JUBILEE EXERCISES

FRIDAY MORNING

THREE THINGS LAST CENTURY

SECRETARY JAMES WILSON

It has been said that the United States did three unique things in the last century. It built at Washington the Capitol, the Washington Monument, and the Congressional Library, each the finest of its kind in the world. A much grander work was the laying of the foundation of agricultural education and research to prepare the farmer for his life-work, establish agricultural literature, and lift the tiller of the soil to a higher level of efficiency as a producer and a citizen. No country on earth has such a comprehensive system to bring about these results. The total number of land-grant colleges is 65, and 63 of these give courses in agriculture which are attended by 10,000 students. These colleges are also largely engaged in giving instruction in agriculture to adult farmers in the farmers' institutes which are annually attended by over one million farmers. These institutions have permanent funds and equipment amounting to $84,000,000 and an annual revenue of $14,500,000, to which the federal government contributes $3,000,000 and the state governments $7,500,000.

The work is telling in many ways. Young people go to these institutions who would not go to any other. There is a great demand at home and abroad for young people educated along these lines. The brightest farm boys and girls are being educated for the farm. It is the most delightful and comprehensive study of material things to which the mind can be applied.

FEDERAL AND STATE WORK

There has been steady progress during the half-century that marks the work of the Michigan Agricultural College. Con-

gress has endowed educational and research institutions in the states and territories. The federal government has co-operated with the states, and operated where the work was interstate. The movement to educate the producer has reached the problem of primary and secondary education, so that the young farmer may be turned toward the study of the elements of the sciences that are to have his future attention. These combined efforts will result in making household words of what is now taught in college. Discussions of climates, soils, movements of moisture, plants and their improvement, animals and their antecedents, trees and their value, sanitation and its application, will all become familiar to the educated farmer's family.

NEED OF AGRICULTURAL COLLEGES

Suppose each of the gentlemen invited here to rejoice with the Michigan Agricultural College in its day of triumph was asked to tell you why we need agricultural colleges, basing his reasons on his observations while on the way here. I would say: The water level is too near the surface in a large percentage of our best soils; tile is not being laid deep enough—most plants send their roots down four or five feet seeking nutrition—the rootlets stop when they reach stagnant water, and only that depth of soil is at work for the farmer that lies above the water level. I see drains being laid eighteen to thirty inches deep that should go down to forty-eight inches at least, for reasons that every student in the graduating class can give, but which are evidently not known to farmers generally. As the science of soils becomes better understood, much of the draining of today and of the past will be done over again.

PASTURES

I have observed on my way here that decided improvement can be made in the pasture, which makes our most valuable crop and is our best recuperating agent. A majority of farmers have only one grass growing, suitable to the soil and climate.

Grasses are at their best at different seasons, then they rest for a time. They should supplement each other throughout the seasons. Many pastures have no legumes growing with the grasses, while all that are at home in the soil or climate should be under tribute. The office of the legume is well known to everybody here. The agricultural colleges should do demonstration work along such lines as pasturing and draining in all the states. Perhaps it should be done through other state agencies, in cooperation with the college faculties. We must not be content with research work that hits nothing, that is not applied to something, that helps no farmer or handler of crops. Leave all that to abstract science. We must make good and find pots of gold at the ends of all our rainbows.

PERCENTAGE OF FARMERS

Including the population of our island possessions, half of the people under our flag are producers from the soil. This half owe it to the other to prepare themselves for discharging the duties of citizenship with the highest intelligence. They are financially able to educate, as 72 per cent. of our exports—or nine hundred millions of dollars—is the price of farm products sold abroad annually, after supplying the home requirements. They have leisure and more facilities for reading and reflection than the other half of the people. Rural free delivery of mails, the telephone, the daily and farm papers, magazines, and other sources of information combine to form powerful adjuncts in the education of the farmer and his family. They are not organized as a class, and are not likely to be, but they are the nation's jury when questions of public policy are to be settled.

FINE MACHINERY

The returns from intelligent farming are becoming more satisfactory as the principles that govern production are better understood, affording better homes and home conveniences. Our farmers are experts in managing fine machinery, and the

crops grown by one man's efforts are astonishing. Commerce, manufacturing, mining, and carrying call help from the farm, and raise the price of labor. Production is hardly keeping step with growth of population, which results in higher prices for crops. Few of the immigrants coming to our country could do the work required on the farm. They fit into other industries more readily. Our agricultural colleges have broadened the minds and strengthened the arms of our farmers, and increased their efficiency. They have helped them into a class by themselves among farmers and have dignified their calling.

FARMERS IN REQUEST

The farmer is in request when the army and navy are to be recruited, when the city is to be reinforced, when the professions need quiet nerves and capacity for study and strain, when capital and labor take their dispute to the polls, when a public man is to be weighed, and when the nation settles public questions at the ballot box. As a people we are quite successful in governing in the country, the village, the town, and in the state outside of the large cities. The cities perplex, the country assures. The better education of country folk will gradually bring into counsel a safe element. The future of the republic depends upon the intelligence and moral rectitude of the citizen.

