ADDRESSES

DEDICATION

AGRICULTURAL BUILDING

UNIVERSITY OF ILLINOIS

MAY 21, 1901

ADDRESSES

College of Agriculture, University of Illinois.

ADDRESSES

DEDICATION

AGRICULTURAL BUILDING

UNIVERSITY OF ILLINOIS

MAY 21, 1901

ADDRESS

S. Noble King, Bloomington.

Chairman of Legislative Committee of Illinois Farmers' Institute, 1899, officially representing the farmers of the State in the third campaign for an Agricultural Building.

Just fifty years ago, at the first farmers' convention held in Illinois, the seed was planted whose fruitage we behold in the beautiful building which we are now assembled to dedicate.

This convention was held at Granville, Putnam county, and was called, "To take into consideration such measures as might be deemed most expedient to further the interests of the agricultural community, and particularly to take steps toward the establishment of an Agricultural University." Among the resolutions introduced by Professor Jonathan B. Turner, of Jacksonville, and passed by the convention were the following:

Resolved, That we greatly rejoice in the degree of perfection to which our various institutions, for the education of our brethren engaged in professional, scientific, and literary pursuits, have already attained, and in the mental and moral elevation which those institutions have given them, and their consequent preparation and capacity for the great duties in the spheres of life in which they are engaged; and that we will aid, in all ways consistent, for the still greater perfection of such institutions.

Resolved, That as the representatives of the industrial classes, including all cultivators of the soil, artisans, mechanics, and merchants, we desire the same privileges and advantages for ourselves and our posterity in each of our several pursuits and callings as our professional brethren enjoy in theirs, and we admit that it is our own fault that we do not also enjoy them.

Resolved, That, in our opinion, the institutions originally and primarily designed to meet the wants of the professional classes as such, can not, in the nature of things, meet ours, no more than the institutes we desire to establish for ourselves meet theirs; therefore,

Resolved, That we take immediate measures for the establishment of a University in the State of Illinois, expressly to meet those felt wants of each and all the industrial classes of our state.

At the request of the convention Professor Turner submitted a carefully thought out plan for an Industrial University for the State of Illinois.

Limitation of time prevents giving this plan in full, but extracts from it will show that he had a clear and definite understanding of the needs of our people. He said, "What do the industrial classes want? How can that want be supplied?

"The first question may be answered in few words. They want, and they ought to have, the same facilities for understanding the true philosophy, the science, and the art of their several pursuits (their life business), and of efficiently applying existing knowledge thereto and widening its domain, which the professional classes have long enjoyed in their pursuits. Their first labor is, therefore, to supply a vacuum from fountains already full, and bring the living waters of knowledge within their reach. Their second is to help fill the fountains with still greater supplies. They desire to depress no institution, no class whatever; they only wish to elevate themselves and their pursuits to a position in society to which all men acknowledge they are justly entitled, and to which they also desire to aspire. How, then, can that want be supplied?

"In answering this question I shall endeavor to present, with all possible frankness and clearness, the outline of impressions and convictions that have been gradually deepening in my own mind, for the past twenty years, and let them pass for whatever the true friends of the cause may think them worth. I answer first negatively, that this want can not be supplied by any of the existing institutions for the professional classes, nor by any incidental appendage attached to them as a mere secondary department. We need a university for the industrial classes in each of the states, with their consequent subordinate institutes and high schools in each of the counties and towns. The object of these institutes should be to apply existing knowledge directly and efficiently to all practical pursuits and professions in life, and to extend the boundaries of our present knowledge in all possible practical directions."

Foreseeing the changes that would occur in agricultural methods, he went on to say:

