation, Jessup could placidly await the fruition of his well laid plans.

While disturbing enough, if the institutional conflicts of these years were but a clash of ambitious personalities, academic and governmental, they would not merit more

than a passing regret in the annals of the College. But the acute differences, appearing not for the first time and by no means for the last, were a reflection of the lack of acceptance of the full land-grant program, in subject matter and standards, and in consequent official and professional status. Similar misunderstandings appeared in every state where there was a separate land-grant institution. In a discussion in the land-grant association in 1926, President E. C. Elliott of Purdue asserted that no state had been able to resolve the differences of the "condescending attitude of the universities and the over-pretentions of the colleges."

In the same session — a joint meeting of the associations of land-grant colleges and state universities — Jessup read an almost startlingly frank paper, in view of the current situation in his own state, on "The Problem of the Separate State University and the Separate Land-Grant College in the Same State." He considered the abuses "due to envy, jealousy, selfishness, ruthless indifference." The desirable adjustment, in his view, was for each institution to develop most fully its own particular lines without encroachment on the others. Such a harmonious solution, he recognized, had much of wishfulness by reason of the visions of grandeur of alumni, students, and faculty. But, he warned, with rapidly mounting costs, public patience was wearing thin. However, even a realistic administrator might dream, and he closed with a beatitude to a utopian state system: "... fortunate is the state in which these two institutions come to a clear understanding and agreement as to policy and function to the end that rivalries and shortsighted temporary advantages give way before the demands of a well rounded system of tax supported and publicly controlled higher educational institutions."

Obviously it all came back to what the proper functions of a university and a land-grant college were. One would like to know if Pearson, who was then a delegate from the University of Maryland, heard this paper. If so, something of his mental reaction can easily be imagined.

There was frequent reminder that this, as other state universities, was condescending toward its culturally poor relation at Ames. In an 1894 review of a sketch of higher education in Iowa, President Josiah L. Pickard observed that it dealt with all grades of education "up to the State Agricultural College and, the capsheaf of all, the State University." There were many evidences that this was the dominant opinion of the nine member board created in 1913. The main adviser was Henry S. Pritchett of the Carnegie Foundation whose views of land-grant education were highly dubious – especially of the agricultural division. The first report of the central board conceded that while the question of trade school versus college was a moot one, the board was of the opinion that the state had decided wisely in founding a college. In the same report there was a folding map of the campus of the University but no similar guide to that of the College. For the first half dozen years at least the official minutes continued to use the designation, the "College of Agriculture" or the "State Agricultural College."

In Jessup's paper in 1926, with deliberate well-nigh ostentatious belittlement after three decades of the modern title, he referred to "the University of Michigan at Ann Arbor and the Michigan State College of Agriculture and Applied Science at Lansing, Michigan; the University of Iowa at Iowa City and the Agricultural College at Ames; the University of Indiana at Bloomington and Purdue at

Lafayette." A stock amenity of the "Athens of Iowa" for its country cousin was, "one of the greatest agricultural schools in the country."

With assumed fitness by Jessup and the board but to the chronic exasperation of Pearson, increase in executive salaries usually came first at the University and remained a notch higher.

From its side the College at times stood on its dignity and asserted rights that might by unfavorable critics have been regarded as captious or reflecting a sense of inferiority. In 1911, the college day address of Governor Beryl F. Carroll was reprobated by the students of the engineering and science divisions for lauding the agricultural to the neglect of other divisions. Pearson was quick to spot and protest to the secretary of the board any actual or rumored encroachment by the other institutions. He disagreed with the other two presidents on the interpretation of vocational training under the Smith-Hughes act. An incidental offering of agricultural work in the summer session of the University was the occasion of a three-cornered correspondence. A rumor, later denied, that the University annual was being distributed to high schools was protested as a violation of the ban on the use of both the *Hawkeye* and *Bomb* for promotional purposes. Pearson complained to the secretary in the turbulent spring of 1917 that the University had stolen a march by issuing a circular on its legislative askings, and proposed that the infraction should be balanced by a publicity statement from the College. In spite of the strict limitations of the general statement of each of the institutions in the biennial reports, Pearson persistently importuned the finance committee for increased space.

In contrast to the spotlight accorded the Agricultural

Division of the College, spokesmen of that interest complained of its inadequate representation on the board. When George Godfrey was appointed in 1927, *Wallace's Farmer* commented, "For the first time we have a real dirt farmer on the State Board of Education — one out of nine."

In the midst of this inter-institutional feuding, the members of the board — whatever their prejudices and lack of vision — were faced not with theories but exacting conditions. In a period of disparity in farmer income, adequate biennial appropriations for mounting capital and operating expenditures were hard enough to secure without the complications of alumni and special interest rivalries. Economies thus were a matter of necessity rather than choice. The question, as always, was where they should be made.

► NEW SUBJECTS IN PERIL

Since consolidation of any of the major divisions was definitely out of the picture, subjects not fully established seemed to offer the best chance of retrenchment. In the College, degree courses in forestry and technical journalism, which Pearson had encouraged against the judgment of the board, seemed most vulnerable. To overcome the usual professional, alumni, and local opposition to any proposal of dismemberment, the board again sought counsel of the experts. The legislature was persuaded to authorize another survey, but on a much more modest scale than that of a decade before.

The two men chosen were the chairman of the previous survey, S. P. Capen, now president of the University of Buffalo, and George F. Zook, president of the University of Akron who later was to refuse the presidency of the University of Iowa. Their findings, in 1925, were in sharp

contrast to those of the previous report. Iowa higher education, they asserted, had made greater progress during the decade than had that of any other state with separate institutions. Their appraisals and recommendations were predicated upon the full and absolute equality of the College and the University. By every test that might be applied the College was a "technological university." Thus neither was "entitled to priority of recognition by virtue either of its history or of its name."

As to the bugbear of duplication, the team was reassuring; they found no serious threats of it. Several suggestions were made largely by way of clarification. As regarded the College the discontinuance of the degree course in forestry was recommended, and its exclusive right to the training of vocational teachers affirmed.

The only wrist-slapping concerned inter-institutional relations. They purported to find this situation markedly bettered. But they warned, hostilities might be renewed by a continuing "atmosphere of unrest and controversy" growing out of uncertainty of policies. It was consequently of "highest importance" that the board promote a cooperate understanding.

The key to such a constructive adjustment was really in the effective recognition of the true and full functions of a land-grant college which neither of the rival executives nor the board seemed to grasp fully and realistically. How to implement equality was the rub. In general the conclusions of the survey supported Pearson's contentions. These seemed further vindicated a few months later when, upon request of the governor, the proposal regarding forestry and journalism was annulled. But continued bickering with the board (more particularly the chairman of its finance committee)

both over policies and administrative details, and the disinclination of two ambitious executives to do business with each other, involved too great a nervous strain to be continued indefinitely. With the renewal of the offer from the Maryland institution which had recently become a university, Pearson offered his resignation January, 1926, to take effect in September, and requested a leave for summer travel in Europe. After a gesture, by a divided vote, of a request for reconsideration with a substantial increase in salary, the board accepted the resignation with the conventional resolutions of appreciation.

► AGAIN URGES UNIVERSITY STATUS

Pearson's final report summarized the achievements of his administration, his recommendations for completing and extending them, and the influences that had brought the limitations and hindrances that, supposedly, had led to his resignation. The institution had come to top rank in the technical fields but fuller offerings in the humanities were essential to give balance to the program, especially for citizenship training. To recognize a *fait accompli* the title of university should be given. Long time campus planning that would include the purchase of additional land for men's housing should be undertaken to prevent future congestion. To maintain and further strengthen the distinguished faculty a higher salary scale, sabbatical leaves, and an adequate pension system were essential. Grateful recognition was given to the loyalty and generosity of the alumni and the devotion and sacrifice of the board.

The bane of the whole system, he was convinced, was in the illicit influence exercised by the board's "employed finance committee" who in their supposed subordinate

status assumed authority greater than that of the president. Any member of this "go between committee" with "policies of his own" could carry them through by manipulating the finances regardless of the wishes of the "nominal president." He added with bitter sarcasm that if the committee were to continue to wield this authority the board might as well be abolished. Aside from the personalities involved in the reference to the committee in the singular and the exaggerated emphasis on this influence, an exact delimitation of the functions of this committee was to continue in doubt.

► PERSONAL FACTORS INVOLVED

Pearson's failure to achieve more fully for the College the ideal which he declared at his election was due, in part at least, to his own limitations. His vision of the land-grant idea was somewhat restricted. A vigorous and in general understanding champion of the technical lines, from his training and personal interest he was less sure of the general. Undoubtedly one of the influences contributing to his tragic difficulties in Maryland was the lack of support from the liberal arts college. In the social sciences he was inhibited by his pronounced conservatism which made him fearful of innovations in society and government. He scanned with care the course descriptions in economics and industrial and social history for terms that might be misunderstood by the public as they sometimes were by him.

He had a penchant for confusing social with socialism. "The Red Menace" of the 1920's became something of an obsession with him. In a meeting of the State Agricultural Society he maintained that an essential duty of county agents was to combat subversive ideas and organizations. In his presidential address before the land-grant association in

1924, he held that it was a responsibility of the land-grant college to teach sound citizenship, regardless of what was done to that end elsewhere. But with his doubts regarding the teaching of politics, he delayed the setting up of a special professorship of government. When the selection finally was made he sought to provide safeguard by placing the position directly under the control of the dean rather than of the department with which the appointee was listed, with the inevitable resulting misunderstandings. A more reasoned appreciation of the area of the general studies might have enabled him to make a more convincing case, in spite of the strong vocational trend of the period.

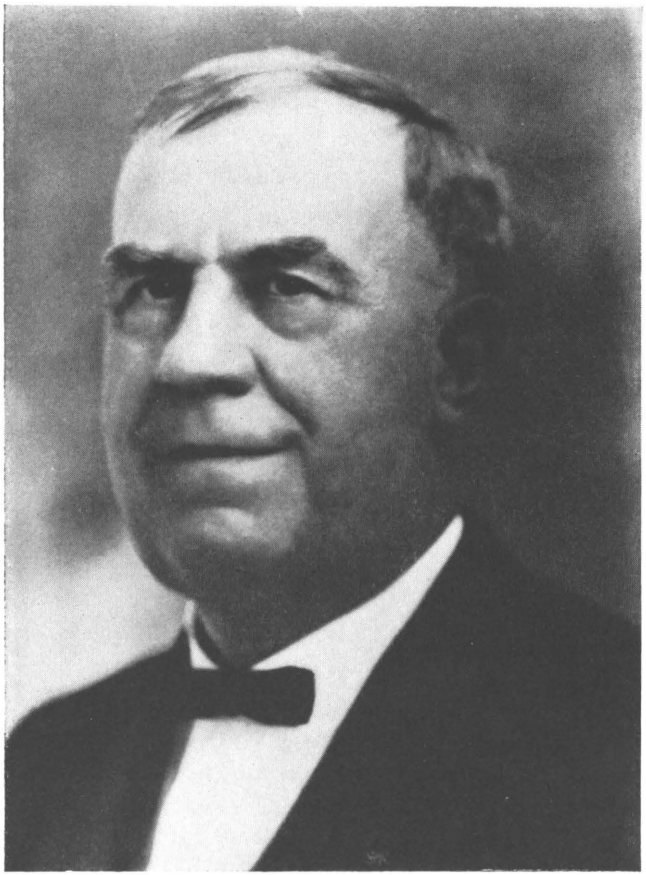
Furthermore, to the overemphasis of his critics and the regret of his friends, Pearson was a victim of an obsession for details to which too much of his time and energy were devoted. As the institution grew in size and complexity this trait was especially enervating.

These shortcomings in leadership are noted not by way of depreciation but rather in partial explanation of the circumscription in development of the most achieving administration to that time. With all the inhibiting conditions, Raymond Pearson had contributed most to the working out of the great idea upon which the College was established, after the formative contribution of Adonijah Welch. Under his guidance and that of the able forward-looking staff that he had brought together, the College had made the transition in enrollment, plant, and program to a leading "technological university." It remained for this as other similar land-grant institutions to enter more fully upon their manifest destiny, especially in the realm of the general studies. Pearson had brought the College to the verge of the promised land although he was not destined to lead in the full occupation of it.

Upon Pearson's resignation in 1926 the veteran business manager Herman Knapp was named as acting president and remained in charge for a year and a half. No one could have been better fitted to oil the troubled waters. As a conciliator he was a worthy successor to Stanton without the latter's personal ambitions. He had experience, sound judgment and balance, and was relentlessly impartial. On numerous occasions he had been a troubleshooter for interdepartment misunderstandings and in the impetuous or ill-considered acts of presidents. In dealing with the staff, individually or in groups, he was astoundingly frank and above board. Whether agreeing with him or not, everyone trusted him implicitly.

Such a moderating and assuring influence was urgently needed. On the campus and among the alumni, alarmist reports were in circulation of the design to institute a chancellorship under which the College would be in subordination to the University. In spite of the emphatic denial of any such intent and the purpose avowed by the president of the board to make the "College at Ames" the biggest and best land-grant institution ever, emotional suspicions tended to persist. As a countermove the agitation for a change of divisional and college titles was intensified. Various regional alumni groups supported the change, and throughout the spring quarter of 1927 the *Student* carried at its masthead the slogan, "Iowa State is a University; the Five Divisions Colleges," with supporting editorials and feature stories on the campaign. An alleged constitutional bar to the change did not lessen the agitation.

Meanwhile Knapp kept the full program moving along placidly and restored harmonious relations with the sister institutions where he was not lacking in personal friends



Acting President Herman Knapp served from February 8 to July 17, 1926, while President Pearson was in Europe. He again served as acting president from September 1, 1926, until August 31, 1927, after the resignation of President Pearson.

as shown by the award of an LL.D. from the University at the close of his administration.

There was considerable sentiment on and off the campus to continue Knapp as the regular executive. It was reliably reported that a majority of the board were agreeable to a

selection which had much in the way of expediency to commend it. Had Knapp exerted his full influence with alumni, staff and board, he no doubt could have secured the task of tiding over difficult and turbulent years. But with his natural preference for financial management and with the wisdom of long observation of administrative trials and tribulations, he chose not to be an active candidate. With such dependable leadership in force, the permanent selection could be made with due deliberation.

Sentiment was considerably divided as to whether the choice should be made from local candidates or those from the outside. But upon one requisite there was unanimity: the new head must be in full accord with the plans of the board for coordinating the state institutions, and to that end be minded to cooperate with fellow presidents. From a field of some thirty avowed or suggested candidates from all regions of the country, one stood out as the most available for meeting the immediate objectives — Raymond M. Hughes, the president of Miami University who had served on the survey commission of 1915.

► NATIVE SON

Hughes was a native of Iowa but had removed to Ohio in childhood. He was a graduate of Miami University where, after graduate work at the State University of Ohio and M. I. T., he returned as professor of chemistry, dean, and president. His interests were primarily in educational administration, and he had been notably successful in raising standards and in securing increased support. He had been prominent in the leading accrediting organizations and was a district director of the ill-fated Student Army Training Corps. With the current vogue for youthful executives,

he was a mature contrast at fifty-five. The new executive had taken an intimate view of the Iowa system in the survey of 1915. After being appointed president September 1, 1927, he had the responsibility, following a decade of stressful change, of reviewing the recommendations that he had helped to formulate.

His educational ideas involved a combination of small college paternalism with a zeal for administrative and instructional "efficiency." The bane of the large institution, he felt, was the lack of personal contact of instructor and student, and he aimed to find an equivalent in mass education for Mark Hopkins' log. At the same time he felt that the varied divisions and services of a technological institution should operate with the demonstratable precision of a modern industry. For a time efforts were made to consult with representative student groups and to deal directly with staff members, rather than through deans and directors. In contrast: problems and projects, moral, intellectual, and material, were listed and appraised from year to year in opening convocations of all employees. Of necessity if not desire, authority was increasingly delegated. The board of deans was expanded into an administrative organization including directors and supervisors. Paternalism more and more succumbed to bureaucracy. A faculty committee advisory to the president remained largely in the wishful stage. Full opportunity to select divisional and departmental heads came with the adoption of the mandatory "step down at sixty-five" rule, along with resignations and deaths.

The immediate task of restoring harmony with the other presidents was readily performed. Hughes was an intimate friend of both Jessup of Iowa and Seerley of State Teachers and they had been more than agreeable with his

President Raymond M. Hughes was president from September 1, 1927, to March 17, 1936, when he retired. He was on leave from October, 1935, to March 17, 1936. He remained on campus as President Emeritus and continued his keen interest in education, expressing his findings and philosophies through a number of books.

selection. The characterization of the "one big university" with its coordinate institutions was reiterated on and off the campus. With the large increase in enrollments, there was lessened concern over duplication. The few cases that arose were readily adjusted by joint committees. Exchange

of lectures, arrangements for special and advanced work, inter-departmental visitations, the continued professional relations of staff members, and an increasing interchange of appointments all evidenced the happy academic family — each member with its assigned duties.

With his close involvement in campus enterprises, from accounting office to laboratory and dormitory, the meticulous administrator found inadequate time to get about the state to address alumni and other groups. Lack of intimate understanding of the problems of the farmer was a handicap, offset to a considerable degree with the selection of George Godfrey as an adviser and spokesman in agricultural relations. Participation of alumni in representative fields was sought by the appointment of alumni visitors by the leading departments, and the holding of "alumni colleges" during commencement week. With the official decree of unity of the state institutions on the basis of the status quo, the "Ames University" plan went by the board. The last Ames tradition passed with the substitution of the "I" for the "A" award and of other rallying songs, yells, and slogans for "fight Ames fight" — much to the regret of many old grads.

Of more immediate concern in fixing the College's place in the state system than the limitation of title was the item of major areas of study. In discussion on the home campus and especially on the neighbors', the president tended to emphasize the practically-applied fields of instruction and investigation. Ever mindful of past controversy, he viewed with alarm any extension of the general subject field and warned counselors against classifications that, while meeting the requirements, were seemingly loaded too heavily with such subjects. Students who were mainly interested in a

general education, he emphasized, should go elsewhere. The strict application of such a test through the years would have excluded many of the College's most distinguished graduates and influential alumni.

The Industrial Science Division under Dean Beyer had rarely given evidence of any such extension of area or emphasis. Following his vote as an engineering staff member and administrator to abolish the division, as dean he had given it unstinted and enthusiastic leadership. He had gained a high *esprit de corps* among his staff and the student body. Under his guidance the division advanced steadily both in its service function and in its own major lines. The dean was supported at every point by an unusually able, versatile, and loyal cabinet: in the basic sciences — Pammel in botany, Spinney in physics, Coover in chemistry, Elmer D. Ball and Drake in zoology, and Smith in mathematics; in the social sciences — Brindley and Schmidt; and in the humanities — Noble and William R. Raymond in English, Frederica Shattuck in public speaking, and Tolbert MacRae in music.