DEVELOPMENT OF ANIMALS

The development of domestic animals of all kinds for various uses on different soils in varying climates has hardly been begun in this country. We take the results of foreign breeders that dealt with conditions quite dissimilar from most that we find in this country. We must suit the animal to the pasture to reach the best results, and pastures vary. Each state or group of states will eventually learn by experience what animal will be most profitable. No other country on earth has as much capital invested in animals as we have. We look after their health and

the excellence of their products, but we have done little to improve them.

RURAL EDUCATION

Do not understand me that I would limit the education of rural families to material affairs—to the getting of "bread and butter," as some thoughtless men in prominent places term agricultural education. Man's responsibility to God and to his fellow-man is now being impressed upon young and old, in country and village and town, by the grandest organization of churches and Sabbath schools known to any people, where man's nobler nature is being stimulated and developed with infinite pains and at such expense as we are never likely to see devoted to material things. Highly enlightened society, as we have it, requires liberal incomes. Good farming is the basis of bank accounts in our country. Fill the pupil's stomach before you teach altruism, and see that the teacher has had beefsteak for breakfast. One of the most praiseworthy lines of work being done at our agricultural colleges is the training of young women in what pertains to themselves and others, including domestic economy, sanitation, nutrition, ventilation, and correct living, resulting in the American girl, unique, unequaled, perfect.

FOR MICHIGAN AND ITS UNIVERSITY

PRESIDENT JAMES BURRILL ANGELL

It is with pleasure that I come to bring the cordial salutations of the University of Michigan to the Agricultural College on this glad day. The relations between the two institutions have always been most friendly. The University has furnished two able presidents to the College, President Fiske, and President Willits, whose administrations form important chapters in your history. Not to speak of those younger teachers who have been trained in our halls, we remember as you do with pride the long and conspicuous services of our graduates, Dr. Kedzie and Dr. Beal. It would perhaps be difficult to name a teacher in any institution whose services have been more useful to Michigan than those of Dr. Kedzie; and Dr. Beal, we are happy to say, is still spared to continue his long and creditable career. Not a few of your graduates have to our great satisfaction come to us and won distinction in specialties which it was not your province to furnish.

As you well know, in the early 50's the University authorities were desirous that the College should become a member of the University household. But the coy maiden declined our suit, and so we have each led a life of single blessedness. We at the University have often been inclined to think that it would have been better for both of us if we had joined our fortunes at that time. But we are compelled to remember that it is unprofitable for rejected suitors to complain, especially when the coy maiden has prospered so well by herself in her own household.

Like all educational state institutions in the younger states this College has had her days of juvenile troubles—what I often compare to the mumps and measles and whooping cough in

children—but she has come well out of them all. Some forty years ago it fell to my lot to conduct the organization of the Agricultural College in Vermont in connection with the university. I found as our friends have sometimes found here that the most serious task was to convince the very class for whom these colleges are founded, namely, the farmers, that the institution had anything of value to offer to their children. The methods of farming were so intrenched by tradition and immemorial usage that any proposition to improve them by college training was hopelessly condemned as mere "book learning."

I think the chief agencies in winning favor for this and for all similar colleges have been farmers' institutes and the experiment stations. By the papers and discussions in the institutes it has been made clear to the most conservative farmer that he has something to learn from others, and by the researches at the stations it has been demonstrated that experiments conducted according to the most approved scientific methods can reveal how to make the raising of crops or the culture of fruit or the breeding of animals more profitable.

It has now become clear that even as no other industry is so important to us as the agricultural, so there is no industry to which science is able to make more valuable contributions. Furthermore, in studying this vexed problem, how to keep the bright boys on the farms, it has become apparent that one of the wisest things is to show them that, rightly understood, the most effective conduct of the farm furnishes an opportunity for the exercise of the highest intelligence, enlightened and inspired by the best type of theoretical and practical scientific training.

This college has been fortunate in commanding the services of teachers of a high order of merit, several of whom are known wherever agricultural education is appreciated. Indeed, some of them have been so conspicuous that they have been drafted into the service of other institutions that pay higher salaries than Michigan allows herself to offer. Moreover, a good number of

the graduates of this College have been gladly seized by other leading colleges for important positions in their faculties. I sometimes think that the institutions of higher education in Michigan are called to furnish more than their quota of brightest young men to colleges and universities in other states. But after all that is a useful function of these institutions, and we ought perhaps to feel proud that these graduates are so much in demand as teachers in all parts of our country.

Speaking for the University of Michigan I desire to congratulate this College most heartily that on its fiftieth birthday it finds itself guided by so competent a faculty with so efficient a president at the head; that it sees so many graduates by their lives and their influence reflecting honor upon the College and upon the state, and that its halls are filled by so large and so earnest a company of ingenuous young men and young women who are here training themselves for worthy and useful careers. As the demands upon the institution are increasing with the rapid growth of our population and with the more intelligent pursuit of agriculture, may the means not be wanting to it to make its future even more beneficent than has been this first half-century of its useful life.

ADDRESS FOR THE EAST

RUFUS WHITTAKER STIMSON

GREETING

He who on this occasion would honor Michigan Agricultural College would but honor himself, so high a position of dignity and usefulness has this institution attained among not only the sisterhood of the land-grant colleges, but also among all other educational institutions. The East gladly and proudly joins all quarters of our country in bringing greetings and congratulations on this happy occasion.