"There should be connected with such an institution, in this state, a sufficient quantity of land of variable soils and aspect, for all its needful annual experiments and processes in the great interests of agriculture and horticulture. Buildings of appropriate size and construction for all its ordinary and

special uses; a complete philosophical, chemical, anatomical, and industrial apparatus; a general cabinet, embracing everything that relates to, illustrates, or facilitates any one of the industrial arts. To facilitate the increase and practical application and diffusion of knowledge, the professors should conduct, each in his own department, a continual series of annual experiments. Let the professors of physiology and entomology be ever abroad at the proper seasons, with the needful apparatus for seeing all things visible and invisible, and scrutinizing the latent causes of all those blights, blasts, rots, rusts, and mildews which so often destroy the choicest products of industry, and thereby impair health, wealth, and comfort of millions of our fellow-men. Let the professor of chemistry carefully analyze the various soils and products of the state, retain specimens, give instructions, and report on their various qualities, adaptations, and deficiencies. Let similar experiments be made in all other interests of agriculture and mechanic or chemical art. It is believed by many intelligent men that from one-third to one-half the annual products of this state are annually lost from ignorance on the above topics. And it can scarcely be doubted that in a few years the entire cost of the whole institution would be annually saved to the state in the above interests alone, aside from all its other benefits, intellectual, moral, social, and pecuniary."

Realizing the deficiency of available information on these subjects, he added: "I should have said, also, that a suitable industrial library should be at once procured, did not all the world know such a thing to be impossible, and that one of the first and most important duties of the professors of such institutions will be to begin to create, at this late hour, a proper practical literature and series of text books for the industrial classes.

"As regards the professors, they should, of course, not only be men of the most eminent, practical ability in their several departments, but their connection with the institution should be rendered so fixed and stable as to enable them to carry through such designs as they may form, or all the peculiar benefits of the system would be lost."

That he spoke as a prophet is shown by the following quotation: "As matters now are, the world has never adopted any

efficient means for the application and diffusion of even the practical knowledge which does exist. True, we have fairly got the primer, the spelling book, and the newspaper abroad in the world, and we think that we have done wonders; and so, comparatively, we have. But if this is a wonder, there are still not only wonders, but, to most minds, inconceivable miracles, from new and unknown worlds of light, soon to break forth upon the industrial mind of the world.

"Here, then, is a general though very incomplete outline of what such an institution should endeavor to become. Let the reader contemplate it as it will appear when generations have perfected it, in all its magnificence and glory; in its means of good to man, to all men of all classes; in its power to evolve and diffuse practical knowledge and skill, true taste, love of industry, and sound morality, not only through its apparatus, experiments, instruction, annual lectures, and reports, but through its thousands of graduates, in every pursuit of life, teaching and lecturing in all our towns and villages, and then let him seriously ask himself: Is not such an object worthy of at least an effort, and worthy of a state which God himself, in the very act of creation, designed to be the first agricultural and commercial state on the face of the globe?

"Who should set the world so glorious an example of educating their sons worthily of their heritage, their duty, and their destiny, if not the people of such a state? In our country we have no aristocracy, with the inalienable wealth of ages, and constant leisure and means to perform all manner of useful experiments for their own amusement; but we must create our nobility for this purpose, as we elect our rulers, from our own ranks, to aid and serve, not to domineer over and control us. And this done, we will not only beat England, and beat the world in yachts and locks and reapers, but in all else that contributes to the well being and true glory of man. I maintain that, if every farmer's and mechanic's son in this state could now visit such an institution but for a single day in the year, it would do him more good in arousing and directing the dormant energies of mind than all the cost incurred, and far more good than many a six months of professed study of things he never needs and never wants to know."

The effort of this convention resulted in the land grant act

of 1862, which provided—"That there should be granted to each state 30,000 acres of government land for every senator and representative to which it was entitled according to the census of 1860."

Among the conditions were the following:

"These colleges were *for the benefit of agriculture and the mechanic arts*. The object of it all was to promote the liberal and practical education of the industrial classes. And in 1868 Illinois established its college, under the name of the Illinois Industrial University."

Founding

While no difficulty was experienced in securing teachers for scientific and classical courses it was found almost impossible to find teachers or literature for the agricultural department. Principles of agricultural science, familiar now to every progressive farmer, were at that time undiscovered. Under these conditions the college of agriculture had a precarious existence.

After a struggle of twenty-one years relief came through an act of Congress—commonly called the Hatch Act—by which $15,000 was appropriated to each of the states to establish "Agricultural Experiment Stations," under the direction of the College of Agriculture.