However, with all Beyer's parental pride in his division, its growth in size and in major subjects, it must be kept strictly within certain prescribed bounds, in his view. The "industrial" part of the title, implying practical applications rather than general training, was the distinctive function. The natural and physical sciences, with their laboratory emphasis and their obvious relations to technical subjects or careers in themselves, were the only legitimate major areas. All others were tools and trappings for the main thing. In his oft stated opinion, to develop the social sciences or humanities to a coordinate status would be but a step toward the supreme menace of technical education,

"liberal arts." While other divisions were urged to open their schedules for American government, he was loath to make it a requirement in his own. He sought to meet the outside pressure for increased civic training by inserting in one quarter of freshmen orientation, a survey in problems of citizenship under the supervision of a not especially inspiring teacher. He even considered correlating this sketchy exposure with the introductory course in English — a curricular adventure which for the peace of mind of all concerned was escaped by other adjustments.

► NEW DIVISION HEADS

Following the sudden accidental death of Beyer in 1931, the president took over the direction of the division for a year to secure a first-hand view of what its operation involved. In 1932, the coming of Charles E. Friley, from a similar position at the A. and M. of Texas to be the new dean, marked a definite turning point in general education at the College. He instituted a revision and expansion of instructional and research programs that were to bring the division to coordinate status during his presidency.

The technical divisions under new leadership enlarged and to a considerable extent broadened their programs. The year following his exploratory headship of Science, President Hughes became dean and director of Agriculture. Evidently regarding the double service as too exacting, he appointed Vice-Dean Kildee to the full deanship and as a seemingly logical integration assigned the directorship of the station to Dean Buchanan. Professor T. R. Agg, a specialist in highway engineering, became the new head of his division in 1932. Following the resignation of Dean Richardson to work for her national association, Genevieve

Fisher of the Carnegie Institute was made dean of Home Economics in 1927. Veterinary Medicine in these years greatly strengthened its work by the addition of a group of young specialists. The premature death of Dean Charles H. Stange in 1936 removed a national leader in veterinary education who had brought the division to first-rate status. He was succeeded by Dr. Charles Murray.

► ENCOURAGE BROADER BASE

Along with the enrichment of the technical curricula there was a serious and persisting demand for liberalizing the training, both by more exacting entrance requirements and by provision for more electives from the general subjects. In 1931–1932, Veterinary Medicine required one year of pre-professional college training and this was later extended to two years. Special provision was made by the technical divisions, especially Engineering and Veterinary Medicine, for awarding both general and technical degrees.

These liberalizing trends came both from broad visioned members of the technical staff and from broadening professional standards. The administration was sympathetic to this liberalization but even more immediately concerned with the improvement of teaching in all divisions and levels. A concerted campaign "for improving the general quality of teaching" was waged under the general direction of William H. Lancelot whose competence, tactfulness, and sound judgment did much to moderate the current revolt against the pretentions of the professional educationists. He found valiant support in demonstratedly great teachers like Frank Emerson Brown, who with rare effectiveness in the introductory course in chemistry had taught more students than anyone else on the campus.

A council on teaching issued bulletins and advised with departments and instructors on special problems. Rating charts registered student judgment and/or prejudices. Courses on college teaching were organized particularly for younger instructors, and encouragement was given to the trial of new devices and procedures, especially those involving "student participation and response." Testing of all varieties was conducted. Big name experts were brought to the campus for lectures (a form of communication in great disrepute as a teaching medium in these years) and more or less advising with selected groups. Young instructors gained good marks by attending summer "workshops" and participating in "regional projects."

From all this effort there were definite evidences not only of awareness of the latest styles and models in devices and subject emphasis but of appreciable advance. Improved text books, study manuals, case materials, outlines and syllabi were written or compiled, especially in the technical subjects where subject organization and presentation were not fully standardized. Laboratory and demonstrational techniques and procedures, including purposeful use of visual aids, became more realistic. And by no means least there was more rational screening and organization of subject matter and a welcome mortality of splinter courses.

► GRADUATE STUDY INCREASES

These attainments in content and method at the undergraduate level were interrelated with similar advances in graduate study. From the mid 1920's to the era of World War II the Graduate College came to realize and exemplify that area of land-grant education. Supported by well established foundation subjects, all of the divisions found

fruitful areas of appropriate research. At this as at the lower level, the unreality of a narrow gauged encirclement was evident. The interrelations of technological problems, the further they were pursued, and the social basis of many of them swept away arbitrarily imposed barriers. Thus "applied" mathematics and physics and the special branches of economics and sociology rose to doctoral dignity.

That steady growth in enrollment and expansion of subject areas was not at the expense of uniform high standards was due to the sound judgment and scholarly understanding of the dean and his advisory committee. Buchanan served effectively and strategically as dean, director, and head of a department with work at the senior and graduate level. From 1937, Ernest W. Lindstrom of genetics, as vice-dean of the graduate college contributed the service of a careful administrator with the inspiration of a creative scientist. John J. L. Hinrichsen, '25, of mathematics was for some years an able wheelhorse of the committee. The effectiveness of the leadership was manifested in top enrollment along with top rating among land-grant colleges.

► INTEGRATION OF RESEARCH

A notable undertaking in institutional planning was that of a unified research program. Important beginnings had been made in the previous administration. The work of the stations was expanded into problems that involved interdivisional relations. Home economics developed both a general section and special sub-sections in the agricultural station drawing heavily upon the basic sciences. Agricultural experimentation gave increasing attention to economic and social problems, rural and urban. Engineering research gave timely aid to highway construction and operation,

rural electrification, and synthetic industrial processes. Veterinary Medicine and Industrial Science organized their special lines of experimentation in research institutes headed by the respective deans.

Certain types of investigations were cooperative in nature. Such were projects in the formulation of objectives for rural life and economy, federal-state relationships in agricultural programs, an institute for corn research, studies in food technology, along with varied regional studies in conservation, production, and marketing. A special council on research provided a clearing center and coordinating agency. Special services were made available to all research. The statistical laboratory organized by George W. Snedecor of mathematics provided computations for all campus research, along with the development in later years of a distinct instructional and research department. From a small one-man undertaking, the college instrument shop developed under the skilled supervision of I. A. Coleman into a campus-wide service. Linguistic and stylistic aid was rendered by English and modern language. Starting from an inadequate, disorganized, decentralized book collection, the genius of Charles Harvey Brown, with the talented staff that he brought together, built up one of the leading working libraries in technology in the country. The opening of the library building in 1925 was a land-mark in general instruction and in research — unhappily in capacity, a landmark soon passed.

The college chapter of Sigma Xi, the Osborn Club, the *Journal of Science,* the Iowa State College Press, and the participation of staff members in the Iowa Academy of Science and in general and special professional organizations were all incentives to research. State appropriations for experimentation, supplemented by the regular federal

grants, were added to increasingly by funds for special projects by foundations, commercial enterprises, and regional groups.

With all this striving for tailor-made curricula, prescient administrators, talented teachers, combining the wisdom of the ages with the latest techniques of "discussion" and testing, expert investigators, ubiquitous extentionists, and the latest equipment, economically used, President Hughes' concern for the welfare and nurture of the individual student was never lost sight of. Immediately his objective of student-instructor *rapprochement* was essayed. A personnel system with a director at the head and officers for each division gave attention to vocational guidance, personal adjustment, and job placement. To get directly at the student's initial perplexities, a counseling service was provided as a part of the Junior College set-up. In addition to advice on program and study methods and habits, any personal maladjustments that the student might broach or the counselor surmise were germane to the relationship. So far as his conscience and discretion suggested the counselor might serve on occasion as an intermediary between student and instructor or student and administration. In accord with the vogue of the times, "freshmen days" preceding the regular enrollment period were devoted to registration, general advising, and campus tours. The induction and acclimation process was continued by "orientation" courses in each division. The advisory system was unified by the appointment of the personnel officer, Maurice D. Helser, as dean of the Junior College. The system absorbed the functions of the deans of men and women. All this was a far cry from the old days when unsophisticated entrants were introduced to college life and ways by the energetic

if elemental ministrations of the sophomores and became oriented by empirical process of trial and error.

Steadily mounting enrollment brought housing to a concern of top priority. Young men outside Grecian domicile could still be billeted with varying degrees of comfort among the citizenry. But the women students, as a veteran educator in another institution observed, having been induced to make trial of public co-education constituted an institutional obligation for suitable accommodation. During the previous administration the physical foundation of a women's housing system was laid by the construction of four commodious halls and the emergency construction following World War I of two "temporary" lodges which were to serve for two decades. By 1940 four more additions had been made on the eastern area of the campus. Madge I. McGlade, who had served as dean of women, became the first director of housing.

► START MEN'S DORMITORIES

With the rejection of Pearson's proposal for an off-campus housing area for men, the Marston hill and adjoining environs were preempted with the initial men's hall, in 1927 — later named for the current president. But Hughes Hall was destined to be a rather modest unit of the encompassing Friley court.

A special housing problem was presented by the growing number of foreign students. This was met in part by the gift to the College by Sallie Stalker Smith, '73, of the "Gables." This former residence of her brother, Dr. Millikan Stalker, was designated as an "international house."

With the varied groups that a state institution attracted, in contrast to the standarized screening of a small college of

The International House was built in 1880 by President Welch as his home. The "Gables," as the house was called, was sold to Dr. Millikan Stalker of Veterinary Medicine. He willed it to his sisters and it was from the estate of Sallie Stalker Smith in 1928 that the College received the bequest that it be used for an International House. The exterior has been changed as the result of several fires. At the Centennial, International House was continuing to serve as a residence for foreign students.

the "quality" class, Hughes sought a social life of moderation, urbanity, and the fullest possible participation. He had an appreciative regard for fraternities but was concerned that they should not constitute a divisive or disturbing influence and in a period of financial errancy that they maintained a strict solvency. A faculty member adviser and periodical conferences with the administration seemed the best assurance of responsible conduct.

For the non-fraternity men an original scheme of "ward" organization was devised through which the "barbs" might

carry on social and athletic programs approximating those of the organized houses.

The men and women residence associations seemed to provide needed organization for dormitory groups. The office of director of social life did much to keep the whole program within bounds of propriety and moderation. The College was especially fortunate in having during the initial years the highly competent and enthusiastic directorship of Mrs. Ival A. Merchant.

The Memorial Union, opened in 1928 under the directorship of Colonel Harold E. Pride, was a unifying influence: a center of campus social life, a meeting place for local, state, and national conferences and convocations, and a homecoming place for alumni.

Equally all-college were the continuing and expanded cultural opportunities to which the Hughes administration gave fostering care as an essential part of a balanced education. The musical course under Tolbert MacRae's careful supervision maintained its high standard, as did the lecture course under the successors of A. B. Noble. A notable lecture series inaugurated in honor of Dr. Cessna brought to the campus outstanding leaders in theology and philosophy, but the lectureship unfortunately was not perpetuated.

At the suggestion of the president, the English department from 1934 sponsored a series of lectures and conferences by notable creative writers. Partly from these contacts but even more from the stimulating teaching and counsel of Dr. Pearl Hogrefe, an undergraduate magazine of creative writing — called *Sketch* — was launched and maintained under editorial and financial difficulties.

An art committee under the inspiriting guidance of Joanne Hansen rendered a like service in bringing artists

View of the Memorial Union after the northwest wing and terraces were added in 1953. Opened in 1928 and expanded thereafter in 1937, 1939, 1948, 1953, and 1957-58, it truly has lived up to its designation as "the hub of the campus" — for social life of students, for conferences and assemblages of local, state, and national importance, and is truly a "haven" for alumni.

to the campus as well as promoting exhibitions of state and regional artists. Campus buildings were enlivened by paintings and from 1937 by the sculptures of the artist in residence, Christian Petersen. In 1934 the campus was turned from the contemplation of the depressed times to a course in art appreciation based upon masterpieces provided by the Carnegie Foundation and organized by a committee headed by Dean Marston of Engineering. WOI provided master works of music and drama for college and state audiences.

Whatever the cultural opportunities for the average undergraduate, intercollegiate athletics continued to be the dominant extra-curricular attraction. In competition at any rate, the day of big things had arrived. In 1927 the College had joined with the state universities of Nebraska, Kansas, Missouri, and Oklahoma, and the state college of Kansas to form the Missouri Valley Intercollegiate Athletic Association — the original "Big Six" to which Colorado U. was later added to make the "Big Seven," and still later Oklahoma State to make it "Big Eight." In this fast company the showing of the "Cyclone" teams was generally favorable except for the major collegiate sport of football.

To bring to all able-bodied students the values of competitive sport, regardless of special skill, a program of intramural games in all the leading sports for men, organized in the 1920's by T. Nelson Metcalfe, was ably supervised by Harry J. Schmidt. A similar program for women was started by Winifred R. Tilden and continued by Germaine G. Guiot. Supplementing and servicing all physical activity and physical well-being was the systematic health service organized by Dr. James F. Edwards.

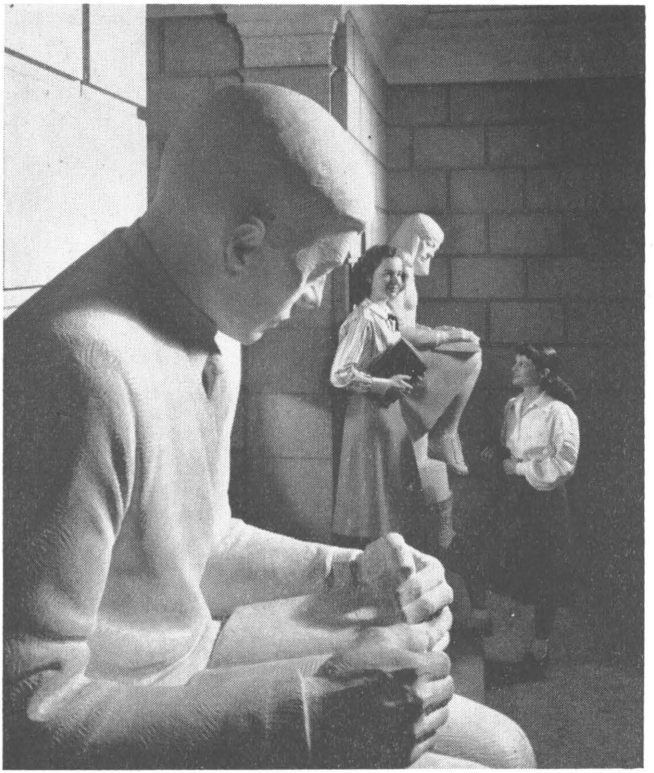
In these years of economic and social "disorganization" and of philosophical confusion, the religious life of the student was by no means neglected. The continuing services of the Y's, periodical convocations, and the annual religious emphasis week supplemented the special student ministration of the churches which in the case of the leading denominations was being organized in foundations with special student centers.

Such assurance and inspiration was desperately needed as the academic like all other phases of national life came into the throes of the most complete and devastating of depressions. College enrollment was sharply cut, and many

students were hard pressed to provide for minimum expenditures. Outside employment was negligible, fee exemption and reduction depleted further a dangerously curtailed budget, and the regular and temporary loan funds were soon exhausted. Some of the emergency measures were the setting up of cooperative dormitories, rental or loan of books, and the staggering of student employment by the College. In the later stages the federal National Youth Assistance grants came as life lines to many.

The placement service made every effort to secure at least subsistence positions for graduates and research funds were shared as widely as possible among assistants and fellows. Such relief was limited since all budgets, general and departmental, were closely pared. Appropriations were cut more than a fourth and the customary exhortations to economy needed no emphasis. Salaries were drastically reduced and vacancies remained unfilled. In certain special lines opportunity for government service relieved the budget, though it thereby increased the teaching load.

The research and extension services were directed to plans of relief and recovery. At the same time, faced with the most supreme challenge of its career, the College undertook searching self surveys and appraisals of its general and special functions and of its present performance and future plans. In 1933 a special study of the extension service recommended more specific objectives, fuller cooperation with other agencies, and a more flexible program. But the most minute analysis and detailed forecast that this College has made was in the twenty-year development plan. Many of the forecasts seemed visionary in view of existing conditions but in most cases they were to be attained and exceeded in the not distant future.



Statuary by the artist-in-residence, Christian Petersen, includes the fountains in front of Home Economics Hall and Memorial Union, statues of a boy and a girl in the Library, bas-relief on the Men's Gymnasium, on the Dairy Industry Building, and in central court of the Veterinary Quadrangle.

Hughes had hoped to have the plan revised from time to time as it was put in action, but in failing health, he resigned February 29, 1936. Selection was made March 17, 1936, of his well understood choice Vice President Friley, as his successor.

The outgoing president, serving in turbulent years, had established cordial relationships with the other state insti-

tutions and furthered markedly the internal organization of the College. At the same time he had contributed to a new cultural tone in the college community. His limitations were due to the inhibiting conditions under which he assumed the presidency, to his administrative background, and to certain rather dogmatic educational ideas which influenced his policies. In retirement Hughes developed these ideas in somewhat mellowed form in a series of books on administrative problems. By no means least of his influences upon the development of the College was that of bringing Friley to the campus and contributing to the promotion of him as successor.

Charles Edwin Friley was in training, experience, and educational philosophy admirably suited to guide the destinies of a land-grant institution that had arrived at the stage of a "technological university." A native of Louisiana and the son of the president of a sectarian college in Texas, he had studied successively at the Sam Houston Teachers' College, Baylor University, and the A. and M. of Texas where he received a B. S. degree. He had carried on research in higher education at Columbia for an A. M. and had studied and lectured at Chicago. At his alma mater he had been professor and registrar, and had organized and become the first dean of its science division. Special training in the social science field gave him an understanding of its place and peculiar values. As a talented musician he had a reasoned appreciation of the fine arts. But his special field, in which he was to continue his research and conduct occasional advanced courses amid executive demands, was college administration. He had had nearly four years as dean and vice-president in which to experience the special conditions and problems of Iowa State.

President Charles E. Friley was acting president from October, 1935, until March 17, 1936. He served as president from March 17, 1936, to June 30, 1953, when he became President Emeritus.

The new executive was to be numbered among a new generation of forward-looking land-grant leaders who recognized not alone the great responsibility of training experts in the various branches of technology, but no less that of providing a competent, rational understanding of the broad social implications of applied science in all realms and of the consequent essential place of the general subjects. This conception of the true land-grant idea was the thesis of his

inaugural address on "The Place of the Technological College in Higher Education." Such an emphasis was in the best tradition of the College — a fuller formulation and up-to-date application of the philosophy of progenitor Welch.

As dean of science he had been aware of the lag in the general subject area and had endeavored by both broadening and strengthening to bring the work of the division more nearly to parity position. In his view "service" did not connote "servile," and the general subjects could justify their being without some vocational tag. And, significantly, this divisional consciousness and assumption occasioned no protest from the technical divisions. Especially among younger applied scientists there was an increasing appreciation of the essential place of the general subjects in any program of higher education and of the dependence of their own professions, not only upon directly "supporting" sciences but upon the humanities as well. The stone that a scant quarter century before had been assigned for discard had thus come to established position.

► DIVISIONAL NAME CHANGED

The president continued as acting dean for a couple of years during which, with full authority, the liberalizing trends in organization and flexibility were continued. The limiting term "industrial" was removed from the title of the division but not of the institute. In 1938 the president's assistant, a resourceful psychologist, Harold V. Gaskill was appointed to the deanship. Under his direction for nearly a score of years both the division and its head grew steadily in service and standing.