THE EAST

The so-called French market in the foreign quarter of New Orleans is a unique and most attractive spot. It consists of roofed but open-sided pavilions. In it may be purchased almost everything imaginable from cut glass and cut flowers, laces and embroidery, to meats and fish, fruit and vegetables. About six months ago I arose at daybreak to visit this market, and came at one corner of it upon a young creole who was tying up what he called vegetable bouquets. One knows a young onion when one sees it, and a young turnip. There were vegetables in those "bouquets," however, with which I was quite unfamiliar. After answering my inquiries, the young man finally turned on me with the question:

"Not to be too inquisitive, where do you come from?"

"Down east—New England," I answered.

"Oh," he exclaimed, "you don't live in the United States!"

"Yes," I said, "I do."

"Ah," he queried, "the United States governs your island?"

In speaking for the East I need hardly say to the people here assembled that I speak for a land and people comprised

within the United States, nor produce any argument to prove that the East has contributed a fair quota to the statesmanship of our country as well as to the classes of the governed.

THE OLD HOME

To many a man in the West, the East has for long been the old home—so many in the West have themselves migrated from the East, so many are the sons or daughters of eastern parents now settled in the newer country. When the institution I have the honor of serving issued the first booklet of its summer school for teachers, copies found their way here. It was most interesting to observe the instant response of western editors. Requests immediately began to be received for the use of halftones or for the purchase of photographs for printing, so suggestive of the old home to dwellers on the prairies were the illustrations of the booklet. Recently we came West to the great University of Illinois in our search for a man for the headship of an important department. The man we chose was attracted by the great company of distinguished scholars and scientific men in New England whose ranks he was invited to join. Our prosperity stirred him, for New England still has money to lend. He was also impressed by our thrifty farms, with their fertile, if sometimes stony, fields so closely adjacent to our magnificent markets. But what attracted him most of all, and what finally determined him to accept our offer, was the desire that his boys should have an opportunity for growing up among the brooks and the woods and the hills of New England. To move East would be to draw near the old home of both his wife and himself. Not unlike the tumult in the bosom of the foreigner, when he thinks of the "old country," are the feelings of affection in the breast of the westerner when he thinks of the old home in the East.

THE EAST AND EDUCATION

But it is not of the East in government, nor of the East as the old home, that I desire principally to speak. The chief

suggestions prompted by this occasion concern the place of the East in education.

If you were to visit the oldest college in our country, Harvard University, entering the main gate leading to University Hall you would find on your left old Harvard Hall, the tongue of whose belfry has called generation after generation of young men to lectures and to prayers. On your right you would find old Massachusetts Hall. The Old South Church, across the Charles in Boston, has been called the birthplace of American liberty. Faneuil Hall, Boston, has been called the cradle of liberty. In a very important sense old Massachusetts Hall might well be called the schoolhouse of liberty, so many succeeding classes of young men have been schooled within its walls in the history and principles of American freedom. Recently a niche has been built into the front of this old colonial building. When the class of 1883 was deciding who might most appropriately occupy that spot, they chose a man who has been called by one of our foremost scientific men "perhaps the best poet for the working man," James Russell Lowell. And when the sentiment to appear on the pedestal beneath the bronze bust was chosen, these were the words cut into the marble:

I, Freedom, Dwell with
Knowledge: I Abide
with Men by Culture
Trained and Fortified

On the outer gate, within a stone's throw of this new monument, one reads the ancient inscription that the primary object in the founding of Harvard College was to protect the children of the colonists from the legacy of "an illiterate ministry." From the first moment, American freedom has been joined to knowledge; men of the East have been trained and fortified by the cultivation of their higher and finer powers.

The half-century marked by our celebration today is one of most extraordinary interest to the student of the history of teaching. While eradication of ignorance and development of personal power have been constant aims, there have been marvelous changes in means and methods.

Fifty years ago there was one great slogan, "mental discipline." For 800 years one type of training had dominated the schools. The first college of our fathers was a survival of the Middle Ages, those twilight days one of the idiosyncrasies of which was a mystical reverence for the number seven. There were seven planets, seven metals, seven days in the week, "seven apertures in a man's head," seven cardinal virtues, seven deadly sins, seven sacraments. Growing out of a curious regard for elements of seven, studies had been divided into groups of three and four. Grammar, logic, and rhetoric had constituted the so-called *trivium;* arithmetic, geometry, astronomy, and music, had made up the so-called *quadrivium.* And the education of fifty years ago, not only in colleges, but also in preparatory schools—education claiming for its watchword, "mental discipline"—was very largely of the *trivium-quadrivium* type.

Already, however, there were signs and portents of change. The names of Darwin and Wallace, Huxley and Tyndall, Louis Agassiz and Asa Gray were commanding attention and respect. That is to say, powerful influences for change were at work, even within the schools and colleges themselves.

Perhaps of keenest interest to us who are met here today, however, are two influences which as the years have passed have exerted tremendous modifying power—both acting on established education, not from within the schools, but from the outside.

It is almost exactly fifty years ago that Mr. Herbert Spencer put into print, and challenged the public with, this question: "What knowledge is of most worth?" Answering for himself

he said: (1) That knowledge which has to do with self-preservation. The litle babe's eyes must be protected from the bright light lest they suffer harm. His first steps must be guided lest he fall. Berries good for food he must be taught to pick, not berries from bushes which poison. As the years advance every stage of life calls for special care lest the body suffer injury. All things which have to do directly with self-preservation are of the first importance. (2) That knowledge which has to do indirectly with self-preservation. Here Mr. Spencer referred to training which develops a man's power for earning a livelihood. All occupational knowledge is here included. The body must not only be protected from harm, it also must steadily be sustained and promoted in well-being. (3) That knowledge which has to do with parenthood, including all training necessary for the creation and well-being of family life. (4) That knowledge which is conducive to social or community welfare. (5) Finally, that knowledge which has to do with the graces and refinements of life, including literature, music—fine art in all forms.

Mr. Spencer's discussion was of great value owing to the broad scope of his treatment of education. It was unique for the order in which he stated the objects of knowledge and their relative worth. Before art and refinement he put social and community well-being. Before knowledge of history and politics he put knowledge of parental functions and obligations. Before all these he put that elemental knowledge which has to do with vocational efficiency. What gave his contribution its most searching pedagogic importance was his insistence on the relatively higher educational value of vocational knowledge for the average pupil in the average school, and no less for the average student in the average college. The school men could not escape his psychology nor his logic. The common people received his message gladly. Almost immediately his doctrine crossed to the continent, and there was translated into

French, German, Italian, Russian, Hungarian, Danish, and Dutch. Simultaneously it crossed the stormy Atlantic. Few men had have a profounder or farther-reaching influence.

In short, Mr. Spencer and those who espoused his views, or something like them, once for all protested against the domination of the former ideal in education, that mental discipline was the supreme thing. Knowledge, to be of worth, must not only train the mind; it must also furnish it for the immediate, pressing practical affairs of life.

Parallel with the scientific and philosophical treatment of education by Mr. Spencer came the movement which led to the establishment of the land-grant colleges. This also originated in round numbers just fifty years ago, and was a movement from outside the schools. It sprang from the soul of that wonderful farmer, blacksmith, village banker, and for many years influential member of Congress, the late Senator Justin S. Morrill of Vermont. Mr. Morrill contended that Congress and the legislatures of the several states should unite in furnishing a liberal and practical education. We should equip all young men and all young women for success in life—some for usefulness in the learned professions, others for success in the great basic, economic industries. The history of the development of these land-grant colleges I need not here trace, so familiar with it are we all, and so profoundly convinced are we of the educational wisdom and foresight of this grandmaster of public affairs. The practical program of Mr. Morrill, like the educational ideas of Mr. Spencer, met with opposition—prevailed in spite of it. The first Morrill bill was, as Dr. Abram Harris reminded us six years ago, vetoed by the gentleman-president, James Buchanan; the Morrill Act of 1862 was approved by the rail-splitter, Abraham Lincoln.

Happily, however, as the years have passed, the new education and the old have been joining hands. The old college has affected the new, and the new college has modified the old. The

training in the new college, Mr. Morrill said, must be liberal and practical. The education in the old college, the best leaders today are successfully maintaining, must be both practical and liberal. Probably no one man has exerted so powerful an influence toward the fusion of the best in the old education and the new, as, during the past quarter-century, has President Charles William Eliot. By his advocacy of the elective system, he has certainly vitalized the education of the old college no less profoundly than the training of the new college has been vitalized by the ideas of Mr. Spencer and Mr. Morrill.

Perhaps a personal reminiscence may be pardoned, since it indicates better than almost anything else could do the nature and spirit of our modern instruction. The brother of one of my college mates came to Cambridge on a visit. This brother, as a boy, could never be made to apply himself to books. Once out of the grip of the compulsory-attendance law, he left school and learned the plumber's trade. During this visit, he went with us to a lecture in a course in ethics called "Philosophy 3," presented by Professor George Herbert Palmer. It was not "Philosophy 1," an elementary treatment of the subject; nor yet "Philosophy 2." It was a decidedly advanced course in the midst of which he spent that hour. Knowing the family circumstances, I was exceedingly curious to learn what would be the effect on such a man's mind of modern Harvard, and at the close of the lecture I asked him how he liked it. His answer was almost startling:

"That," he said, "is what I call getting right down to brass tacks!"

Harvard is typical of the best, in her aims and in her methods. Individual freedom achieved by cultivation, education getting right down to the brass tacks of living—this is the spirit today of education in the East. There is the fullest warrant for the assertion that the best college education of our time is not so much preparation for life, as it is a cross-section of life.

GENTLEMEN OF THE OLD SCHOOL

A few days ago at the annual luncheon of the Mount Holyoke Alumnae Association of New York City, President Wooley said: "We are in danger of filling up the blessed margins of quiet." She referred to the over-strenuous activities of the modern college girl, especially in college dramatics and fraternities.

Kindred dangers are common to all our colleges, but the gravest, I believe, is the danger that our new college life may withhold from the world the best thing which the old college contributed to it. What that something was will be sufficiently connoted by the simple mention of the title, "gentlemen of the old school." Such citizens the old college created.