With gradual financial recovery there was no occasion for rivalry for students. Enrollments came to new highs

with a total of nearly sixty-five hundred in the fateful 1939. Research and extension agencies could turn from emergency to new and incompleted long-time projects. The demands of housing, instruction, research, and recreation necessitated a long-time, rounded-out campus planning. The planning committee leaned heavily upon the expert advice of Allen H. Kimball of architectural engineering and Philip H. Elwood of landscape architecture. The program of physical expansion, like those in instruction and research, was just coming into full gear when the total involvement of global war called a preemptory halt.

Chapter 5

A Mobilized College

WORLD WAR II brought unprecedented demands upon higher education for service to the nation. The global struggle, dwarfing in size, intensity, and complexity all previous involvements, gave a supreme testing of the resourcefulness and adaptability of instructional and research facilities and personnel. As in past wars, the colleges were alert to the national crisis. The critical problem for institutions was to mobilize their plants and staff and maintain their academic status and function. With the declaration of limited emergency in September, 1939, and the selective service act the following year the situation of higher education became increasingly unsettled and precarious. As I. L. Kandel has observed: "The story of the relationship between the Federal government and the institutions of higher education in the country in the years immediately preceding and during the war is one of confusion and uncertainty."

In August, 1940, the American Council on Education, organized in the previous war as a coordinating agency for higher education, in conjunction with the N. E. A. created a National Council on Education and Defense with representatives from sixty national organizations. This body met with the office of education and subsequently the council appointed a special committee on federal relationships. A proposal to train selected groups of students on a civilian basis was not acceptable to the war manpower commission and the ultimate adjustment was the use of approved institutions for training selected corps by the army and navy. In the end, fewer than half the degree-giving institutions were selected, or a third counting junior colleges. Naturally choice was made of those equipped to give the technical work sought and with available facilities for housing and feeding large groups.

The land-grant institutions, as public establishments with highly developed programs of technological instruction and research, were strategically available as war training centers. The pre-war meetings of the land-grant college association (1940–1941) were devoted to the theme of preparedness, and those of the war years to the immediate emergency and post-war adjustments.

There was disappointment, and in some instances resentment, that the ROTC was dropped without consultation with college authorities. But however abrupt the change, the emergency necessitated a wider and speedier basis of officer training than the regular collegiate system provided. It was a considerable concession to utilize, to varying degrees, all of the land-grant institutions.

Among such institutions Iowa State College was in the forefront in awareness of the crisis, preparation for it, and

full participation in it. From the late 1930's the campus was steadily alerted to the international scene. College lectures and broadcasts by diplomatic, economic, and military authorities brought the realities of the axis imperialistic foreign policy. General forums and student discussion groups increasingly centered on the world scene, especially after the renewal of European hostilities. In the summer of 1940 the president announced that this institution, consonant with other land-grant colleges, had offered to the "appropriate authorities in the federal government full cooperation in measures looking toward national defense." Various courses were directed to preparation for defense training and information. The social science departments broadcast series of talks on economic, political, and historical aspects of the crisis. The Agricultural Extension Service presciently conducted a program of increasing production from 1939, while the surplus was still regarded as a menace. One week before Pearl Harbor, a faculty committee on education for defense made an extended report on existing activities with suggestions for additional and extended projects.

► SOLID SUPPORT

Campus opinion reflected in the main that of the nation and region; while at times quite vociferous, isolationist and pacifist agitators became a rapidly dwindling minority as the realities of the crisis became evident. They were dispelled completely by the fateful sabbath explosion, Dec. 7, 1941.

Precipitation into war brought inevitable confusion and uncertainty as to military status of students and younger staff members, and as to the wartime organization and functioning of the College. The delays and conflicting rumors

from Washington added greatly to the unrest. Gradually a measure of order and stability emerged. Students were advised to stay in college until called. Mass meetings addressed by the state adjutant general and the commandant of the ROTC interpreted the service regulations as fast as they came from the Pentagon. The president appointed a college defense committee headed by Dean T. R. Agg, of Engineering, to have general supervision of training programs. As a quick orientation to war issues the Science division organized a cooperative lecture course on "the citizen and the world crises," open to all students with or without credit, for the winter and spring quarters of 1942. The opportune visit of Wendell Willkie to the campus enabled him to inaugurate the course with a brief, characteristically stirring appeal.

The College entered upon special war training programs as soon as contracts could be negotiated and the trainees brought to the campus. In June, 1942, a non-collegiate naval training school was organized for three groups of specialists — electricians, diesel firemen, and cooks and bakers — to which was later added amphibious firemen. The school was housed in Friley Hall which was given the time schedule and appointments of a ship. The course for the electricians and cooks and bakers was sixteen weeks, that for the diesel trainees eight weeks, and for the amphibious firemen five weeks. By the closing of the program in December, 1944, more than twelve thousand had been trained in these various skills.

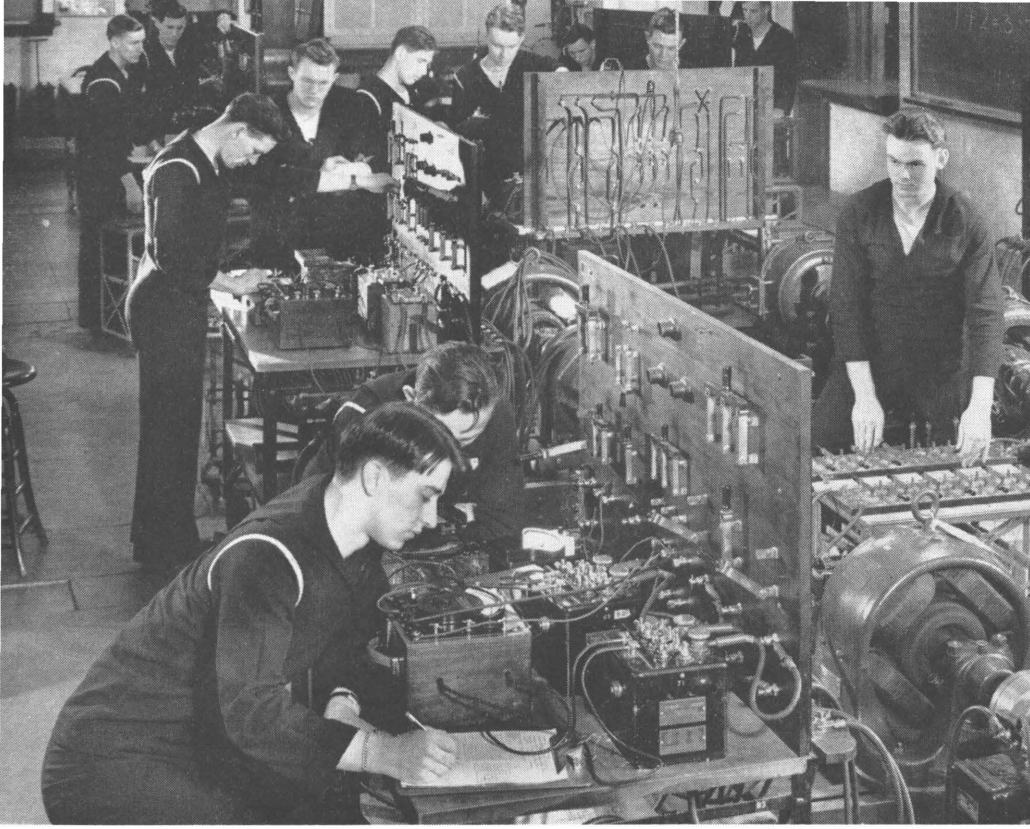
The College was one of seven participating in the training of young women for work in the engineering department of the Curtiss-Wright airplane corporation. Iowa State was assigned 101 young women from thirty-four states.

They lodged and boarded in the Union. The course, of college grade, extended through two terms of five months each (February–December, 1943). Of the original contingent 90 were graduated, 6 withdrew before entering upon active duty, and the remaining 84 along with the some 500 trained elsewhere met competently a skilled labor need in a key war industry. Shortly before (September, 1942–April, 1943) an aircraft machinists' school had trained a class of twenty-two specialists.

Due to the delay in determining and formulating the principles and procedures in the training of officers for the services, the regular collegiate training programs were considerably delayed. The naval collegiate V-12 instruction began July 1, 1943, with some eight hundred cadets. The navy sought basic training in the main divisions of the service as a foundation for intensive officer training, with but two technical courses required. The Iowa State contingent was selected from those with engineering preference.

The intent and in the main the practice was to follow established academic procedures and traditions. Classrooms were free from military regulations and trainees were allowed and encouraged to engage in all forms of student activities. Two of the trainees were elected president of the student body. The V-12's were housed in womens' dormitories until Friley Hall was vacated by the special groups. The program was continued through the war into the peacetime NROTC. The naval training programs marked a major extension of conformity to the military prescription of the land-grant act, which had hitherto been associated with the army.

The College's first group of the army training program (ASTP) consisted of the students in Veterinary Medicine



V-12 Naval Training unit in engineering during World War II — one of the many areas in which Iowa State College participated with specialized training to an even greater extent than had been true in World War I. The V-12 Naval Training Program began in July, 1943, and ended in June, 1946, when the last V-12's graduated.

whose induction was hastened in June, 1943, to meet an urgent need. The regular curriculum had been taught to 220 veterinarians by the end of the training in August, 1944. They were lodged in fraternity houses and fed in Roberts Hall.

The main army unit started class work in September, 1943, and continued until March, 1944, when it was rather precipitously terminated. A limited ASTRP corps was continued. The army planners sought as far as possible under the conditions to set up regional military institutes

in discipline, curriculum, and living. Courses and activities had at least to be rationalized as contributing directly to the training of officers. This objective proved disappointing as, by reason of larger training centers, the opportunities for commissions were greatly restricted.

An air pilot training program for civilians was started in 1939 by the department of mechanical engineering and was taken over by the new aeronautical department in June, 1942. To provide more adequate flying facilities, the Ames municipal airport was established in April, 1942. In January, 1943, the naval flying service inaugurated its V-5 flying training which continued until July, 1944.

Research and extension were no less concerned with the war effort than was resident teaching. While maintaining essential long-time projects, the Agricultural Experiment Station, handicapped by the absence of key men in the armed services or in special war research, centered its main efforts on investigations of direct application to the emergency. Typical examples were food drying and storage projects, more especially the dried egg cooperative research under the direction of George F. Stewart, the emergency production and processing of flax and hemp, and the breeding of waxy corn as a substitute for tapioca. The bettering and extending of farm mechanization was stimulated by the labor shortage. Studies in marketing, finance, and consumption were no less significant for the war economy. The engineering station gave timely assistance to industries engaged in war production.

Usable findings of the agricultural station reached the farms directly through the highly organized Agricultural Extension Service. To supplement the labors of the county directors and the home economists in securing the fullest pos-

sible compliance, thousands of volunteer leaders were recruited — one man and woman for each four square mile area — who undertook to keep their neighbors informed on all phases of the common undertaking. Home economists emphasized not only the preservation and economical use of food, clothing, and household equipment, and the cultivation of victory gardens, but also efficient farm management and operation by women as well. Club work stressed informed citizenship and increased direct participation in production. To these efforts might be attributed an appreciable influence for the complacent report in 1943 that, "never before have so few people produced so much food." The service was no less effective in organizing rural communities for war drives and in maintaining morale.

The Engineering Extension Service conducted well attended short courses in safety, civilian defense, conservation, and war production.

► OUTSIDE FUNDS SUPPLIED

The regular research programs of the stations were supplemented by projects sponsored and financed by outside agencies. One series — on governmental policies affecting the production and distribution of food — was under T. W. Schultz, head of economics, and three colleagues with established reputations in finance, agricultural policy, and consumption economics. The findings were listed as Agricultural Experiment Station projects, but they were not reviewed or sponsored by that agency. The studies were published by the College Press, but again without review normally carried on by the presidentially-appointed manuscript committee.

Several of the pamphlets were controversial, especially in

the realm of economic theory, but the all-out attack was centered on "Pamphlet No. 5," *Putting Dairying on a War Footing,* by an able and enthusiastic young research associate, Oswald W. Brownlee. Arguments were presented showing the desirability of increasing the proportion of milk going to the fluid milk market. The author also concluded that the legal restrictions (sponsored by a dairy pressure group) which interfered with the use of oleomargarine were not in the best interests of the consuming public. Additionally, Brownlee commented that there was little scientific justification for some sanitary regulations which he regarded as overly restrictive. And on the basis of his study, he felt that "margarine compares favorably with butter both in nutritive value and in palatability," and from the standpoint of the consumer's pocketbook made an acceptable substitute for butter.

Representatives of the main dairy groups moved upon the campus with alacrity. There was demand not only for the official repudiation of the document, but also for the immediate dismissal of those directly responsible — the author and the editorial committee of the "Wartime Farm and Food Policy Series." A conference with college officials including dairy and nutritional specialists led to an agreement for a joint committee investigation and report in place of such drastic direct action. The conclusion by this committee of dairy representatives and staff subject specialists appointed by the president was that certain statements were "either incorrect, or susceptible to misinterpretation, or inadequately documented as to fact." The committee recommended a thorough substitute revision. Such a revised edition was issued in the spring of 1944. The main alterations were in more balanced emphasis upon the central theme of more

economical utilization and more efficient distribution, together with an authoritative documentation on points made.

Meanwhile, in September, 1943, Professor Schultz in a letter of resignation had caustically criticized administrative policies for the social sciences, with vacillation on Pamphlet No. 5 as only one point. He predicted that leading members of his department would soon follow his example in leaving if corrections were not speedily made, because "They cannot stand much longer the uncertainty and the demoralizing atmosphere that now exists." On the specific consideration of pressure groups, he asserted: "We also need to recognize at this juncture that throughout the history of the institution many faculty members of the Iowa State College have not distinguished between the interests of particular agricultural groups in the state and the general public interest. The failure to have served, first and foremost, the general welfare of the state and nation has quite understandably created expectations that the facilities and faculty of Iowa State College were primarily here to serve agriculture in ways prescribed by the organized pressure groups in agriculture regardless of the effects of what was done upon the welfare of the public generally. To have this traditional relationship challenged has been a severe shock to the agricultural groups. Protests are likely to continue until the administration and members of the Iowa State College faculty can demonstrate that an institution of higher learning such as this has a more important role to perform . . . . The success of pressure group tactics in accomplishing objectives contrary to the general welfare largely arises out of their ability to concentrate their power and intimidate an individual officeholder. An orderly procedure for faculty participation in policy decisions regarding scholarship, research, con-

ditions of tenure, and publication policies should be worked out at once. This procedure and the relation of the President's office to it should be carefully explained to all special interest groups having relations with Iowa State College."

These heated charges involved a somewhat confusing intermixture of conflicting policies and personalities. Friley replied with dignified restraint. He expressed appreciation of Schultz's services and regret at his departure. As to the alleged restrictive designs, he denied any intent to limit or divide the work of the department, but, on the contrary, gave full assurance of his purpose to support and advance its program of teaching and research in all appropriate areas. This much-publicized controversy over subsidized research involved by no means a clear-cut case of freedom to publish. But it gave warning of the danger of interference by special interest groups and the consequent necessity for a responsible and defendable policy of publication.

► SIGNIFICANT ROLE

In addition to research in areas of peculiar concern and responsibility, the College was destined to have an essential part in the most spectacular and determinate scientific advance of modern time, if not of all time. When the crucial decision was made to demonstrate the unloosing of nuclear energy, regardless of costs and consequences, the first consideration was to select the scientists and the most strategic centers for their experimentation. As the historian of the scientific contribution to the war effort, James P. Baxter has declared, the requisite for the mobilizing of science for war is "first-rate scientists" with "ample funds and a large measure of freedom." Such was the motivating idea in the so-called "Manhattan District" project, and it was a rare trib-

ute to the standing of the basic work in science at Iowa State College that it should have been regarded as meeting this test.

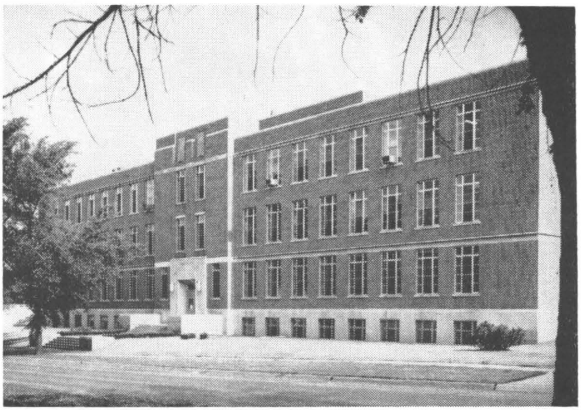
In February, 1942, Arthur H. Compton, director of the Chicago center ("Metallurgy Laboratory") asked Frank H. Spedding, of chemistry, to undertake a small project at Iowa State. This project involved basically the economical preparation of pure uranium. The method developed at the College, in what became a major undertaking, led to the large scale output of the essential metal. Further important services were the economical separation of plutonium and the designing of machines for the production of atomic energy.

Spedding, who divided his time between the correlated projects at Chicago and Ames, secured the services of his Iowa State associates, Harley L. Wilhelm and Iral B. Johns as assistant directors. Dean Gaskill, as head of the Industrial Science Research Institute, handled the exacting administrative adjustments. More than five hundred scientists and skilled technicians were employed in the improvised plant, two small frame buildings on the eastern edge of the main campus, popularly termed "Little Ankeny," in comparison with a huge war industry a few miles to the south.

So distinguished was this contribution to the production of the weapon which decisively hastened the end of the war that the project "was awarded the Army-Navy E flag with four stars, signifying two and a half years of excellence in industrial production of a vital war material. In addition the Ames project was mentioned as one of the four outstanding university atomic bomb projects in the report of Secretary of War Stimson."

In the midst of a mobilized campus, with a larger mili-

"Little Ankeny" was an unimposing structure which earned itself a world-wide reputation. It originally was built as a temporary Home Economics Building west of Home Economics Hall in 1920. In 1926 it was moved to the east side of the campus and used at various times as a women's gymnasium, garage, popcorn lab, and storage building. But during World War II it was converted to highly scientific service, and the operations at "Little Ankeny," as it was known because of the nearby Ankeny ordnance plant, produced more than 2,000,000 pounds of uranium. For a time this plant on the Iowa State campus was the leading producer in the nation.



Following World War II and with the completion of such imposing structures as the Metallurgy Building (U. S. Atomic Energy Commission) built in 1949, "Little Ankeny" was dismantled, literally board by board, so that proper disposal could be made of all contaminated materials.

tary than civilian enrollment, the regular academic program went forward with surprisingly small break. The teaching burden was doubled with the added service curricula and the shortage of instructors. By the spring of 1945, one hundred and seventy staff members had been called to active duty in various branches of the war effort. Their campus duties were assumed by remaining colleagues, supplemented by such aged and otherwise exempted educators as could be secured in a highly competitive market. There was also a transfer of versatile talents from departments of lessened demand to those of congested enrollments.

For all it was a hectic experience of devising and adjusting the varied curricula and time schedules of army, navy, and civilians. The service extended continuously around the clock, whether by standard or naval reckoning, with no break except for the sabbath. Even Thanksgiving and Memorial Day saw classes as usual. They also served who only stood and taught.