We are too often told today that all avenues into positions of prominence and usefulness bear on their gates one or the other of two legends, "Push" or "Pull." None of the merely Philistine elements of society can here be discussed. One very real peril, however, lurks in the path of our new education, and this, in conclusion, we must for a moment consider. I refer to the large amount of time demanded by laboratory and practice work in our highly technical courses, and the relatively limited amount of time given to that training and cultivation which frees the mind.

We are in danger that our strength may become our weakness. The educated man today, the man who would be freed by his college cultivation from the trammels of ignorance and incompetence, must be scrupulous to reserve for communion between his own soul and the best spirits of the world certain blessed margins of quiet. And we who are responsible for outlining courses of study should see to it that our institutions, east and west, north and south, turn out, not merely good farmers, good housekeepers, good mechanics, good engineers—good specialists in whatever department, whether of labor, superintendence, instruction, or research—but, at the same time, turn out grad-

uates who in our new day shall have a quality in their own living and in their influence on society kindred to that of the gentlemen of the old school, the splendid college men of a half-century ago.

FOR THE SOUTH

PRESIDENT HENRY CLAY WHITE

No portion of this great republic offers sincerer congratulations on this notable occasion than that for which I have the honor and the privilege to speak. That particular region which we call "the South" has abundant cause to recognize this celebration as commemorating a most important event in the history of this happiest and wealthiest of the nations of the earth. The people of the South in times past contributed their full share of patriotic energy to the establishment of the civic freedom which is the foundation of our national happiness, and, today, in larger relative proportions than elsewhere within our borders, they are devoting their intelligent endeavors to the winning of the great agricultural products which, at last, are the foundations of our national wealth. In this, the occupation of the large majority of our people, we, no less than our fellow-laborers elsewhere, have come to know that intellectual power and technical skill are now necessary factors in its efficient and economic conduct. It is interesting, but not remarkable, that agriculture, the earliest of the industrial arts, should be the latest to which systematized intellectual effort should be applied. All other arts are, essentially, creative; agriculture alone is, or may be, simply directive. Before the smelter, the manufacturer, the builder, or the engineer proceeds about his work he must have intelligent appreciation of many natural laws which determine the effectiveness of his finished product. But plants will grow and cattle breed with promise of sufficient fruits to satisfy man's needs, with need for little else than mere mechanical tending at his hands. Necessity, and not choice, has, therefore, determined the industrial fields in which man's intelligence has,

heretofore, been chiefly sharpened in the progress of his material civilization. Moreover, an understanding of the laws of nature must be embodied in the canon of the sciences before effective application of them may be made in the industrial arts. The processes of vegetable and animal production are largely biological, and biology is the youngest of the sciences. But, delayed as has necessarily been the really scientific practice of agriculture, its day has come at last, inciting to the highest order of intellectual endeavor and holding promise of marvelous fruits. Science, in appropriate form, now stands ready to serve the purposes of the husbandman and has demonstrated the ability so to do in abounding measure.

The congratulations offered for the South today spring alike from admiration and from gratitude. The records of the years immediately preceding the founding of this institution show that many earnest and patriotic men, in many of the states, touched with the spirit of scientific inquiry then practically newborn, and dimly conscious of the need for scientific training in education for and fruitful employment in the industry of agriculture, had striven blindly, in many diverse endeavors to relate properly the education of the children and the avocation of the people to the scientific spirit of the times. For the most part these endeavors were faulty in conception; in most they were inconsequent and vain. Provisions for teaching and applying the body of natural science then known for the improvement of agricultural practice had not, indeed, infrequently been made. In my own state, for instance—and I say it to her honor—three years before the founding of this College, a considerable donation (the largest, I believe, then of record) had been made by a private citizen toward the establishment of a chair of agricultural chemistry in the university of the state. Similar and sporadic endeavors—in what was, at least, a right direction—to quicken the art of the husbandman by an understanding of the nature with which he dealt were, however, far too few and inade-

quate for any marked impression upon the largest of all the industries.

It was reserved for the men of Michigan to be the first to conceive in wisdom and establish in strength an institution qualified in form and method to meet successfully the purpose of the founders and to serve triumphantly as the pioneer of a new reasonableness in education and of a great enlightenment in industry. Undeterred by the inertia of conservatism in the school and on the farm; unyielding to the clamors of radical experimenters in education and in industry; it has held fast consistently to the sane equilibrium of redecraft and handcraft in technical training and demonstrated its merits by its survival. To this victorious pioneer—remembering those who founded in wisdom and in faith, and those who guided in loyalty and zeal—to those who crown today, in prosperity abounding and confidence unshakable, this glad half-century of continuous, consistent, and successful endeavor, Michigan's fellow-patriots of the sister states of the South offer their congratulations in unstinted admiration.

To our admiration we add our gratitude. Though elder members of the family of states, we sisters of the South—through force of circumstance over which the present generation, at least, had no control—came into our own as full possessors of some features of the spirit of the age somewhat later in life than the young and lusty commonwealths to whose creation we had contributed. When, therefore, the belated time arrived when wisdom and necessity required a re-formation of our educational and industrial systems along other than the accustomed lines, we were fortunate that the experience gained in Michigan and the successful career of this institution pointed the way to immediate and wisest direction of certain of our efforts. The Michigan Agricultural College furnished us an admirable example by which to fashion our newly established institutions for industrial education, and in many instances, furnished us the

efficient teachers with which to man them in the experimental days. The statesmanship of Michigan met our commendation in yet another way, most agreeable to our traditional conservatism and our hereditary beliefs. It was here demonstrated that the new education and the newly inspired industry were designed to supplement, not to replace the old, for here in Michigan, along with the marvelous growth of this great technical college, went the equally marvelous growth of that great university dedicated more particularly to pure science and the liberal arts. The quickening of industry through education did not diminish but increased and contributed to the appreciation and the valuation of the humanities and culture. It has been here demonstrated that, whether under one roof or locally apart, these twin forces of liberal and technical education may work in harmony to the great and single end, the betterment of humanity. For what has here been done throughout these fifty years, and for what the doing of it has been to us, it is my great privilege to offer for the South today this inadequate expression of our admiration and our gratitude.

FOR THE WEST

PRESIDENT BENJAMIN IDE WHEELER

California sends greeting to Michigan. The orange makes obeisance to the yellow-tasseled corn. The valleys that mediate between the Sierras and the great ocean reach forth their hands to the prairies that hold the balance between the Lakes and the waters that seek the Gulf. The College of Agriculture at Berkeley salutes its elder brother who, as pioneer, opened for it the first paths and cut the brush. We learned both from your gropings and your findings, and we thank you for both. We know with you what it means to labor on the frontier, and we share with you the blessed western experience of trying and risking in a virgin field, whereby to irritate and teach the self-satisfied composure of the East.

The life of the nation has been continually freshened and its progress largely determined by the reaction upon it of men's experience on the frontier. This has mostly meant trouble, but trouble is the *sine qua non* of growth, and without pain there is no birth. After the thirteen Atlantic Coast states had become tolerably used to each other, and had settled down into fair composure, the occupation of the next row of states to the west produced Jackson, the new democracy, and various troubles and fusses. The admission of California in 1850 undid the Missouri Compromise which for thirty years had formed the basis of a truce between North and South. The settlement of Kansas and Nebraska in the 50's brought on the Nebraska Bill, which made the Civil War inevitable. The advance of agriculture into Kansas and Nebraska gave a succession of dry years in the early 90's their power to rend and wreck the old party of Jefferson. And now the extension of the frontier into the Pacific has made

the question of labor unions in politics joined with that of oriental labor a rich promise and foreboding of trouble for the days to come. It is the reaching fingers that get the burns, but it is the folded arms that compose to sleep.

In 1857 Michigan was in things cultural still the frontier, and the establishment here of agricultural education handed back a firebrand into the complacent usage of the East. To speak of torches tied to foxes' tails and sent into the standing grain of the Philistines is only an agricultural figure of speech, and incompetent to express the trouble and germs of trouble thereby infused into the entire circulatory system of all American education. The agricultural colleges and the state universities which in many states have included the colleges and have been infected with their spirit are a distinctive product of the West, and have embodied a fresh and vitally new idea of education and what it is all about. Centuries of separation from the life-need that begat it had made the mechanism of education largely a formal instrument of discipline. The significance of the agricultural college for the whole trend of American education was its naïve effrontery in frankly seeing for life-training a new connection with real life-use, and this significance exceeds, in service to the nation, even the weight of the benefits wrought for the tilling and the tiller of the soil.

Within the fifty years that have followed upon the beginning of your Michigan experiment, and under the quickening influence of your venture and others that succeeded it, the whole nation of teachers has been assuming a new conception of the whole meaning of their task. It is coming to them, not through a priori reasoning, for of that they did enough before, but through observance and practice of your frontier venture. They now seem to be learning that education inheres not in what you put into a man, or what you hang onto a man, nor yet in sterilizing him, or shaving him down to a standard shape; but in giving him, such as he is, and such as his life-activities may be, the

opportunity, in and through those activities, of living his life fully and effectively and abundantly. Such education proceeds upon the recognition that no hypertrophy of mind or body is as good as plain health, that plain health is the best medicine for all disease, and that the normal exercise of plain life is the straight path to plain health. Such education will therefore address itself perforce to the real doings and exercises of real life, and its definition will be: The guided practice of life, to the end that men may live.

If now, in terms of the higher learning, all this should prove to mean that applied science is after all the true science, what does it matter? For the deeds and worth of men, the social test is and always will be the final test, and the uses and needs of man in society will in the long run form the safest guide to the truth we should seek, and for that matter presumably to the truth we can hope to find.

So much from the side of the individual, but more from the side of the community; for all this means that education, which once made teaching, preaching, healing, and litigating the sacred four, is now laying its hand upon one after another of the activities of daily human life to dignify and uplift them, to relate them to reason and truth, and rescue them from sordid slavery to superstition, ignorance, and the rule of thumb, to the end that we shall call nothing, which involves a human use, common or unclean.

Small matter indeed, this school for farmer boys at Lansing in 1857; a weird undertaking, though, and audacious, not prescribed in the books, unapproved of the elders; but behold, the stone which the builders rejected, it has become the head of the corner!

FOR THE MIDDLE WEST[1]

PRESIDENT EDMUND JANES JAMES

Members and friends of the Michigan Agricultural College:

In looking over the marvelous advance in agricultural education during the last fifty years you can utter the proud boast which Vergil put into the mouth of the great Aeneas: "Of all this I have been a great part."