Civilian students were very conscious of the obligation to do their bits. A student war council was organized in 1942 and carried on valiantly and vigorously for the duration. It spearheaded collections of paper, scrap, and clothing; bond sales, and drives for the Red Cross and USO. The council helped to organize Red Cross classes and blackout demonstrations, served in USO centers and canteens, and worked in college gardens. In both work and recreation the council sought, at all times, to maintain civilian and military morale. As a stimulus to this vital objective, council and staff encouraged inspirational war lectures, especially by direct participants and observers, and also discussion forums with free for all interchanges. Dissentient ideas found outlet here as well as in letters to the *Student*.

Athletic competition, for the time being, was strengthened by the redistribution of talent which the training programs occasioned. The services, within reasonable limits, encouraged participation. Eligibility rules were liberalized; the government did the recruiting and coaches were free to use — within time and travel limitations — whatever skill came their way. The drawback was in the fluctuating personnel, as experienced or potential lettermen came and went at short notice. But in the main the College, with its large contingents from different regions, fared so well from the contributions of the barracks that its football fortunes came from a period of decline into one of notable successes.

► COEDS IN KEY POSTS

The shortage of civilian men gave the coeds their day of leadership in campus affairs. Women boards and staffs took over the publications, dramatics, and debates, arranged for lectures and forums, and managed the social program. They even ran the adapted Veishea observance.

In spite of multiple schedules, military discipline, and improvised housing and boarding, campus life in its main features persisted with remarkable continuity. And in spite of the far greater size and length of the involvement, a blessed contrast in the general conditions of living and training in the second world conflict over World War I was in the freedom from any outbreak of disease such as the influenza plague. On the contrary, health conditions were remarkably good and sickness occasioned no interruption of the program at any stage. Such a favorable showing was due in no small degree to the advances in nutrition, sanitation, and immunization which every modern war has registered over the preceding.

Meanwhile on all fronts and in varied branches of service, more than 6,800 former students had been in action and more than 350 had given their lives to the national cause.

Such a total and all-demanding conflict was destined to have far-reaching effects upon education as upon all aspects of life. And upon no other institutions of higher learning did this responsibility for rethinking and readjusting come with greater force than to the land-grant institutions with their peculiarly direct public relationships. For this representative member of the group, the war years had been by no means a period of mere adjustment to the immediate emergency. Instead, the demands of the crisis had shown the need for reappraising values and integrating knowledge. Each division was carrying on searching curricular studies, with a reconsideration of objectives and the means of their realization. The need for unifying and liberalizing came to be generally recognized. War methods in instruction and testing were found to have permanent significance, especially for the impending mass education. The central problem of the post-war era was recognized to be the training of the largest educable number — and most immediately the returning veterans — with adapted curricula, competent staff, and progressively expanding plant.

In the shadow of the global cataclysm and the continuing disruption, it was no less recognized that while the training was contributing to the security of an embrangled world, it was at the same time under compulsion to give rational exploration and appraisal of the possibilities, means, and conditions of an enduring peace.

Chapter 6

Technology and General Education in the Atomic Age

THE UNEXAMPLED DEMANDS in size and adaptation that confronted American education at the close of World War II by no means caught the institutions unawares, as has been noted. Fact finding, evaluations, and unending discussion had been going on steadily through the 1920's and 1930's — the educational phase of an era of planning. The investigations had been carried on by governmental agencies, professional organizations, educational foundations, and particular institutions. There was a conscious effort to salvage from the training programs of the war usable ideas and practices in subject organization and techniques. In view of the prospective national and international situation the formal discussion centered on the expansive areas of general education. There was a very considerable output of reports and polemical treatises, books and articles on the subject, involving many disagreements as to the meaning of the term itself. Most widely discussed

was the Harvard report on *General Education in a Free Society*. Under the direction of its educational editor, Benjamin Fine, *The New York Times* conducted a crusade for the more general requirement of American history for undergraduates as well as for a greater emphasis on training for citizenship, including curricula of technical institutions.

Land-grant institutions, recognizing the large share that they would have in the training of veterans and the dominant sphere of technology in the turbulent "one world," gave all the attention that could be taken from their embattled campuses to collegiate ways, more or less "as usual."

Throughout the war the land-grant association gave major emphasis to the training and social adjustment of the G. I.'s in agriculture, industry, and the public service in the post-war economy and society. In all this evaluating and prospecting there was a recognition of the essential place of the general studies, including the humanities, to meet the imperative duties of citizenship in the new world order.

As early as 1925 there was a proposal for a division of the land-grant association that was at first termed "liberal arts" but later, "arts and sciences." A committee was continued from year to year until 1929 when, by reason of the "diversity of organization and practices" found by the land-grant survey, it was felt that a recommendation was impracticable and the committee was discharged. Finally in the revised constitution of 1945, a coordinate "division of arts and sciences" was specifically authorized. Thus the pressure of national conditions, as well as a broadened, more enlightened conception of education in technology, had at long last brought full acceptance of this essential responsibility of land-grant education.

Iowa State College was early alerted to the call of the

new mass education. Aside from the general land-grant survey of 1930 in which various staff members had actively participated, and the president's report on education in 1939, the College had been the subject of or the instigator of special studies and surveys for a decade and a half. Prewar examples were the studies and publications of the council on teaching (1929–1933), the special study of the extension service, and the general administrative state survey of the Brookings Institution — both in 1933 — and the semiannual reports to the governor on changes in curriculum required by the legislature, 1939–1940. During the war the general curriculum committee had given special attention to the liberalizing of the offerings of the technical divisions; the divisional committees, in some cases with student advice, had been busied in revising and renovating their programs. The farm operation curriculum, introduced in 1944, was deliberately designed to train more realistically for rural economy and living. Aside from emergency practices forced by the high-pressure demands of the training programs, new methods and procedures were being studied and devised. In the *Alumnus* for January, 1944, Friley presented a prospectus of the post-war needs of the different groups of students and the adjustments needed for rendering the fullest service, in instruction and research.

► REVIEW ACCOMPLISHMENTS

Division and general anniversaries in the post-war years were opportune for checking gains and pointing needs. Home Economics observed a diamond anniversary in 1947. Dean P. Mabel Nelson's highly specialized staff of instructors, research specialists, and extension workers — all with latest equipment and techniques — was a far cry from the

improvised experimental kitchen of the devoted Mrs. Welch. No less impressive at its fiftieth birthday in 1954 was the contrast of the forestry department headed by George B. Hartman, '17 — the successor to the real father, Gilmour B. MacDonald — as compared with the original professorship of the youthful Hugh Baker. The attainment of the department was a vindication of the judgment of Pearson over that of his doubting board that had sought its discontinuance. The golden anniversary of technical journalism, in 1955, was another evidence of executive foresight, thanks to the progressive building on the modest endowment of John Clay by Will Ogilvie, Clifford Gregory, '10, Frederick W. Beckman, Blair Converse, Charles Rogers, and Kenneth Marvin, '23.

► REFLECTIONS AT NINETY

Of inclusive interest to the college community was the kaleidoscopic view of the changing scientific and academic scene presented at the ninetieth anniversary celebration, March 22, 1948. In an overcrowded day were packed greetings from the sister institutions, the governor, and the board of education, and understanding tributes to the respective divisions by representative alumni. In addition, the formal addresses by distinguished specialists surveyed the backgrounds and present status, and forecast the future needs and opportunities of the main lines of work of the College. Senator Bourke B. Hickenlooper, '21, gave a running survey of international policies with especial tribute to the College's research in atomic power.

There was altogether too much of past, present, and future to be absorbed in one day, but the proceedings were conveniently and attractively printed for deliberate con-

templation. So far as the application to the College went, and it was made the focus of the entire program, the consensus was that while achievements of the nine decades had been remarkable, the great matured undertakings were just being entered upon.

The destinies of the College in the final decade of its first century were to be directed by a new leadership. During World War II and in the following decade the deans, directors, and nearly all heads of departments were to be changed, some of them two or three times. Most of the changes came in the years immediately after the war. With the retirement of Buchanan as director of the Agricultural Experiment Station, the three lines of work of the division were consolidated under Kildee who was soon succeeded by Floyd Andre, '31, who came from the assistant deanship at Wisconsin. After the delayed retirement of Dean Agg by reason of war exigencies, a similar consolidation was made in Engineering under Lowell O. Stewart as acting dean. Later J. F. Downie Smith, a Scotch engineer with degrees from Glasgow, Georgia Tech, Virginia Tech, and Harvard, became permanent head. Smith resigned to return to industry as of January 1, 1958.

► SHARE RESPONSIBILITIES

In operation, consolidation of the three lines of work in both Agriculture and Engineering necessitated functional decentralization of supervision. Thus Roy M. Kottman, '41, became associate dean for agricultural instruction; for the station — following service of George F. Stewart as assistant director — George M. Browning served as general associate director; Richard K. Frevert, '37, became assistant director for agricultural engineering, with Pearl Swanson in similar position for home economics; for extension,

the staff included Marvin A. Anderson, '39, associate director, and Maurice W. Soults, '30, and Louise M. Rosenfeld, '28, assistant directors of club work and home economics respectively.

In Engineering, following the resignation of Frank Kerekes as assistant director to become dean of the Michigan College of Mining and Technology, Mervin S. Coover was transferred from head of electrical engineering to associate director of the division and later acting dean; George R. Town had the corresponding position for the station, and G. Ross Henninger for the extension service, following the long formative service of Daniel C. Faber.

► NEW HEADS

The divisional research institute in Veterinary Medicine was directly supervised by Harry E. Biester as associate director. During the war Henry D. Bergman succeeded Charles Murray as dean of Veterinary Medicine, and in turn was followed by Ival A. Merchant. In Home Economics, Helen R. LeBaron — who had balanced training from Vermont, Cornell, and Chicago — freed P. Mabel Nelson for teaching and research in the history of the division. Late in the decade, in February, 1956, Gaskill resigned from the deanship of Science to become a vice-president of a large industrial enterprise. After a temporary service of a year and a half by John A. Greenlee, the position was accorded Richard S. Bear, a biochemist who had previously had a brief service at the College and who came to the position from M. I. T. Also in the decade immediately preceding the Centennial, Ralph M. Hixon, who had succeeded W. F. Coover as head of chemistry, was transferred to the deanship of the Graduate College.

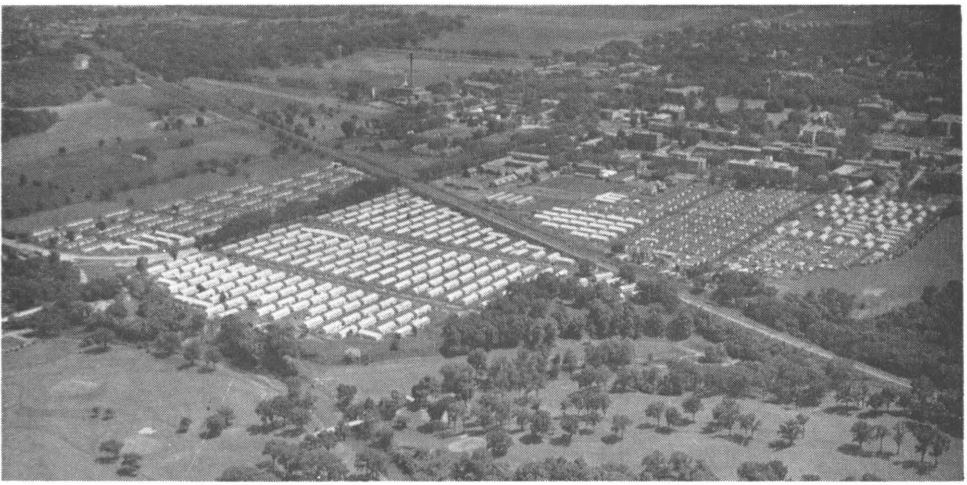
Robert W. Orr, in assuming the directorship of the library, made possible the manifold services of Charles

Harvey Brown on and off the campus, in bibliography, and surveys and advice to collegiate libraries and the Library of Congress. Theodore E. Bancroft, Ph. D., '43, followed Snedecor as director of the laboratory and head of the statistical department. J. C. Schilletter, Ph. D., '30, took over from Madge McGlade the big business and public relations enterprise of director of housing. Death came prematurely to James R. Sage, the first and conspicuously capable registrar. Arthur M. Gowan, trained for the statistical duties as a mathematician and for those involving state interinstitutional relations as a holder of degrees from all three of them, succeeded to the post.

These years marked the passing of leaders whose service went back to formative days to which they had signally contributed. They were also attended by the premature loss of a distressingly large number of still active and highly achieving scholars — the victims in most cases of the unusual physical and emotional strain of the world conflict and its aftermath.

Both the prevailing unrest and the great expansion of the public service and of industry and business led to the transfer of a much larger than normal number to governmental, commercial, or more attractive teaching and research positions in other institutions. This was true especially of the younger staff members. But in spite of the unusual post-war demand for scientific talent, the College in all divisions was able to attract scholars of repute and promise to fill the gaps of death, retirement, and resignation. In general the replacements were forward-looking scholars with a broad view of their subject in relation to the total program and with positive research interests.

With all the awareness of and preparedness for antici-



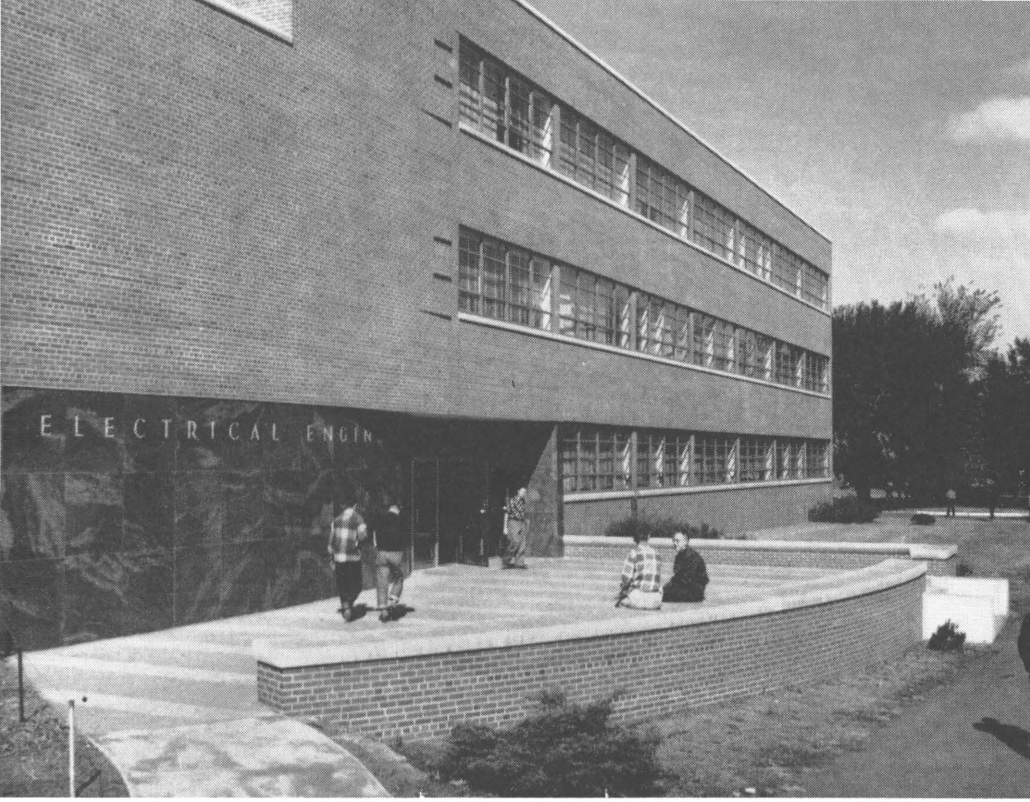
Pammel Court, the temporary student housing project which was started in 1946, was still accommodating peak numbers at the Centennial. This air shot looks southeast.

pated post-war needs, here as elsewhere, the actual response of G. I.'s to the educational opportunities offered by their bill of rights was well nigh overwhelming. The steadily mounting enrollment, which by 1946–1947 exceeded ten thousand, created a major emergency in housing and taxed instructional facilities to the limit.

The housing situation was complicated by the large proportion of married students. The main solution was reached by a committee consisting of Mrs. McGlade, Boyne H. Platt, business manager, and Ben W. Schaefer, physical plant superintendent. It was the founding of a village north of the main campus, known as Pammel Court, consisting of metal barracks, demountable houses, quonset huts, and trailers, procured largely from war surplus. This main center was supplemented by barracks for single men in the "silver city" across from the hospital, rooms under the east stadium, the former military horse barn, and a trailer camp on the western edge of the city. Large units were added to the Friley court group in 1950 and 1954.

Instructional needs were subject to the same heroic improvisation. In 1947 a dozen substantial two-story frame buildings were erected for class rooms and offices — plain but serviceable and relatively commodious. Six one-story huts from the former Civilian Conservation Corps camp were added to these, for various uses. For the year 1946–1947 a measure of relief was found by housing and training some five hundred freshmen in Engineering and Science at Camp Dodge, north of Des Moines. The program was carried out satisfactorily under the directorship of James P. McKean of general engineering and his assistant Wendell H. Bragonier, then assistant to the director of the Industrial Science Institute. But it was most fortunate that the prolonged institutional decentralization experienced in some states was not necessitated. The electrical engineering building, the agronomy building, and the commodious addition to the science hall helped meet permanent needs — in part and tardily. Various additions and supplemental constructions also helped to ease the cramped and congested conditions.

The physical plant — buildings and their equipment — has always been essential to organized learning. The ambulatory medieval masters and students had to find their lofts and the devoted log colleges had to establish their cabins. Even the legendary socratic genius of a Mark Hopkins required its log as a symbol of propinquity and continuity. The earlier requirements were elemental; the yards and campuses of all early institutions indicate simple living, if not always high thinking. But with the library, the laboratory, the shops, the varied and complicated contrivances of audio-visual presentation, the robotistic computing and testing mechanisms, to the latest refinements —



Despite sky-rocketing enrollments, new buildings on the campus in the mid-century years were not numerous. Those which were constructed, however, had a "new look" — as is typified by Electrical Engineering Building completed in 1950.

all heated, conditioned, lighted, and sanitated according to prevailing standards — the demands upon the buildings, grounds, and properties division of a mass educational establishment seem well-nigh insatiable. The requirements of a technological institution are especially costly and exacting. (In recent years certain institutions have put around fifty millions into their "logs" within a single quadrennium.)

Nonetheless, in this atomic age as at any time, the problems relating to the selection, organizing, and imparting of the curricula were the basic and enduring ones. After all the "bricks and mortar," even the marble aspects of an institution — essential as they may be — are but means to

the instructional and research reason for existence, as officialdom and the public need to be reminded from time to time.

In spite of the imperative professional demands for new subject matter and the still higher standards that intensified research indicated in all of the technical disciplines, the distinctive trend of the post-war years was toward a recognition of the real and essential values of general education, not only as an appropriate coordinate division of land-grant education, but for its essential place in technological training. Even the humanities were no longer to be shrugged off as just "cultural stuff."

► ENDORSE BROADER PROGRAMS

For this altered emphasis Friley was a consistent and persistent protagonist. In convocation and faculty addresses, reports, curricular adjustments, and key appointments as dean of Science and throughout his administration, he was tirelessly insistent in urging the rounded-out program — "the education of the whole person." Administrative boards, key heads, and staff members were in general agreement, and increasingly in specific agreement. The differences had been and remained more a matter of departments than of divisions; certain general science disciplines were loath to go much beyond the clearly "supporting" areas. More reasoned advance was made in this pivotal problem than in all previous years. The curricula in Science became broader and more flexible with lessening prescription and a wider range of electives. With this marked gain, the division was still short of the more advanced land-grant programs; the humanities were not yet accorded major status.

In spite of professional pressure the technical divisions ungrudgingly found space for general electives or in some

cases requirements, beyond the directly supporting subjects. In accord with the standard adopted for all accredited colleges, the Veterinary Division, beginning in 1949–1950 required two years of pre-professional college study for entrance. With a surplus of applicants the division was in a position to apply a rigid selective process.

Various teaching devices, some of them growing out of war experiences, were employed with measurable success. There were extended trials of large lecture groups and of laboratory demonstrations. At the other extreme, small conference groups were allowed to go largely on their own. Visual instruction found increasing and improving utilization. The College pioneered in television as it had in radio. Experimental closed circuit classes were tried. Subjects of wide appeal, with especially effective instructors, were provided for the general audience, with or without credit. Lectures on current issues, history, government, literature, and art were given by specialists — home and imported. Some of the more experimental undertakings were financed by educational foundations.

► ADAPT TO ELECTRONIC AGE

Electrical engineering and physics provided training for electronic experts and speech and technical journalism gave special courses in the preparation and presentation of radio and television programs. All divisions and most departments contributed to the technique or content. A committee on radio and television education representing the main areas involved was organized with Joseph H. North, of English and speech, as coordinator. Testing programs were conducted by a special bureau using the facilities of the most perfected computing machines.

No horizon is too broad to be challenged in the sharing of knowledge. Iowa State College geared itself to the television age in education, and as a pioneer in this area, coupled vision with voice wherever pertinent developments were being unfolded.

Research in all areas was broadened and systematized with emphasis as always upon the current agricultural and industrial conditions. Increasing funds for the stations came from commercial concerns seeking to improve products or develop new ones, regional interests with special problems, and research foundations. Following the war the federal government transferred to the College more than 1,400 acres from its ordnance plant at Ankeny as a very substantial addition to the Agricultural Experiment Station's experimental domain.

The Agricultural and Home Economics Extension Service — freed from entangling alliances with agricultural or-

ganizations, and utilizing the most advanced devices and techniques of communication and demonstration — grew steadily in effective appeal and service.

A dozen depleted farms — a gift to the College by C. R. Musser of Muscatine — were operated through an agricultural foundation as a unique demonstration of regional rehabilitation and sound management. James J. Wallace, '16, served as general manager of the projects.

During and following the war the conducting of the general farm and home week, which had become too large and varied to be concentrated in so brief a period, was replaced by radio discussions and gatherings of special groups. For both adult and youth groups, regular short courses in the technical divisions continued increasingly to provide special training for a wide and varied range of occupational, cultural, recreational, and community welfare interests. This progressively significant branch of instruction was organized under the directorship of Russell M. Vifquain. In July, 1946, the *Iowa Farm Economist* (1935–1946) and the *Farm Science Reporter* (1940–1946) were combined in the informative and attractive *Iowa Farm Science,* issued jointly by the station and the extension service.

Staff members, in addition to the burdens of a total program expanding at all points faster than the available provisions of equipment and personnel, were confronted at the turbulent, uncertain mid-century by special hazards, whether in teaching, research, extension, or as in a considerable number of cases, combining all three functions. It was a period of a markedly inflated economy with a prevailing high standard of living. Accelerated by the peak income of the war years and mounting with the illusory measure of values, this group of "white-collared" workers, with fixed

and slowly changing money income, was especially hard hit. The emergency campaigns conducted by the leading private institutions among wealthy alumni and, in some cases, materially supplemented by benevolent foundations, were not feasible for state institutions. Any considerable approach to academic "parity" came hard with legislators accountable to economy-minded constituents.

In addition to the financial risks of the post-war era, there also were those of freedom and security. The real perils of the cold war and the exposed menace of subversive conspiracies provided the excuse and opportunity for reactionary groups and opportunist demagogues to arouse popular hysteria by irresponsible, in some cases wholly fabricated allegations against all critics of ultra-conservatism in home and foreign policies. Authors, artists, clergymen, and teachers were the especial victims of such malign harassment. Academic freedom was seriously imperiled in a considerable number of institutions, public and private. Staff members were accused of communist membership, sympathy, or association, however remote or tenuous. Directories of dangerous objectionables were gratuitously compiled by some who could have qualified for prominent inclusion.

In a number of states test loyalty oaths were required of teachers in public schools and colleges. State colleges and universities by reason of their public support and sensitivity to popular pressures were unusually exposed to such perils.

Happily, Iowa colleges were not subjected to the distressing and discrediting dissensions and misrepresentations that these controveries involved. A bill to exact the special oath from teachers was introduced in the state senate but received scant support. There were occasional efforts to

twist and contort dissentient and radical ideas, especially economic, as well as pacifistic convictions, into disloyalty and communistic leanings.

A national official of the Sons of the American Revolution, after attending a chapter meeting in Ames in which the discussion emphasized the enlightened program of civic training at the College, delivered a sensational tirade in New England in which he charged that a large proportion of the staff at Iowa State College were communists. As expected, the deliberate slander was widely publicized. A challenge from the local officers of the organization to name a single staff member of the alleged affiliation was ignored and no retraction was made by the spokesman or the society which he misrepresented.

The avowed pacifist views of two or three members of the staff in the post-war years met bitter attack and demands for removal by veteran and patriotic societies, but no evidence of subversive act or intent was presented. In fact no responsible charge of disloyalty in statement or conduct was made against any one connected with the College, although the views of a few were highly objectionable to many on and off the campus.

► NO CURB OF FREEDOMS

With all the periodical unrest, clashes of personalities, and occasional maladjustments through the years, it is highly significant that in a faculty by no means lacking in strong individualists and confirmed opinionists, there was not in this or in any previous administration, a single clear-cut case of abridgment or restraint of the freedom of teaching and research. The College was thus spared the unfortunate notoriety of an investigation by a committee of the A. A.

U. P., than which, in the opinion of a veteran educator, any president would prefer the infliction of the plagues of Egypt.

In these years as in the twenties and thirties and during the global war, the few cases involving individual grievances that came to public attention concerned clashes of rival personalities and misunderstandings over administrative policies and procedures. There were departmental dissensions over headships that a system of elected chairmen might have avoided. At the same time there was a belief among influential staff members and alumni that in his zeal for "getting on," Friley was at times impatient of the traditionally slow process of discussion and consultation in determining policies and adjusting differences. He was adept in delegating routine details, but reluctant in the transfer or sharing of policy making. His direct and decisive action certainly got things done and obviated the slow motion of drift, gradualism, and tiresome procedural delays. Such forthrightness was generally welcomed by those who favored the particular policy or decision, but at the same time other professorial, student, and alumni sensibilities were affronted and controversies on and off the campus aroused. Still more unfortunate was the fact that, at times, opposition was aroused for policies which in themselves were generally favored.

► ACTION DEMANDED

Per contra, a strong plea in abatement might be made, if it were thought necessary, in the unusual demands for immediate and definite action which these years presented, and in the lack of the agencies and usages of a workable representative government. These conditions gave unusual incentive, and at times certainly, a justification for increased executive powers. A power vacuum existed which a strong

executive was certain to seek to fill — and in this case had filled to a notable degree.

With multiplied staff and accelerated program the old-time general and divisional faculty meetings — with deliberations and procedures continuing from small college days — had partly by design but more largely by default fallen into a state of formal passivity. The board of deans that had served as both an advisory and appelant body had by added membership and centralizing trends been reduced to a subordinate administrative agency. A "council advisory to the president," which Friley had inherited, had never justified its name and was abolished with general satisfaction. A "senate" or "council" — representative of faculty opinion and with recognized status and adequate authority — had been discussed for years. But natural academic conservatism and individualism, along with the unusual burden and heat of the days' labors in the most hectic quarter century that this or any college had experienced, delayed the formation and adaptation of a plan that would arouse adequate interest and support of the staff and secure the approval of the board.

► FACULTY NOT PRESSING

Despite all protests to the contrary, the average professor the country over, with absorbing interest in teaching and research, if allowed to go along in his special field and in his own particular way was not apt to be greatly concerned in general policy making and in the niceties of administrative procedures. In this, academic democracy in practice has followed all too closely the political. On the campus and in the state a vigorous "campaign of education" for true faculty participation was clearly indicated.

However, before any plan of faculty participation could

function effectively, there was the preliminary need at this stage for a definite allocation and delimiting of authority within the state institutions, from board to staff. This deterent to smooth and effective functioning was emphasized in the periodical survey of state higher education in 1950, conducted by the dean of educational surveyors, George D. Strayer, with the assistance of Arthur J. Klein who had directed the general land-grant survey of 1930.

► BOARD IS TARGET

This time the adverse criticism was directed mainly against the board itself, pointing up its failure to make a definite and convenient codification of its statutes and by-laws and a compilation of administrative decisions on major policies as a guide and precedent for future action. As a further step toward regular and responsible operation, a specific allocation of the duties of the different members of the finance committee was urged. The report recommended fuller cooperation and collaboration between the board and the presidents in all policy making. The beginning of inter-institutional committees was highly commended and it was recommended that they be extended and regularized as a means of more effective cooperation and coordination of the programs of instruction and research. In research, the alleged dichotomy between "pure" and "applied" was wisely and sensibly reprobated. Meanwhile the throng of collegians for whom the College primarily existed was making adjustment to the new era of higher education.

The tone and behavior of the post-war student body was considerably modified, for a time, by the influx of the G. I.'s. War experiences, and in many cases family responsibilities, lent a serious manner, persistent objective, and cooperative

attitude — quite in contrast to the typical undergraduate norm. As a group the veterans were more studious and in the first year or two made a markedly better scholastic showing than the average. Many maintained the high plane of application and conduct to graduation, but some succumbed to traditional collegiate ways, in relaxed effort and diffused interests.

The typical mid-century undergraduate was motivated between the extremes of serious concern — reasoned or emotional — for the state of the nation and the universe on the one hand, and indulgence in erratic pranks and mob demonstrations on the other. With modern mass communication there developed increasingly a uniform climate of collegian opinion that brought similar attitudes and reactions for all regions. There seemed to be a conviction that in recreation, dress, and conduct the prevalent trends set by a few large institutions, like the Paris fashions, had to be followed to demonstrate sophistication and to receive a due share of local and news service "features." Thus after decently refraining from the inane dormitory raids until the interest in this particular academic aberration had begun to wane, the halls and houses apparently felt that the College would lose cast if its participation were not registered. Veisheathon runs and torch lighting by state and national dignitaries were original and unique demonstrations that were harmless and supposedly reflected a classical appreciation.

The Korean conflict with the renewal of mobilization and the threat of general war was not only unsettling but constructively sobering. Henry A. Wallace's observation, in 1948, that Iowa State College students were not aware of what was going on in the world gave perhaps an added spur

to efforts already being undertaken to make the campus community more conversant with national and world affairs. At the beginning of 1951 the Cardinal Guild endorsed and helped to promote a "four-point program" of general information, including the president's weekly column in the *Daily,* discussing topics specially related to student interests; the opinions of publicists in varied fields in the college lecture course; student-faculty discussions in the coffee forum; and informal group discussions sponsored by campus organizations. The *Daily* published a list of staff members who were available to lead discussions on domestic and foreign issues in halls and houses. Their competence and versatility were vouched for in confident assurance that they were not only masters of their specialties but that their training and breadth of interest was such that they could "talk freely on almost any subject." From the campaign of 1950, the board removed the ban on political addresses on the campus and student party leaders staged rival rallies with speeches by state and national candidates.

► EVIDENCES OF MATURITY

There was a slow but steady advance toward representative democracy as the fuller implications of "student government" came to be appreciated. Cardinal Guild sought valiantly to attain to the realities of "politics and administration" by initiating and carrying out specific projects, particularly those having to do with the interests and welfare of the students. Party programs became more specific and meaningful. The creation of a student "senate" seemed to the student citizenry a desirable step in the separation of powers. The pan-hellenic council sought to guide their organizations into more secure and constructive poli-

cies of finance and living. A notable departure, in line with a national trend, was to substitute gracious services for the inept barbarities of "hell week." The Ward system continued to bring a measure of recreation and good cheer as did the residence organizations. The Pammel Court community had its own particular system of municipal government whose considerable activities were evidenced by complaints and controversies aired in the *Daily*.

Direct student cooperation with the administration and staff was secured by representation on the college councils of particular concern to their interests, as well as on special committees on general institutional undertakings. Divisional councils involved staff-student cooperation in curriculum making and divisional activities. Undoubtedly there was a desire to extend these relationships as soon and as fully as a reasoned and responsible student opinion made feasible. Such experiences provided realistic training for "careers" of varied sorts and a basis for understanding alumni relations.

The alumni in general were showing increasing awareness and rational interest in the problems and needs of their College. Strong national and regional organizations were advised and serviced by the central office directed by a uniquely understanding and inspiring executive secretary, Wallace E. Barron, '28. The *Alumnus,* and the *News of Iowa State* issued by the information service, kept the nationally and world-wide scattered sons and daughters in touch with the kaleidoscopic campus scene. Inevitably old grads had their prejudices extending at times to obsessions and phobias — carried over in most cases from undergraduate experiences.

Football in these years seldom gave occasion for pre-

game demonstrations, which in the good old days had disrupted classes, or for destructive celebrations. While in other sports the conference pace was well maintained, the gridiron fortunes after the departure of the war recruits steadily declined to the 63–0 crushing defeat in 1946, by the Oklahoma "Sooners." A booster club and a change of coaching staff brought but slight and temporary alleviation to a problem that was to engage the serious attention of the administration and the alumni.

After prolonged and heated discussion, an alumni committee was set up, headed by Kenneth P. Wells, '32, who had made a notable record as football coach of the Ames high school. In early 1947 it presented a report reviewing all aspects of the situation and presenting drastic recommendations. To inaugurate the new day and "deal," there was proposed the strengthening of the present athletic council and the football coaching staff, a greater cooperation by the academic staff, athletic scholarships, a physical education major, and more adequate equipment. It sought the full benefits permitted by the National Collegiate Athletic Association. The report brought no sweeping changes from the administration immediately, but over a period of years many of its suggestions were adopted gradually.

► RECOGNIZE ACHIEVEMENT

The serious concern of a growing number of former students extended to the scholastic and research programs. The annual alumni awards: the special recognition medal, the Marston medal to alumni engineers of outstanding achievement, the senior prize, the Chicago Club merit awards, and the faculty citations were all a recognition of achievement in scholarship and leadership. Notable be-

quests like those of LaVerne Noyes, '72, Carrie Lane Chapman Catt, '80, and Wilfred G. Lane, '09, and Walter G. Wells, '10, were all directed to the encouragement and advancement of scholarly effort. In 1934 the Alumni Association was incorporated to allow the receipt and administering of gifts.

As a function of the organization a board of patent trustees was created to supervise the patenting and licensing of the inventions of college investigators. To safeguard the funds of the Association from being tied up in infringement litigations, with the increasing number of such patentable findings, in 1938 all of its interests in patents were officially transferred to an Iowa State College Research Foundation. In addition to insuring the proper use of the patents and remunerating the inventors, the College obtained a modest addition to its research funds. Quincy C. Ayres, of agricultural engineering, served as executive officer from the beginning.

► ORGANIZED APPEAL

Most widely participated in and appropriate in objectives has been the Alumni Achievement Fund. By World War II something over $100,000 had been raised through the association. The greatly increased enrollment and the great increase of unfinanced projects indicated a pressing need for scholarships, subsidies for conducting and publishing research studies, campus memorials, and other undertakings not provided for in the regular support funds. The inspiriting term "achievement" was added to the intensified campaign. Following a thorough organization, the first of the "achievement" campaigns was launched in 1951. The response within six years from fewer than three thousand

donors of $48,000 to over six and a half thousand giving nearly a quarter million was an assurance of future possibilities. The existence of such an expanding fund suggested a growing number of worthy and appropriate undertakings that had not been available through the regular channels of financing.

Such an understanding interest in college affairs, and response to its needs, was of especial significance at a time when increasing numbers of graduates were coming to positions of leadership in technology, corporate business, the professions, and the public service. It "meant something to be a graduate of Iowa State College," not only to the student but as well to the state and nation and, consequently, to the rating and recognition of the College — nationally and internationally.

Chapter 7

A National School of Science

THE LAND-GRANT COLLEGES and universities were assuredly, as their titles indicated, state institutions; but in origin, aid, and functioning, they were no less national. While this relationship became manifestly evident in an age of political and social concentration, it was recognized from the beginning. Daniel Coit Gilman in an extended article in 1867 in the *North American Review* referred to the new ventures in higher education as "Our National Schools of Science," as did the bureau of education from this date, and Welch in an address at the Centennial Exposition of 1876 used the term, "National Industrial Schools."

The unity of the group, foreshadowed in the earlier industrial movement, was cemented by the organic and supplemental acts as well as by common interests and problems. The newer colleges based their organization and curricula upon those of the older institutions, and there was a continuous exchange of ideas and experiences by correspondence

and inter-visitation. With the shortage of trained scientists, especially in the technical lines, the interchange of staff members was especially marked, involving at times considerable rivalry, but, in any case, disseminating instructional and research talent. Thus, as noted, three of the leading members of the first faculty of the College soon found more promising conditions at Cornell, while, in turn, that institution provided the foundation of the permanent staff of the engineering division. Throughout the formative years, there was especial difficulty in getting and keeping competent professors of agriculture.

► NEED CLEARING HOUSE

An organization for discussing common problems, recommending standards, providing a direct contact with national departments and bureaus, and influencing congressional legislation was clearly indicated. The National Education Association was a neutral tiltyard for jousts between ultra-individualists like Charles W. Eliot and James McCosh and the champions of state education. But a servicing organization of their own was essential for progressive growth of the land-grant institutions.

From 1871 to 1887 seven consultative gatherings were held, five at the instance of the commissioner of agriculture and several advised by the commissioner of education. With the support and blessing of both of these agencies, the Association of Agricultural Colleges and Experiment Stations was organized in October, 1887. The date coincided with the act giving federal aid to experiment stations which the spokesmen of the colleges had been seeking for some years. Seaman Knapp had taken the lead in formulating and promoting bills for such support. In 1882 he drew up a proposal

known from its sponsor as the Carpenter Bill which was slightly modified the next year as the Holmes Bill. The colleges were circularized and the bill was presented to the convention of 1883. But the plan was objectionable to most of the colleges as involving, it was felt, a centralization of authority that made the stations subservient to the commissioner of agriculture. It was consequently superseded by a compromise written by Commissioner Norman J. Colman with the advice of spokesmen for the prevailing college sentiment for fuller state initiative.

Knapp was a member of the committee that formulated the plan of permanent organization and Iowa State's representatives from the beginning were active participants in the meetings and work of the association. At the first meeting Chamberlain was on the committee to report a plan for the organization and management of experiment stations and of that on nominations. Speer gave one of the few papers (title not indicated). During the early years Curtiss, Gillette, Patrick, Pammel, Osborn, Weems, and Summers participated actively in their respective divisions. In 1899 Beardshear proposed that the N. E. A. should be informed of the scope and mission of the association and he was given the task the following year.