And this is an era not of progress in agricultural education alone, but in all other departments as well. For he who fancies that this great movement for agricultural and industrial education has affected only colleges of agriculture and the mechanic arts has greatly underestimated its real influence. It has touched and shaped, at more points than one, the training and equipment of even our oldest and best-known centers of learning. Even such strongholds of ancient tradition as Harvard and Yale are in many respects greatly different from what they would have been had it not been for the over-increasing strength of this tendency. It is in a large sense a part of a world-movement, bound up with the inevitable advance of the democratic spirit and increasing acceptance of democratic ideals.

Higher education for the farmer and the mechanic, if it ever becomes general, will mean a new era, not simply in education, not simply in agriculture and the mechanic arts, but in the world of politics and civilization. Despotism, tyranny, one-man power, absolutism, cannot long continue in a country in which the average man is in touch with the processes and ideals of higher education. The progress of democracy was bound to bring with it the demand for an ever-rising standard, not simply

[1] Read in the enforced absence of President James by Dean Eugene Davenport.

of technical, but of general education as well, for the farmer and mechanic, and the general spread of these ideals of higher education will inevitably advance the cause of democracy.

It is difficult, of course, to formulate a satisfactory philosophy of history. It never has been done, perhaps it can never be done until history is closed, when it would have but little interest for anybody. But certainly this great movement toward democracy which is characteristic of all countries, the enormous increase in wealth, the destruction of time and space involved in the general application of steam and electricity, the ever-widening scope of popular education, all these things have worked together, each upon the other, each supplementing and strengthening the other, to bring about that marvelous revolution which has made possible this development of agricultural and mechanical education on the one hand and which has itself been enormously furthered by this very education.

The demand for special, professional education, the training of the farmer and the mechanic, is one which few people trained in the old education ever comprehended or were ever able to estimate at its true value. It has not been very long, of course, in this country since there was little faith in the value of special education on anybody's part. It was the habit, even in the sphere of the so-called learned professions, to insist that the best way for a man to learn his business was to go into practical life as soon as possible, or at any rate get into touch with practical life as closely as possible from the very beginning. The ideal of the physician was to have the boy get into the doctor's office as soon as possible and clean his horses and wash his bottles as the only reasonable road to learning therapy or preparing oneself for the practice of medicine. Entrance into a lawyer's office and the copying of legal documents and sweeping out of the office and building fires in the winter time was recognized as the practical method of preparing for admission to the bar. For neither of these professions was college education considered any

real necessity, and even in the case of a clergyman who was expected in some denominations to be an educated man, it was not felt that any study of divinity was necessary beyond the possible acquisition of an elementary knowledge of the New Testament in Greek. How much less could the public be expected to insist upon a higher standard of special education for other classes. It is almost inconceivable to us so see how slow was the progress even in such a department as that of engineering education; remarkable to see how long it took before the general public was converted to the view that if a boy was looking forward to the practice of the engineering profession there were certain schools the completion of whose curriculum was a valuable element in the preparation for this work. Even such a distinguished and enlightened educator as President Eliot has yielded to this idea of professional and special education in various lines only with great reluctance and only as he has been compelled by the actual drift of circumstances. Twenty-five years ago I heard him say in a public address in regard to the preparation of teachers that the theory of Harvard College was that if a man had the requisite knowledge that was all that was necessary. He might then acquire the actual experience as a teacher and he would succeed or fail according to his natural bent; that there was nothing further than assistance in acquiring the knowledge which the university could do for the candidate for the teaching profession.

We do not realize until we stop to think about it, how completely that idea has passed away and how today the public is ready to accept the idea that school training is good as an element in the preparation for almost any calling which you can name. We see every day some new kind of school springing into existence which is intended to satisfy this demand for specific and special preparation.

Now this great movement for agricultural education, which found an expression in the organization of this institution and

which found a larger and wider expression a short time later in the passage of the famous Morrill act, profited by this changed attitude of the public on the one hand, and it stimulated and quickened the acceptance of this general principle on the other. Now development of agricultural education has, it seems to me, in certain directions, outrun and is today in advance of the development of education in other lines, and this movement for agriculture and the mechanic arts has benefited all our higher education in several distinct and definite ways.

In the first place, this grant from the federal government, seconded as it was by subsequent grants, strengthened enormously the schools which had been started in the field of agriculture and provided for the establishment of an entirely new set of schools in states where without this assistance a generation or even two or three might have passed away before anything had been done.