Pearson's connection with the association was unique in length of service and in influence. He held a leading position from 1913, when he was made a vice president and chairman of the college section, to his retirement from academic life. For twenty years he was a member of the key executive committee, and chairman for seventeen. He was president in 1924. During the years of his service some of the basic measures dealing with agricultural education and research were enacted, and the committee was actively concerned with all

of them, as well as with some that failed. Notable among the lost causes that he backed long and vigorously was that of federal grants for engineering experiment stations. Pearson's 1924 presidential address on "The Great Responsibility of Land-Grant Institutions" for rural wealth and welfare apparently made a considerable impression on his fellow administrators.

As a leader of the engineering division, Marston showed a breadth of interest that anticipated later trends in curricula and methods. As president of the association, in 1929, he delivered an address on the highly significant theme of "National Aspects of Land-Grant Colleges."

Other members of the staff have contributed influentially to their respective divisions or sections, as Buchanan in graduate and station problems and Bliss in extension. Home economics became increasingly prominent following the Purnell Act, and veterinary medicine was admitted as a separate division in 1948, and, as already noted, arts and sciences, in 1954. At the meeting in 1955 ten staff members were scheduled participants in the program.

Iowa State College has contributed generously to the roster of the leadership brought together in this and other land-grant organizations. At least a dozen land-grant presidents and a host of deans, directors, and key professors have earned one or more degrees at the College.

► NATIONAL POSTS

Alumni and staff, especially from the 1890's, have served notably in the national service. Throughout, the relations with the Department of Agriculture have been peculiarly prominent. The College has provided four secretaries: James Wilson, Henry C. Wallace, '92, Henry A. Wallace,

'10, and Ezra T. Benson, M. S., '27. Assistant and undersecretaries have included such scientists and administrators as Willet M. Hays, '85, Elmer D. Ball, '95, R. A. Pearson, George I. Christie, '03, M. L. Wilson, '07, John H. Davis, '28, and Marvin L. McLain, '28. Bureau heads have embraced all branches of the Department's expanding interests, as evidenced by such a variety of specialties as Charles D. Boardman, '74, dairying; Carleton Ball, '96, plant industry; Henry C. Taylor, '96, agricultural economics; Clyde W. Warburton, '02, farm management; and Thomas H. MacDonald, '04, roads. Research workers "from Ames" would fill a substantial directory.

Other departments of the home and foreign service were by no means shunned. For instance Royal Meeker, '98, served as head of the Bureau of Labor Statistics, 1913–1920. In the land-grant survey of 1930 conducted by the office of education, C. H. Brown was largely responsible for the analysis and recommendations on libraries, Buchanan contributed extensively to the findings on graduate work, Marston advised on engineering, Stange on veterinary medicine, and Herbert M. Hamlin on vocational education. Barton Morgan and other members of vocational education did research for the federal advisory committee on education in 1939.

With the vast expansion and centralization of public services and regulations in the modern war era the services on and off the campus have increased many fold. In both stages of the world struggle the enlistment of plant and talent was "total." In the no less pressing war on depression, the College — with alumni in charge of the most burdened Agricultural Department and more and more of the staff conscripted for advisory or "action" programs — might truly

be said to have been a focal point of the recovery program. The proper role of the land-grant college in federal-state relationships in agriculture, as an objective fact finding and disseminating agency, was clearly set forth, in 1938, in the report of a committee headed by John A. Veig of history and government. In the post-World War II years with the hope and effort for a peaceful world, the more constructive and enduring of these national services were given fuller and more systematic establishment.

The requirement of "military science and tactics" in the organic act now came to full and complete stature in a department in which distinct curricula in military science, naval science, and air science were provided, involving the securing of basic training, temporary reserve status, or a permanent career. The department was administered in the Science Division by Dean Gaskill, who after two years as chief scientist in the research and development department of the U. S. Army in Washington became a brigadier general in the reserves. The grueling Korean struggle brought startling realization of the need for continuous and progressive training. The presence of a considerable number of reserve officers on the staff lent further support and emphasis to this branch of land-grant education.

Education of the returning veterans in numbers greatly exceeding expectations, necessitated major expansions in staff and plant. In basic subjects such expedients as early morning and evening classes were resorted to. The costs were tremendous and here as elsewhere differences arose over the basis of compensation, which in some cases led to prolonged negotiations in reaching adjustments. Precedents for subsidized education on such a scale were wholly lacking.

In the varied areas of research appropriate to the Col-

lege, cooperation and collaboration with national agencies have been no less dynamic and progressive. In addition to the regular program of the Agricultural Experiment Station, which has had continuous expansion in size and variety, special joint research enterprises have been conducted on the campus or in the immediate vicinity. Some three dozen resident collaborators with the experiment station and the veterinary institute were engaged in research on regional problems or the regional aspects of national studies. In the regional distribution by the U. S. Department of Agriculture of centers of special research, a swine laboratory was located southwest of the campus. Such an establishment seemed especially appropriate in view of the historic achievement that had been made a half century before in the hog cholera research station on the river near Ames, in the eradication of that devastating plague. Equally appropriate seemed the selection, in 1956, of the college area for the integrating animal disease laboratory, with construction to start in the Centennial year.

► SEEK NIGHT BROADCASTING

The expanding services to listeners over WOI fostered diligent efforts to obtain permission from the Federal Communications Commission for night-time broadcasting. Opposition from a commercial station in another state operating on the same wave length blocked this move, however, so WOI-FM was added as the evening outlet. Even more problems arose in 1950 with the pioneer venture in educational television. With great foresight, the College had applied for TV license before a "freeze" on channel allocations was imposed, and as a result, WOI-TV was not only the first television station in central Iowa but also the *only*

station on regular channels from February 21, 1950, until the freeze was lifted and the first of Des Moines outlets came onto the air April 25, 1954.

Station management at WOI-TV was confronted with a policy decision before taking to the air: should operations be confined strictly to local educational telecasts, or should heed be given to the clamor for "network television" by the central Iowa viewing audience — as a "service function"? A combination of educational programs and popular entertainment the public desired — in good taste — was the conclusion. The use of national network programs necessitated the carrying of commercial advertising in order to cover the heavy costs. With all major networks eager to beam through the only outlet to the central Iowa audience, the station was able to pick and choose from the best of all the offerings, in balance and good taste. As had been its announced policy, WOI-TV dropped individual network affiliations as soon as the network's regular commercial outlet began operations in Des Moines. Whatever the economic aspects, the educational and cultural possibilities attracted wide interest and cooperation from other institutions engaged in similar ventures, from foundations, and from servicing agencies such as the office of education.

► ATOMIC RESEARCH CONTINUED

By far the most original and elaborate of the post-war national establishments at the College was the Institute for Atomic Research. The Board of Education felt that the select staff should be held together and that the work which it had done so effectively for the exigencies of war might be continued more deliberately for peacetime services. In connection with these investigations the Institute might

train much needed scientists in areas of the physical and biological disciplines related to atomic energy. Throughout, the service would be available for call by the government for its special projects. This research was to provide the major portion of the involvements.

The background and organization of the Institute fitted admirably into the plans of the federal Atomic Energy Commission. For their purposes there was established within the Institute the Ames Laboratory of the U. S. Atomic Energy Commission. In the area of the chemistry-physics buildings the commission constructed on leased lands a metallurgy building, a general laboratory research building, and a commodious office, study, and conference hall. In addition a synchrotron was located in a building northwest of the campus. At the same time, certain chemistry and physics laboratories were adapted to the applications of the Institute.

Some of the main lines of the research have been the development of radioactive tracers for research utilization, the separation of rare earth elements, the preparation of some of the rarer metals, and investigations of the civilian uses of nuclear power. While the findings of the laboratory are subject to classification, considerable portions have been available for publication. Iowa State College has been one of nine educational institutions with which such laboratories have been placed. Spedding and Wilhelm continued as director and associate director, assisted by technical specialists from departments involved in the varied projects.

The ever-extending international involvements brought a steady demand for the technical services of the College abroad. Such participation had previously been undertaken under the sponsorship of special organizations and

foundations. In 1922 and 1924 W. H. Stevenson served as a delegate to the International Institute of Agriculture at Rome. In 1927–1928 Lindstrom surveyed the biological and agricultural work of European universities for the Rockefeller Foundation. He was also a visiting professor at the University of Colombia in 1945. In 1929 Davidson served as expert on the mechanization of farming for the American committee on colonization in Russia. For two steadily worsening years, 1947–1949, he sought to render the same service in China. From 1930 Buchanan had a leading role in the bacteriology section of the International Association of Microbiology. In 1949 he was a University of Chicago professor at the University of Frankfurt and the following year served on a commission to survey the possibilities of technical aid to South America. For the Food Foundation he helped to appraise the agricultural college of the American University at Beirut, of which Sam Edgecomb, Ph.D., '36, was dean.

Other notable services sponsored by the native countries or by foundations were lectures by Jay L. Lush, on animal husbandry, delivered in Latin America, Scandinavia, the British Isles and India, during and following World War II. Rockefeller Foundation projects in animal husbandry and agricultural engineering were conducted by L. N. Hazel and N. H. Curry, respectively, in Colombia, and surveys under the same sponsorship were made by the statistical laboratory in Colombia and Crete. C. S. Reddy, of agronomy, served as visiting lecturer in the University of the Philippines, as later did John B. McClelland of vocational education. Gerhard Tintner, econometrics, lectured extendedly in England and on the Continent.

Fulbright grants and lectureships were awarded Eliza-

beth Hoyt and Edna Douglas, both of economics, in Guatemala and Norway, respectively; Fred W. Lorch, of English, in Germany; L. Meyer Jones, of veterinary pharmacology, and Andrew L. McComb, of forestry, both in Austria; Don Kirkham, of soils, in Belgium; Paul F. Sharp, of history, in Australia; Leonard Feinberg, of English, in Ceylon; and Herman J. Stoever, of mechanical engineering, in Turkey. Guggenheim fellowships were accorded to Harrison Shull, of chemistry, and George S. Hammond, of dairy industry, for study in Sweden and in Central Europe, respectively.

Public service for the various aid and advisory branches of the state and agricultural departments and the United Nations has been substantial and continuous. Buchanan served on two commissions of the FAO, the Clapp committee to survey productive possibilities and the resettlement problem for the Arab refugees, and the mission to study conditions and needs of agricultural colleges in India. Frank F. Riecken, of agronomy, lent his services to that aspiring country by a three months' soil survey, then later to Uruguay for a five months' survey. Carl C. Malone, of agricultural economics, was released for a full year in Wales and England. Barton Morgan, of vocational education, advised on the agricultural sciences in Nicaragua; James J. Wallace, on agricultural development in Chile, and Lester E. Clapp was called to Brazil to share his experience in soil conservation.

At the personal invitation of General Douglas MacArthur, C. H. Brown advised on the formation of a national Japanese library. G. A. Lineweaver, of the state 4-H office, accepted assignment in the Philippines; Geoffrey Shepherd, of agricultural economics, advised Japan as well as West Germany and Burma, on the rehabilitation of food produc-

tion. In quite a different but equally essential realm, Gerald W. Fox, of physics, served as operations analyst of the Japanese air force. Also serving as air force advisors in Japan were E. W. Anderson, of aeronautical engineering, Dean W. Stebbins, of physics, and Wayne R. Moore, of electrical engineering. Under the technical assistance programs of the FAO, John Aikman, of botany, served in Ecuador; Ray Wakeley, of sociology, in Brazil; and W. H. Pierre, of agronomy, in Uruguay.

The statistical laboratory, under the direction of T. A. Bancroft, rendered most effective aid to the United Nations, and hence to the nation, in many and far situated areas. Sampling methods were developed for the allied observations of the Greek elections. Of very practical concern was the working out of experimental designs and survey techniques for agricultural experimentation in the Near East, India, and Latin America. Bancroft himself served in India and Mexico. Raymond J. Jessen served in Ecuador and Argentina; Paul G. Homeyer in Israel and Mexico; and P. C. Tang in Ecuador.

The most direct application of the technical aid program was focused on the trouble spots of the Near East. Prolonged service was rendered by Murl McDonald, of extension, and C. Y. Cannon, of dairy husbandry, in Lebanon; B. S. Pickett, of horticulture, in Syria; Iver Johnson, farm crops, and W. E. Loomis, of botany, both in Egypt; and Ercel Eppright, of food and nutrition, in Iran.

The Iowa State College Tropical Research Center — established at Antigua, Guatemala, by a grant from the Earl May Seed Company — was of unique interest as the first foreign establishment initiated by the College. The institute was primarily concerned with the study of the corn

The bounds of research are not determined by state lines nor even by national boundaries. As part of its dedication to service to agriculture, in 1946 the College initiated the Tropical Research Center at Antigua, Guatemala. From its findings there the College hoped to serve its home state and the nation by developing improved crosses of corn, while at the same time increasing the native production as a practical demonstration of the "good neighbor" policy. In 1954 the Center was transferred to the U. S. Foreign Agricultural Service.

plant in the region of its probable origin, or at least earlier habitat, with the aims of developing improved crosses for the Corn Belt and increasing the native production. Irving E. Melhus, '06, and George Goodman, both of botany, directed the organization. In 1955 the established center was turned over to the Guatemalan experiment station. The venture was thus not only a valuable scientific project

involving a product of vital concern to the constituency of the College, but it also involved a practical demonstration of the "good neighbor" policy.

Due largely to provisions by the national government and foundations for interchanges and aid to refugee scholars, an increasing number of distinguished foreign professors have enriched the instructional and research programs by special lectures, the offering of courses, and consultations. The number of foreign students both undergraduate and graduate, involving a great diversity of nationalities, has remained fairly steady. The main interest has been in agriculture and engineering. Delegations of top rank foreign visitors have been entertained on the campus from time to time. Typical examples are the members of the Japanese Diet in 1951 and the much publicized tour of Russian agriculturists in 1955.

► STUDENTS FOLLOW WORLD EVENTS

For their part, Iowa State College students have become increasingly internationally conscious. Military service around the globe, the popularizing and facilitating of foreign travel, and the opportunities for commercial and diplomatic service abroad have all contributed to this growing awareness. An influential group has studied under Fulbright and other exchange programs. In 1935 Edgar W. Timm, a graduate in chemical technology, was appointed one of the four Rhodes scholars from the five-state district. In spite of the exacting foreign language requirement, the inter-department programs in foreign trade and service — under the chairmanship of Alfred P. Kehlenbeck, head of modern language — have had a continuing, if necessarily select, demand.

In national organizations, general and professional, the staff has provided top leadership in all of its major areas and has earned many superior awards. Any attempt at mere enumeration of offices held and of special awards and citations would inevitably be incomplete and invidious. But in an inclusive view, comprehending all branches and interests of the College, it may not be out of place to recall that Beardshear was president of the N. E. A., Pearson and Marston headed the Association of Land-Grant Colleges and Universities, that Gilman, of organic chemistry, Werkman, of bacteriology, and Spedding, of the Atomic Research Institute, have been elected to the National Academy of Sciences, and that up and down the land, among all lovers of books and of the learning that comes from their most effective use, Charles Harvey Brown has been recognized as the nation's "Mr. Librarian."

In addition to anniversary convocations, notable national gatherings have convened on the campus — in spite of lack of metropolitan facilities. In July, 1910, the largest and most representative of the series of "graduate schools of agriculture," sponsored jointly by the agricultural college association and the Department of Agriculture, was held at the College. The second institute of the Country Life Association, in 1936, found congenial and appreciative hosts in the Agricultural Division. In June, 1956, the annual meeting of the American Society for Engineering Education brought an effective utilization of the combined campus resources.

In the midst of all these advances and adjustments, there was an automatic change of administration, in 1953, when Friley reached the age of retirement. His term was the longest in the history of the College; with the deanship and

vice-presidency he had had a continuous service of a score of stressful years. Coming in the latter stage of the depression, he had served through the global, "cold," and Korean struggles. The economy had passed from restricted to full production, and from deflation to inflation. Politically the years had seen changes in party control and in the consequent philosophies and practices of government. The realities of mass education had tried academic theories and practices to the extreme. Such turbulent and uncertain times inevitably brought sudden and brusque interruption to the orderly course of collegiate planning and functioning, and played havoc with budgetary estimates.

In spite of the insecurity of the social order and, at times, the instability of the campus scene due to conflicting personalities and misunderstandings over policies and procedures, these years had brought achievements unprecedented in the life of the College. Changes and advances going on for a generation were finding measurable fulfillment. The whole institution had raised its sights. In organization, program, and service to state and nation, Iowa State College had truly come of age. Along with new and continuing problems, the succeeding administration would find a leading land-grant institution with modernized plant, distinguished staff, and national and international standing.

► SEEK NOMINATIONS

The selection of the new president marked a decided trend toward representative processes. An alumni committee was invited to submit names, and, in still greater contrast to past practices, the faculty was requested to elect an advisory committee with representation from the different divisions. This committee urged staff members to

make suggestions as to the type of individual desired and to recommend possible candidates, on or off the campus. The submission of over two hundred names indicated the extent and variety of the interest. Dean Gaskill was the only avowed candidate at the College. Again, contrary to previous elections, there was an absence of personal rivalries and divisional jealousies, but rather an earnest effort to seek the best interest of the College as a whole. It was evident that board, alumni, and staff were united in a sincere endeavor to secure a leader who could most adequately carry forward the full land-grant idea for an Iowa State College come of age.

The selection announced in November, 1952, gave a full justification to the representative procedure. The president-elect was a deliberate and reasoned choice. He did not represent and was not obligated to any special faction, group, or interest. As a further asset and assurance of understanding and adaptability, he was the first alumnus to become a permanent head of the College.

James Harold Hilton was a native of North Carolina who entered Iowa State College as a sophomore and received a B. S. in animal husbandry in 1923. He subsequently earned an M. S. at Wisconsin and an Sc. D. at Purdue. After service of three years as county agent in Greene County, Iowa, he had joined the animal husbandry staff at Purdue where he rose from assistant professor to professor (1927–1945). In 1945 he was called to the North Carolina State College to head the animal husbandry department and, in 1948, advanced to dean and director of the agricultural division. Mrs. Hilton (Lois Baker, '23) was a native of Story County, and return to the campus just prior to July, 1953, thus marked a homecoming.

President James H. Hilton shouldered responsibilities in July, 1953, as the first alumnus to become full-fledged head of the College. Under his guidance, Iowa State at the Centennial was looking forward to its second one hundred years.

The new executive's idea and aims, as set forth in his first convocation address and in special group meetings, showed a clear and realistic understanding of the College's place and responsibility in this crucial era of higher education. As an understanding alumnus, he was mindful of the heritage and traditions of the years. But at the same time, he recognized the obligations to serve the present day by wide advances and — where essential — by sharp departures. With full appreciation of the implications of land-grant education, he sought to meet the challenge of a tidal wave of mass enrollment without lowering the standards of instruction and research.

► "TEAMWORK" PHILOSOPHY

Hilton's broad view of the land-grant mission comprehended not only the thorough and liberal training in the technical branches, but a recognition of the place of the general studies in training for vocational competence and social awareness. To realize the objectives of a popularly based and purposed institution in an age of consolidation and complexity, he recognized that the fullest cooperation with a high degree of *esprit de corps* at all points on the campus was essential, together with the loyal and understanding support of all classes and interests of the state.

Forthright expansions and reorganizations were immediately entered upon. The housing program went forward in added halls and apartment units for married students. The priority demands of an addition to the Library and a general class-room building were vigorously pressed. The Memorial Union was progressively extended to provide supplemental services as the center of campus life. With all the pressure of emergency adjustments, executive faith and

creative imagination visioned also an assembly, exhibition, and recreational center to be provided by donors with ample means and broad interests.

Administrative changes were in line with the most approved advanced academic practices. The office of provost was created to have supervision of curriculum making and teaching personnel. James H. Jensen was chosen for this position — a specialist in plant pathology with wide administrative experience and understanding. The obsolescent junior deanship was abolished and a general office of student affairs was organized and conducted by the former dean, M. D. Helser, until his death. His assistant, Millard R. Kratochvil, took over the exacting office. The work of the office of information service was extended and systematized; a weekly newsletter kept the staff informed of college developments while they were going on. The college calendar was rearranged to provide quarters of equal length and an earlier commencement date, beginning with the first year of the second century of operation. Student rules and regulations were collected, revised, and clarified in an attractive booklet, and a handbook of what every faculty member should know about the institution was carefully compiled. The approaching Centennial stimulated an institutional consciousness that led, at long last, to a systematic effort to collect and organize the archives and other available records. Mrs. Dorothy Kehlenbeck, the curator, proved to have rare skill in combining the essential requisites of this exacting branch of librarianship: discrimination in organizing and classifying materials — extending from the formal to the fugitive, and in understanding aid to numerous and varied users of the collection.

Department adjustments were made in line with new

emphases and needs. Industrial management, as a training for business and industry, was separated from economics. The department of religious education which had been launched in 1922 as a school of religion under the sponsorship of various cooperating denominations, then made a department of the Science Division in 1936, was joined with history and government as a philosophy section. The direction of religious life and the college chaplaincy which had been vested in the head of the department were transferred to a director in the office of student affairs. A pioneering professorship, administered in the history department, but of direct interest for all subjects, was that of the history of science. John C. Greene, educated at the University of South Dakota and Harvard and with teaching experience at Chicago and Wisconsin, was brought from the latter institution to essay this embracing integration.

► FACULTY COUNCIL FUNCTIONS

With the full support and promotive aid of the administration, a long forward step in faculty participation was taken by the organization, in 1954, of a representative faculty council. Under the alert original chairmanship of Norman Graebner, of history, and carried forward by his successors, it proceeded to function constructively to express faculty opinion and share in policy making.

The cooperation of the Ames Chamber of Commerce with the College authorities in 1956 in securing the location of the federal animal laboratory marked a new high in city-campus understanding. The discussion of the perennial traffic problem, a source of conflict in the past, showed the same effort at mutual agreement.

In instructional advance, a council on instruction was

instituted as a clearing center for the collecting and trying of new methods and devices. The testing bureau was broadened to a student counseling service and high scholarship was recognized by the issuing of deans' lists. A browsing library in the Union, under the direction of Frederica Shattuck, was a stimulus to broadened outlook by the purposeful use of spare time.

Under grants from the Alumni Achievement Fund, distinguished professorships were established. The initial selections, announced at commencement in 1956, were Earl O. Heady of agricultural economics, an authority in econometrics, as Charles F. Curtiss distinguished professor of agriculture; and Glenn Murphy, head of theoretical and applied mechanics and adviser to the atomic institute, as Anson Marston distinguished professor of engineering. The following year divisional chairs were completed with the selection of Lydia V. Swanson, of child development, to the Mary B. Welch professorship for home economics; Frank H. Spedding, of atomic research, for the science distinction, and Frank K. Ramsey, of veterinary pathology, to the Clarence H. Covault chair for veterinary medicine. At the same time Wallace L. Cassell, of electrical engineering, was chosen for the second Marston professorship, and Jay L. Lush, of animal breeding, was named for the second Curtiss distinction.

From the first the new president showed a sympathetic and understanding interest in student participation and self-expression. But at the same time, he recognized that freedom of action involved responsible behavior. A student riot following an unexpected football victory in the fall of 1953 was adjusted without severe penalties in the belief and with the understanding that no such violent demonstra-

tions would be repeated. But following a dormitory raid and destructive depredations on other college property in the spring of 1956, which representatives of the Guild sought to prevent, the leaders were promptly suspended and resulting protests from influential quarters met with a determined stand for the maintenance of law and order, regarding the justice of which there could be no reasonable question.

A signal honor was accorded the College just as it turned into the Centennial year, in January, 1958. Iowa State was admitted to the Association of American Universities, a membership accorded only to those institutions "...of national prominence with a sound and proven record in the fields of scholarship and teaching." Only forty other institutions had attained this distinction since the AAU was founded in 1900.

All in all, the new administration, fully appreciative of past achievements and with a realistic understanding of present demands and of future possibilities, was a most appropriate and auspicious molder and director of the destinies of Iowa State College at the turn of the first century.

Chapter 8

Retrospect and Prospect

A CENTENNIAL OBSERVANCE is an opportune time for retrospective appraisals and for estimates, at least, of prospective trends. A superficial view may see no pertinent connection between the open prairie outpost and the modern metropolis of learning. A farmhouse, a few outbuildings and a single college hall have become a physical plant valued at approximately 50 million dollars. The original college farm of 648 acres has become a campus of 460 acres, plus more than 6,000 acres of research and demonstration at Ames and throughout the state. A handful of professors, a matron and a farm superintendent have become a faculty of approximately 1,000 with hundreds of clerical, technical and maintenance helpers.

But, with all the profound and spectacular changes and transformations in size, organization, and program of the most dynamic of centuries, the basic problems have persisted. Hence the main consideration of this over-all survey

is not primarily the growth in size and form but rather the fulfillment, amid the changing conditions, of the motivating idea.

As regards extent of service, Iowa State College has shared generously in the mid-century bulk enrollments which have boosted the nation's total from less than a quarter million at the turn of the century up to three million at the Centennial year, with predictions of doubling by 1970. For the College with student population around ten thousand, conservative estimates have predicted from twelve to thirteen thousand by 1965, unless definite restrictions are imposed or unforeseen contingencies intervene. To set rigid tests for superior ability or grade requirements beyond the prevailing standard of the state certification would seem contrary to the aim and spirit of the land-grant system. After all, the problem of size is a relative one that was by no means peculiar to the mid-century. In an address to the N. E. A. in 1900, Beardshear expressed great alarm for the effectiveness of learning in large universities with several hundred graduates. In 1922 at the land-grant association meeting, a pioneer agricultural scientist referred to the "alarming" increase in college enrollment. Big colleges and universities have been but a phase of bigness in all other social institutions. The main consideration has been and will continue to be whether the collegiate throng was seeking the most socially desirable type of training and, if so, whether their needs were being adequately met.

The large enrollments were representative in area truly national, representing all regions and states, and international, with students from all continents.

In tradition and practice, economic and social democracy has persisted. On an equality socially and in leadership in college enterprises with the owners of sport convertibles

have been the large proportion who earned their way, in whole or part. Thus in 1942 there was no special surprise or comment on the fact that the president of the student body earned his board in a second-class restaurant and the Veishea queen was employed on a cafeteria line.

Steadily mounting costs of higher education have brought proposals that in state, as in private institutions, fees be increased to bear a substantial portion of the added burden. In an inflated economy certain upward adjustments are inevitable. But fairly to maintain the inherent economic opportunity, a considerable gap in cost should be maintained between the land-grant and the private colleges. Superior attainment may be rewarded by scholarships, and loans can to a certain extent supplement self help for other worthy but needy students. Although such aid has not kept pace with the real need, undoubtedly the proportion of the youth of Iowa to whom this training is available is much larger than in the average state.

► DEMOCRACY PRACTICED

There has been no distinction or discrimination of race or creed in admission or in participation in any of the scholastic or extra-curricular programs. Occasional attempts of fanatical agitators — usually from the outside — to unearth discriminations in civil rights have been quite futile, aside from baseless rumors.

With all the highly colored stories of college pranks and disorderly conduct related by old grads, and the untoward occurrences that from time to time capture the headlines, the general tone of the student body through the years has been relatively serious and purposeful. Inevitably a certain number enroll "just to go to college," to try the social thrills and/or to indulge in favored activities. But the

number of career conscious has always been high. Solid foundation and technical courses have not encouraged shopping and browsing about.

With all the silly cliches about studies and college life, scholarship has always been highly valued, if not as generally or thoroughly cultivated as could be wished. By the very inclusiveness of mass education, the curves of both intelligence and attainment extend over a considerable range. Entrance by certification has reflected the limitations of mass education at the secondary level, in "democracy's high school." The average modern high school is a victim of its multiple purposes, in seeking to be all things to all taxpayers. From the old narrow, formalized prescriptions intended for the few who were college bent, the modern public educational spirit has decreed a varied and elastic program of generalized surveys, vocations, and activities that rise to and sometimes above coordinate position. In the case of the smaller schools a truncated offering of the least expensive and easiest combinable subjects has been all that the district traffic could bear. As a result of such "preparation," too many college entrants have lacked both a mastery of foundation subjects and of effective study methods and habits.

But in spite of the system and the prevailing practices, there always have been outstanding high school teachers who have found receptive minds and provided a modicum of superior students who not only have secured prizes and scholarships, but have shown the capacity and foundation for higher learning in a real sense. Honors Day and honor society awards attest that a growing number of the saving remnant come to Iowa State College. The symbolic keys, pins, and badges have been worn as proudly and confidently as the letters of athletic prowess and to an increasing degree

have been accorded no less respect by the student body. But, most happily, the two lines of achievement are by no means always in conflict. To an increasing extent, high scholarship is being associated with leadership in varied branches of activities — including athletics. The modern objective is neither skill in amassing grades or in breaking physical records in themselves, but rather in developing the "all around person"— the sound mind in good physique along with social awareness.

► RELATED INTERESTS

The term "activities" has covered a multitude of salutary and helpful undertakings as well as over-emphasized and at times perverted enterprises. The negative aspects probably have been given most attention by reason of their disturbing influence. Thus Woodrow Wilson contrasted the appeal of the side shows with that of the "main tent," and Jacob Schurman referred sardonically to the regular studies as "passivities." In the large and varied offerings of Iowa State College, the so-called "activities" have often related and intermingled with the regular scholastic program. In its varied enterprises, student journalism has given practical application of theories, including business management running to sizable investments. Shop and laboratory exhibits in Veishea and other displays have involved skilled techniques in preparation and operation. Debating has provided a direct training not only for future lawyers and legislators, but also for all who have had occasion to prepare, organize, and defend a case or cause. Dramatics and pageantry have led to professions for a few while providing attractive pastimes for many others. Athletics of both the *inter* and *intra* brands have served as indispensable laboratories for majors in physical education.

Athletics stand apart among college activities in emphasis and consequently as a problem — with football the college sport par excellence and, in the opinion of opponents like Robert Hutchins, *contra bonos mores.* The natural appeal of this sport has led at times to its perversion in commercialization, professionalism, and gambling. Periodical and regional cleanups have been only transitory. The only solution seems to be a deglamorizing that will put this particular sport in its proper perspective and keep it there. "Big time" football, with all that the term signifies, is demonstrably a sport "not worth the candle" — or the bowl. No institution has suffered in scholastic or professional rating by failing to make a high national football ranking. Fortunately Iowa State College, in spite of all pressures, has kept its efforts at fielding "respectable teams" always on a high plane of operation.

► MATURITY IN BEHAVIOR

The curve of student conduct, like the imaginarily conceived curve of social progress, shows marked ups and downs with a gradual upward trend over a long span, subject intermittently to sudden and disruptive reversions. Whether the improvements reflect more effective social control, urbane conformity, and the multiplied outlets for surplus physical and emotional energy, rather than superior moral convictions, might merit serious consideration. At any rate the cruder earlier depravities have gone largely into limbo. Barbarian hazing of freshmen has gone out with the waning of class loyalty and rivalry. Sadistic fraternity initiations have been replaced in considerable part by constructive services to the community, whether due to a more brotherly spirit or to a desire to cultivate better public relations. No doubt both have entered into the amendment.

One always hesitates to proclaim the arrival of a fully civilized campus, due to periodical reversions to outbreaks of mob violence with destruction and desecration of property, scandalous papers and posters, hangings in effigy, wild and riotous parties, and the perennial problem of cheating in examinations. Usually a comparatively few bring this discredit upon the whole student body and the entire institution. It is notable that of late at the College such lawless disturbances have been spearheaded by underclassmen from large city high schools who have thus imported to a generally law-abiding and socially-minded campus the reactions and conduct of their "blackboard jungle." No responsible observer would suggest a return to the brutalities and indignities of hazing, but it would seem that the "freshman rule" applied to athletics might well be extended to restraints in other realms.

Student government has functioned, in some form and to varying degrees, from the days of Welch who was an enthusiast for it. All of his successors, with the possible exception of Hunt, have welcomed cooperation within the realm of special student interests but have not always been in agreement as to the bounds of that area. The main organ, the Cardinal Guild, has grown in definiteness and seriousness of objectives, though like all governments has fluctuated in influence with varying student interest and the consequent leadership. The whole problem of student self-government reduces largely to the matter of the acceptance of responsibility, the willingness of the determining student opinion to enforce their recognized standards by the application of sanctions however stringent. Such conformity to government under law, the foundation of all freedom, must — as in the notable case of an oft-proposed

"honor system" — depend upon firmly established traditions. Again, the establishment of such traditions depends upon a moral conviction which, in turn, should be most securely generated by a reasoned religious belief.

► RELIGIOUS FOUNDATIONS ACTIVE

The most effective and realistic adjustment of the religious interests of students, in this as in other state institutions, is in the organization and functioning of the foundations of the leading sectarian groups which, in consonance with the plan of Jefferson for his model state university, provide worship, counsel, and so far as desired, doctrinal instruction. The common religious activities of the campus have come to be directed through an inter-faith council supervised from the office of student affairs. The work of the Y's has become largely supplemental to these general programs.

Through these agencies, the main faiths are served as fully and sedulously as in the closest church-related college. Rather than being in danger of neglect, as was charged in the past, the conscientious undergraduate is more liable to be overburdened by the elaborate and exacting programs devised by enthusiastic church directors and their boards. In any case, a college student should grow in this as in other aspects of thought and experience. Certainly there is no better opportunity to apply religion and morality than in the daily obligations of study and social participation on the campus. From his student experience of a century ago, the graphic figure of Phillips Brooks is an enduring admonition of the duty to keep the emotional boiler in contact with the operating engine.

A highly qualified, when not depreciatory recognition,

is given to land-grant education by certain ill-advised critics in the judgment that while this type of education trains specialists in various lines, it fails to develop well balanced personalities. As this present interpretive survey of a typical representative has tried to show, this has been the basic aim throughout. Any seeming departure has marked an errant straying from the real spirit and purpose. The test is in the end product. Like wisdom herself, this College, as all others, finds justification in her children, as they have gone out in ever lengthening lines to their share of the work of the nation and of the world. Former students are to be found in all parts of the globe providing contacts — often highly strategic — for the College. Occupationally they are to be found in all fields of business, the professions, and public affairs. In all these "pursuits and professions," former students have developed high leadership.

► OLD TIES STRONG

In alumni relations with the College there has been a marked development in understanding participation. Advice, especially in technical areas, has been helpful in fuller developments and in pioneering in new realms of research. Alert organizations have aided in recruiting not only athletes but superior students at both the undergraduate and graduate levels. The supplemental financial aid, not only of certain special donors but also of the smaller sums of an increasing number coming annually in the achievement fund, has met needs and provided highly appropriate enterprises that would not have been possible through the regular channels of support. Unquestionably this source of income will have a steadily increasing influence upon the progress of the College. There is a growing recognition by leaders

in education that state institutions, as well as private, are dependent upon their alumni for helping to meet the increased demands which they are facing. "College loyalty," in which the students of state institutions proudly claim to be second to none — ivy halls and traditions not excepted — should recognize this "bounden duty" to alma mater.

► REFLECT ON EFFECTIVENESS

One of the most constructive services of the large and rapidly growing host of former students is in giving deliberate and thoughtful appraisal of the institution — especially of departments and staff. In the case of honest if candid expressions, free from undergraduate prejudices, such judgments — reflecting the test of actual experience — may differ considerably from their earlier immature opinions. At any rate, mature recognition should be much more indicative than student rating sheets, letters to the editor, or the certitudes of "bull sessions."

Throughout the years, teaching has been given a central emphasis. This has extended to adult teaching and sharing of information, as the extension services with their appropriate methods and devices have developed. Consequently, unusual attention has been given to the selection of the teaching staff, especially to those of permanent tenure. As a result, the faculty has come to have a wide representation of national and foreign universities, including all of the leading graduate institutions. The great proportion of the College's graduates on the staff have done advanced study elsewhere; the height of inbreeding was reached in the 1880's.

With the competition of commercial and governmental organizations, as well as of the highly endowed private and

the affluent state universities, the recruiting and maintenance of a top rank faculty — especially in the technical departments — has loomed large in administrative perplexities. Matching of such optional compensation, either directly or in "special benefits," has been and seems likely to remain unattainable. Hence to attract and maintain a staff of high caliber, other inducements appealing to the academic temperament have been and will increasingly need to be provided.

To begin with, the prevailing disparity of salary scales, within the different grades, should be more nearly equalized, with definite and substantial floors as well as ceilings and without too great an intervening spread. Professorial dignities, however pleasing otherwise, should not become a substitute for commensurate material reward.

► ACADEMIC FREEDOMS

One of the most valued and indispensable conditions of satisfying academic life and work is security of tenure through freedom of teaching and research. In spite of well-established principles and practices, these essential guarantees have continued to be flagrantly disregarded in institutions large and small, public and private. After the disturbing and disrupting influences of politicians and agrarian agitators in the formative years, the record of the College on this vital interest during the past long generation in general has been highly commendable. But in an age of pressures, constant and alert vigilance is called for by board, administration, staff, and alumni.

Opportunities and encouragement for professional growth are essential to personal satisfaction and the fullest service to the College. There is particular need for such

support in the general subjects that lack the incentive and provision of the organized research agencies. Such serious self-initiated and "set up" projects in writing and in participation in the work and programs of professional societies justify a reasonable aid, in adjusted schedules, needed equipment, and financial help for off-campus research and publication — especially to supplement grants from foundations. The Alumni Achievement Fund has provided timely aid for a number of worthy projects and it is to be hoped that this source may be steadily increased.