Some of our American states were not, financially speaking, able to establish these schools upon the requisite scale. The federal grant distributed as I believe wisely, on the basis not of population, but of the political unit, gave an impulse to the principle of state education, which has borne fruit in every direction. We see it perhaps in the most striking way in the institution which I represent here today, and where, upon the basis of this original land grant as a direct and immediate outcome of this thrusting, if you please, of federal contribution upon the state of Illinois, has been developed what will ultimately be one of the greatest centers of scientific investigation and practical training which the world has ever seen. I do not believe that the state of Illinois would have entered upon this work for another generation and perhaps not for two if it had not been for his grant on the part of the federal government. The University of the state of Maine represents a similar development to that of Illinois, only on a somewhat smaller scale and stretched through a somewhat longer period. I am sure that in the University of

Wisconsin and the University of Minnesota, though neither institution dated its origin from this grant, the era of active development and of vital activity dates from the utilization of this federal grant. Now this federal grant for the improvement of education in agriculture and the mechanic arts was followed up some years later by a remarkable grant for the establishment and development of agricultural experiment stations. Although these institutions have in some cases been established separately from the agricultural college, yet I cannot help feeling that their influence has been one of the most specific and peculiar and remarkable forces at work in the development of this whole branch of education, and I do not know that I can do anything better to set forth my idea, even at the risk of being a little personal, than to show how this idea has worked as a ferment in the institution which I represent more particularly. I take great pleasure in emphasizing this fact more especially because we happen to have had at a critical time at the head of our College of Agriculture a man who is an alumnus and a former member of the faculty of this institution, a man whom we delight to honor, a man for whose production, if you please, we are under great obligations to you, Dean Eugene Davenport.

The establishment of the agricultural experiment station was the most distinct recognition on the part of the government that if you are going to establish higher professional education in any line, it must be upon thoroughgoing scientific investigation as the fundamental substructure, so that every man engaged in the work of teaching in the College of Agriculture is also engaged in the work of investigation, and the man who is not doing something to quicken his subject, to add to the knowledge we have of it; who is not himself striving to improve, to increase our knowledge of the subject or improve the application of it, is likely to be an arid and unfruitful teacher. Now, I think it is not too much to say that in no branch of professional education today in this country anywhere is there such complete and full recog-

nition of this principle of the absolute necessity of original investigation to the highest type of professional education as in the field of agricultural training and agricultural education. Is not this a great achievement for the farmer? Has he not in this respect set an example to every other profession in this desire to develop the great interests, social, economic, and political, intrusted to his care in our social organization? So far as I know there has been no such development in the field of engineering experimentation and engineering investigation and research, although that forms the other side of the work of this great group of institutions. The federal government has not yet made an appropriation for the engineering experiment station as it has for the agricultural experiment station. It has not yet made an appropriation for the medical laboratory, which is the medical experiment station, or for the chemical laboratory, or for the legal seminary, which would represent the center of scientific investigation and research corresponding to the agricultural experiment station. Friends, this is a great achievement for the farmer. He has laid the education of this country under a lasting debt of obligation. This principle which applies to agriculture applies to engineering exactly, applies to medicine, applies to law, applies to education, and yet the farmer has been the only one to grasp the idea and to imbed it so solidly in the fundamental structure of agricultural education that there is no danger that we shall ever depart from it.

The reflex influence of this upon the other departments has already been striking and is destined to be more striking in the future. The legislature of Illinois at its last session appropriated the sum of $50,000 per annum for a graduate school. I think the most telling argument used in the support of this project before the legislature was the simple one that this represented to a certain extent in other lines what the agricultural experiment station represented in the field of agricultural education and research.

Another way in which this great movement has influenced education in a beneficial way is to be found not simply in the underlying thought which I have already described, which seems to me fundamental and vital, but in the liberality with which the farmer has taken up this work. We are spending in the state of Illinois today more upon the education of the farmer, using that term in a large sense including the agricultural experiment station, than upon the education of any other class. We have found it easier to get money, and we pay higher average salaries to the men in our College of Agriculture, of the same grade of training and experience, than we do the men of any of the other colleges, because the farmer has determined not simply to lay as scientific and broad a foundation as I have described it, but he is determined to have competent men to give this instruction, and he recognizes that competent men cannot be had unless adequate salaries be paid. Furthermore, he recognizes that even the competent man in this modern world of education and research cannot do the best work unless he has adequate equipment. So our agricultural department is today the best-equipped department in the University of Illinois.

The immediate and direct effect of all this is very marked in the willingness of the legislature to improve and enlarge the other departments of the university. I think it would have been a long time before the people of Illinois, under existing conditions, would have made reasonable appropriations for a law school, for example, if they had not already made them for the farmers' school. I am sure that we never should have obtained the magnificent outfit for our engineering college, if it had not been that the farmers' college had been adequately cared for on the same liberal scale. There is not a single department of our institution which has not benefited, in my opinion, indirectly, nay, directly, by this marvelous movement toward higher education and this youngest of all fields—a movement directed along the soundest and most helpful lines, a movement organized in a

certain way on a higher plane than education up to this time has been organized on a large scale in the country as a whole in any other department.

You will see why as a university president, interested in this department of agricultural education only in proportion to its importance as a part of the general scheme of education, I realized the significance and the value of the great movement of which this institution is such an able exponent. We at Illinois are under special obligations to you of the Michigan Agricultural College. Eugene Davenport, the great dean of our College of Agriculture, Herbert Mumford, the organizer of our department of animal husbandry, F. R. Crane of our farm mechanics department, and Professor Goodenough of our mechanical engineering department—all these and more do we owe to you, and we are pleased to acknowledge the debt.

I congratulate you upon your great past. I congratulate you upon your claim to having been the first in the field, upon your just claim that you were not only first but that you have made good, that you have maintained a position of leadership and that you propose to maintain it for the future. I congratulate you on the outlook of the future, and I only wish that the next fifty years of your life will bear out to the fullest extent the promise of the fifty that are past.