► BOOKS OF MERIT

The Iowa State College Press has given appropriate and dignified publication to an increasing list of books in the areas of special interest to a land-grant college in furthering its purposes. The Press is dedicated to the premise of "sharing knowledge." Some 80 staff members in agriculture share efforts in presenting the farmer authoritative information in the *Midwest Farm Handbook. Old Orchard Farm,* by Hugh Orchard, recorded accurately an Iowa farm boyhood in the 1880's before all those who had lived in this era had passed from the scene. *A Century of Farming in Iowa, 1846–1946,* was proclaimed by highly respected editor W. Earl Hall of Mason City as "the best thing to come out of the State Centennial." George W. Snedecor's *Statistical Methods* has earned world acclaim through five editions and paced the output of the more technical writings. *Diseases of Poultry,* edited by H. E. Biester and L. H. Schwarte, was a monumental undertaking in sharing valuable knowledge in the field of veterinary medicine on a professional level. *America's Sheep Trails,* by Edward N. Wentworth, '07, a distinguished historian of American livestock, is a definitive

study of this branch of the industry. At the Centennial, the Press was carrying the name of the College into 77 foreign countries on the title pages of outstanding books in the areas of College interest.

One of the most helpful opportunities for concentration on a subject of investigation, as well as for a refreshing change of scene, is provided by the sabbatical year. Unfortunately, this salutary institution has never found full acceptance in land-grant colleges. The constructive aspects of the system have not been appreciated, and it has been regarded as a payment for personal rather than institutional advantage. A scientist, highly skilled in his particular field but with a curiously benighted social outlook, boasted of having defeated a state child labor measure by deriding it as a "child loafer bill." A demogogical wisecrack could easily represent a year off on full or part pay as a "prof loafer" design. On the contrary, the recipient of such a stipend is more in danger of overwork and strain in his zeal to get forward a book manuscript or at least to collect the makings of several fully documented articles. Without such provision, the ambitious private researcher in state, as in impecunious private colleges, is forced to utilize his scant relaxation time and the ironically termed "long vacation" with — of late years, if able to "make a good case" — modest financial aid from a grant-in-aid by a foundation.

That such "do-it-yourself" officially unprojected enterprises have really been something more than hobbies and pastimes is attested to by a few typical examples: the technical foreign language dictionaries of Louis DeVries; the agricultural history studies of Louis B. Schmidt; the personally carried on and in part financed anthropo-economic studies in Latin America and Africa by Elizabeth Hoyt; the

interpretative studies of Mark Twain by Fred Lorch; the creative and critical writing of Pearl Hogrefe; the arresting studies in international relations by Norman Graebner; the studies in the history of engineering and the writing of an outstanding naval biography by Eugene Ferguson; and the archeological findings of Robert W. Breckenridge. Of course one who has the urge to investigate and create will do it in spite of hell and high water — or the academic equivalents of quiz sections, blue books, and reports. However, a certain recognition and facilitating of these labors — that go far beyond the immediate call of duty and of any remuneration but the "psychic" satisfaction — is encouraging.

► PARTICIPATION VALUABLE

While teaching and research are the main tasks of staff members, certain administrative duties and a possible share in policy making are included, congenially or tolerantly, in their programs. They may have a voice in the selection of the heads of their departments; and there would be many advantages in having the selection outright in a rotating chairmanship. Such a system would tend to deflate the importance of administration in comparison with teaching and research and to share the routine of departmental work and thus make a fuller and better balanced use of talent through the years. Such regular selection would likewise obviate the temporary resort to the anomalous and at times confusing status of "professor-in-charge." Committee service on divisional and general faculties, if not too burdensome (and a member should seldom have more than one major assignment) and in line with the particular interest of the member, may be informing and stimulating.

The faculty council in operation at the Centennial, if it arouses the interested support that it merits, may provide unexampled opportunity for representative sharing in policy making. As a forum for discussion, fact finding, and recommendation, the A. A. U. P. should continue to provide a complementary service not only for its increasing membership, but for the staff as a whole. This society, whatever its limitations of action, is after all the nearest approach to a professional organization for higher education in general.

Equally essential for maintaining a staff at fullest service with selective recruitment and professional advancement, is an adequate provision for automatic retirement at an age when on the average, diminishing returns begin to be manifested, but before the physical and mental infirmities of senescence necessitate termination. In most cases there should still be time to "mature the unfallen fruit" in completing or perfecting scholarly projects, which in many cases may have been long contemplated. This assumes, as any adequate retirement should, a sound and reasonably adequate annuity system.

► FUTURE PROSPECTS BETTER

However, inhibited by an unreal individualism, retirement systems of land-grant institutions have been tardy and inadequate. The pioneer Carnegie pension plan, based upon mistaken philanthropy and with actuarial miscalculation, was not generally available to state institutions. So far as the passing generation is concerned, any provision — coming at this late date — must be rather makeshift and supplemental. But with all the actuarially established probabilities and with the counsel of the leading financial experts in an endowed non-profit corporation with individual and college participation, the junior staff mem-

bers should be able to look forward to being able to "obey the voice at eve obeyed at prime" without undue distraction over the commodity index. At the Centennial, staff members were under term life insurance with two-thirds of the premium borne by the College, and under an annuity policy with the same sharing of cost or else under state retirement program with contributions equal from employee and the College.

Both in active career and in full or partial retirement, staff members through the years have been influential in community affairs. More often than not, members have been serving on the city council or boards, and upon the local board of education. In many cases the city has benefited immeasurably from the advice on technical problems that the academic members have provided.

Whatever the range and interest of the staff members, their main contributions to instruction, research, and community service have inevitably been in the areas of their specialties. The old-time "born teacher," who could "teach anything" with equal facility, belonged to an age of limited and highly formalized subject matter. The modern pseudo-progressive sentiment of teaching "not a subject but boys and girls" is a typical pedagogical inanity. The elemental symbol of instructional relationships in the traditional triangle of the teacher, the student, and the log should really be a square with the addition of the subject to be taught. Every subject of instruction and investigation has its own peculiar values. True teaching and research involves their finding, appraisal, enlargement, and application to life.

This College, as is incumbent upon a member of the land-grant group, has been committed from its inauguration to a wide content, as inclusive as socially expedient at the time, to be given at the higher level in liberal manner for

dynamic objectives. No other type of higher education has been as responsive to the changing interests of the constituency. Consequently, in the relative adjustment of the liberal or general and of the practical or applied, the College has moved in somewhat of a circular course. To the 1890's, before the large and growing demand for technical experts, the general subjects largely prevailed; from the nineties to the world war era the technical and vocational had an increasing ascendancy; in "our own times" of technology and world consciousness the avowed and deliberate trend has been toward a more reasoned and purposeful balance.

► INTERRELATIONSHIPS STRONGER

The pre-war society put the emphasis upon increased and bettered production with inadequate consideration of the social consequences of technological change. In the midst of the one divided world with prevailing process of technology extending to the mechanical completeness of automation and the power attainment of unloosed nuclear energy, the inextricable interrelations of the physical and social, the technical and liberal, are being increasingly recognized. Quite apart from "cultural" values, it should be noted that many of the general subjects today have a directly utilitarian purpose. Modern language has become an essential tool for increasing world contacts in business or governmental positions, diplomatic or economic. At least an elementary knowledge of economics is essential for modern living at every sphere, and with the place and part which governments at all levels have come to occupy in the daily experiences of every citizen, the study of American government, especially in its functional aspects, has become no less a "must." "Communication," in its varied forms, has become essential in every line of endeavor.

In recognition of such special "practical" demands, as well as a growing appreciation of the need for a trained leadership in all of the professions and industries, the technical curricula have been considerably "liberalized" by the inclusion of general subjects, either as requirements or electives. The difficulty has been that at the same time professional requirements have been increasing and standards rising. Thus schemes to have the general and technical run concurrently within the traditional quadrennium are confronted with the expanding scope of both areas. The full and ultimate solution seems to be that made by law, medicine, and theology during the past generation, in the requirement of a general degree for admission to professional study. Veterinary Medicine has taken a long step in this direction in the requirement of two years of general college work prior to entering its curriculum.

► PROVISIONS FOR COMBINED EMPHASIS

For many years, the College has made provision for students to combine their general with technical degree courses as is done in law and medicine, but there have been few applicants. The strong demand for graduates in most technical lines in the current stage of industrial expansion has retarded the requirement of such a broadened foundation. But as the output of graduates catches up with this demand and the emphasis becomes one of quality rather than of numbers, competition will force up professional standards as it has in the older professions. Already some of the engineering colleges are requiring a fifth year, which for many years was an option at Iowa State College, and it seems highly probable that the leading land-grant colleges relatively soon will provide general foundations for their technical curricula.

The division of general subjects — "Science," or more adequately "Arts and Sciences" — affords a rare opportunity for a well balanced liberal education in which the basic sciences are judiciously intermingled with the humanities. This may serve as the basis for specialization in any of the professions or for graduate study in any of the sciences. Legal authorization for such a fully developed coordinate division is given in the definite provision for "other scientific and classical studies" of the Morrill Act and the precise confirmation for the state in the Sutton Act. In recent years precedents have been provided by the elaborate programs in the general studies of other leading land-grant colleges and the establishment of such a division by the conservative land-grant college association. While notable advances have been made in this direction at Iowa State College, they have not gone as far as the organic act assumes or as the current trend in general education indicates as desirable, especially as regards the humanities. The rounding out of the program of this division remains one of the unfinished tasks at the close of the first century. Plans for accelerating general education by interlocking it with the long-established and highly essential preparatory years and by allowing credit for basic courses upon acceptable test of mastery, to the end that the professional or graduate study may be reached at the earliest possible stage, involves a dilution and depreciation of the basic baccalaureate that, if widely adopted, would be calamitous to the standards of American higher education.

The experimental work has served the economy and society of the state with increasing effectiveness. The service has been greatly widened with supplemental federal and enlarged state provision. But there is still need for further

inclusions, especially in the social sciences. In line with the trend of the economy, the long sought federal aid to engineering experiment stations should be given. It would undoubtedly make for the most economical and effective utilization of available talent and equipment to have the whole research program of the College integrated under one supervisory head — vice-president or director. This would be in line with the trend toward concentration of policy making with decentralization of operation.

► APPROPRIATIONS ARE FOUNDATION

As the varied programs of instruction, research, and extension have developed and grown, relations with the state and federal governments have become increasingly involved and determining. Costs of operation, plant, and equipment have grown enormously. The federal subventions, while most helpful, are for specified purposes and tend to be level over long periods. The return from investment funds constitutes a small proportion of the annual expenditures. Marked increase of student fees has seemed not fair or feasible. Alumni aid is generally for services outside the general funds, and grants by foundations and corporations are earmarked for special projects that would not otherwise be undertaken. Hence the main dependence for support, operational and capital, is upon the biennial appropriations of the state legislature. The members understandably are guided in the main by the manifest opinion of their constituents. Hence intimate and understanding public relations become the ultimate determining influence.

The elaborate complex technological university of the age of applied science is a far cry indeed from the pristine agricultural college and farm or "farmers' college" of the

unbroken prairie. But the industries and social institutions of the state have had a corresponding transformation and their College has continued to serve them with progressing effectiveness. Not the least of the educational achievements of any land-grant college is in creating a pride and reasoned recognition by the citizenry that will insure a loyal support for its needs — not only for subjects and projects of immediate utility, but as well for the programs of general education and basic research. The more the people of the state can experience the regular purposeful work of the College and the less that atypical, too easily exploitable episodes of disorder and dissension are brought to their attention, the more favorable the reaction is certain to be.

► ALERT TO RESPONSIBILITIES

Assuredly Iowa State College has not failed to recognize and meet with steadily increasing adaptability its obligations under the organic act. Experts have been trained in numbers corresponding to demand for the industries and the professions and for government service — civil and military. Research conducted separately or in collaboration with federal agencies and made available through the state-federal extension service has contributed immeasurably to state, national, and world wealth and well-being. Training for citizenship in formal study and in and through the total program has been afforded to the host of enrollees from short course to post-doctoral. A goodly number of leaders in all lines of endeavor has emerged from the ranks.

The government of such a complex of instruction, research, and varied public services demands the most capable talent that — amid political exigencies and the availability of a public spirited elite — can be brought together. From

the separate board of trustees of varying size to the present centralized Board of Regents, the membership as a whole has maintained a relatively high caliber — undoubtedly well above the traditional college board — in understanding and vision. Partisan and regional politics have entered into selections probably to a lesser degree than in most of the other appointive state boards. The occupational balance of members has been better maintained in recent years. The records indicate that with few exceptions members have been conscientious and impartial. The early dominant influence of traditionally-minded educators like Henry S. Pritchett, who had a biased and narrow opinion of technical education — especially land-grant education — ceased to be felt with the passing of the last of the original board and its finance committee. Relations with other state institutions and with the private colleges and universities have been increasingly cordial and cooperative from the 1920's. The controversial and to some degree anomalous finance committee seems to have become more definitely delimited and adjusted in its functions. It may be that a single executive secretary might perform the essential functions involved. Under the most favorable conditions, service on the board involves a personal sacrifice that reflects a high degree of public spiritedness.

► WIDESPREAD DEMANDS

If formulating and supervising the general rules of this modern land-grant college is an exacting and perplexing task, "the immediate regulation and direction of the academic, research, and extension activities of the College" is demanding and absorbing of the thought, patience, and energy of the most robust, able, and adaptable chief executive. The

services of administrators of such stature are always at a premium. As President Emeritus Hughes has concluded in his *Manual for Trustees,* "No task that confronts a board of trustees is more difficult than the selection of a new president." And a land-grant president, in particular, has a peculiarly involved and complicated task that calls for the highest type of academic statesmanship. No contrast in the life of this College could be greater than that from the "old-time president" who personally directed everything from the enrolling, counseling, supervising the conduct, and sharing and directing the instruction of the students along with management of the plant and conducting public relations, to the head of a modern public technological institution, with all its multiple functions and ramifications.

► DELEGATION OF RESPONSIBILITY

Obviously there must be an ever-increasing delegation of both detail and authority, within certain limits. A modern chief executive who fails to recognize this needs to be admonished by some temeritous Jethro: "This work is too heavy for you, and you cannot manage it alone." The larger metropolitan universities are coming to have a corps of vice-presidents, deans, and directors that suggest the official hierarchy of an industrial corporation, and land-grant institutions are of necessity fast moving in that direction.

In addition to the selection and direction of key administrational and instructional leaders and the determination of major policies of the College, the modern land-grant executive must deal with a round of state and federal relations that have increased greatly in number, size, and complications since the world war period. First of all, in

this College he must deal with a board on which he has no membership. He must stand before governors and among legislators. He is — ultimately if not directly — responsible for conducting relations and adjusting misunderstandings with varied federal agencies. He is accountable for cordial public relations with the people and organizations of the state, and for cooperative dealings with the alumni. He is the leader and chief spokesman of the state's delegation at the annual meetings of the land-grant association where his stand on controverted issues is matched with that of his fellow executives. Clearly he cannot profitably devote his time and energy to operational routine and technical supervision, hence the necessity for desirable functioning of dependable and adaptable divisional, departmental, and service deans, heads, and directors, a competent and well stabilized faculty, and a responsible student body.

It may be said of the presidents of Iowa State College that they have ranked somewhat above the average of land-grant executives. All have been energetic, conscientious, and honorable. None have involved the College in partisan or sectarian divisions, such as have too often disrupted both state and private institutions. With one brief exception, they have been men of competent scholarship with an appreciation of the field and responsibilities of higher education. Some were the victims of unsettled conditions on the campus and in the state for which they were only in part responsible. All who left the College prematurely had creditable, and in some cases notable careers in their later work. In varied ways and degrees they contributed to the testing and unfolding of the land-grant idea in Iowa.

In striking the balance of the first century of the Iowa

State College of Agriculture and Mechanic Arts, so far as the debits and credits may be ascertained, the showing should be most gratifying to the state-wide constituency and to the national and world-wide alumni. This experiment with democratic education has exceeded the expectations of the most far-visioned of the founders in ways and to a degree beyond their widest imaginings.

► PROMISE AHEAD

The best assurance for the coming years is in the manner in which the College has adapted its organization and program to the changing needs of the economy, society, and security of the state and nation. While at the close of the first century much remains to be completed or perfected, the record shows a progressing commitment to the great idea of the most original of American institutions of higher education. That idea may be best epitomized in the term "service," as used in the truest and fullest sense. The growing and widening appreciation of this responsibility may be noted in the expanding interpretation of the motto of the College as it has passed from the age of individualism to one of ever extending social consciousness.

In the first issue of the *Alumnus,* in 1905, President Storms gave succinct phrasing to the "creed" of the College and extended the motto to emphasize the central objective:

> *We believe in I. S. C.; we believe in Iowa, we believe in the kind of education which I. S. C. offers. We believe in the people of Iowa; we believe that in the future, as in the past, the graduates of this college will command for themselves positions of important responsibility and wide usefulness. We suggest as the motto of the college for its future: "Science with Practice for Service."*

In the fiftieth anniversary issue of the same publication, President Hilton made timely addition with the confident perennial forecast which may well provide the keynote and challenge to the Centennial observance:

> *Since President Storms penned his faith in the future of Iowa State, its graduates have gone out in ever larger numbers into "positions of responsibility and wide usefulness." We are continuously working to do an even better job in providing our students with that combination of technical training and humanitarian philosophy which will equip them to build the world's progress. Imbued with Iowa State's old ideals of democracy and service, our graduates can help give stability and continuity to a world in which change is almost catastrophic.*
>
> *Your Iowa State College, as one of the operating agencies of democracy, will continue to alter its methods to meet the changing needs of men. Indeed the operating and methological changes of the next 50 years may make those of the last half-century appear dull and primitive by comparison. But the end purpose of your college will remain the same. The motto of "Science with Practice for Service of Mankind" will be just as relevant, just as worthy for Iowa State College in 2005 as it was in 1905 and as it is in 1955."*

And, it may be added, as it is at the beginning of the second century.

A Note on the Sources

FOR THE land-grant movement as a whole, the fullest and most convenient collection of official documents and statistics is in the reports and bulletins of the U. S. Office of Education — formerly Department and Bureau of Education (1867 —). The most available information on the agricultural phase of the movement is in the publications of the federal government concerned with that interest: the reports of the agricultural division of the Patent Office (1849-1861); the reports, yearbooks, and varied series of bulletins of the U. S. Department of Agriculture (1862 —). The growth, changes, and problems of the land-grant institutions in operation may be traced in the publications of the American Association of Land-Grant Colleges and State Universities — formerly the American Association of Agricultural Colleges and Experiment Stations: proceedings of the annual conventions, special reports, and bulletins (1887 —).

Underlying ideas and philosophies are best expressed in the writings of such pioneer leaders as Daniel C. Gilman, Andrew D. White, William W. Folwell, and Liberty H. Bailey. Earle D. Ross, *Democracy's College: the Land-Grant*

Movement in the Formative Stage (1942) explores, rather tentatively, the origins and formative developments of the general movement, with a trial bibliography.

The archives and other available records of the Iowa State College, manuscript and printed, are in process of assembly and classification into a systematic college history collection. The main official records are the journals and documents of the Iowa House and Senate and the session laws of the Iowa General Assembly; the records and reports of the Board of Trustees (1859-1909); the records and reports of the State Board of Regents — formerly State Board of Education (1909 —); minutes and reports of the general faculty.

Developments in experimentation and extension may be followed most fully and directly in the reports and bulletins of the respective stations, institutes, and services.

College periodicals — news and special, general and divisional — afford glimpses through the years of the passing and changing scene. The *Faculty Newsletter* — with annual index — issued by the Office of Information Service (since September, 1954) provides an indispensible listing and summary of current happenings.

These records are extended and supplemented by a considerable body of official and private correspondence and of personal recollections of the author.

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