A second measure of relief was found in another act of Congress by which an appropriation was made for the further endowment and support of the colleges of agriculture and mechanic arts. It was generally supposed that the agricultural college of Illinois was then on a basis that would make it a credit to the state, but when in February, 1898, the Illinois Farmers' Institute held its annual meeting at the University, to the surprise and disappointment of the farmers present it was found that the buildings belonging to the agricultural college consisted of three wooden barns. The necessity of having a department in our State University in which the sons of farmers, or those wishing to fit themselves for agricultural pursuits, could have the advantage of scientific instruction equal in every respect to the other departments was recognized, and in the following September, at a meeting of the Board of Directors of the Illinois Farmers' Institute, it was determined to ask the legislature for an appropriation by which the agricultural col-

lege could be placed on a basis fitting to the rank which this state holds in agricultural productions.

Accordingly a committee from the State Farmers' Institute asked the legislature for an appropriation of $150,000 for a building for the college of agriculture. This appropriation was readily granted, and we now have the pleasure of seeing the building ready for use. Through the united and persistent efforts of the farmers of Illinois we have, after thirty years, a college of agriculture which we confidently trust will be an honor to this great state. Notwithstanding the fact that the instructors have been handicapped by want of proper facilities and equipment, they have done excellent work, proof of which is found in the fitness of graduates to fill responsible positions; one, Mr. F. D. Gardner, lately having been appointed by the United States government to take charge of the agricultural interests in the island of Porto Rico.

But we must remember that the equipment and instruction are only *helps* to students. Success is dependent upon *personal* effort.

Already we have been gratified by honors won by students of this college at the inter-collegiate live stock judging contest at Chicago, and we unhesitatingly predict that the winning of the Spoor trophy will be only the beginning of the honors which shall be accorded to students of the Illinois College of Agriculture.

ADDRESS.

A. P. GROUT, Winchester.

Chairman of Committee from Illinois Agricultural Associations which drafted and secured the passage of the "Rankin Bill," for the "Further equipment of the College of Agriculture and the extension of the work of the Experiment Station."

This occasion marks the beginning of a new epoch in the history of agriculture in Illinois. It is the dawn of a new era of improvement and advancement in the opportunities and provisions made for a higher and better education for the people—for the tillers of the soil—that great army of workers who are developing the greatest of all our industries and who have heretofore been supposed to do business on a very limited amount of that which is so essential to success in almost every other calling.

Through the inspiration of this hour, we are encouraged to assert that the "world does move" and as an excuse for such rashness we have but to point to the magnificent new building—this day dedicated to agriculture—to the education of the boys and girls of Illinois in that which pertains to the farm and the business of farming.

That this great boon to agriculture—the greatest industry of Illinois—has been long delayed and many years over due, cannot be gainsaid, but the delay and anxiety incident to its safe arrival in port, with a goodly cargo in the shape of the finest building devoted to agriculture in the world, and a liberal appropriation for education and investigations, and a most able and efficient crew of workers and instructors, goes very far towards mitigating our complaints and gives us great hopes and encouragement for the future.

Today Illinois is to be congratulated on the advanced position it has taken with reference to agricultural education and proud may it be of the rank thus obtained.

Agriculture is the basis of all industry, and education is the foundation upon which the superstructure must be reared to success.

The eyes of the people have been opened and their under-

standing quickened. Their conception of the business of farming has been broadened and expanded and it now means something more than just digging, dropping and covering the seed and gathering the harvest.

The discovery has been made that farming is a business to be studied and learned and that it needs the trained mind as much as does any profession that places alphabetical endings to the names of graduates from literary or professional schools.

It has been aptly said that if John is sent to college to take a course in law, medicine or theology, and Tom must farm, that it is only fair and just to Tom that he be given a course in agriculture and that he receive the same training and have the same advantages for mental discipline and technical information along the line of his life work as his brother. Then will they not only be placed on an equality from a business standpoint but they will be social equals, for it is not mere work that separates men socially it is their mentality.

Farming in the past has been largely a matter of brawn but today the demand is for more brains. The situation was most aptly stated by Ex-Secretary of Agriculture, J. Sterling Morton when he said that "the farmer shall succeed more by his head than his hands." It is with pleasure that we can here proclaim the fact, and it is a matter of congratulation for the friends of agriculture everywhere, that Illinois has at last awakened to a realization of the situation—has met the demands of the hour, and has made this occasion and these exercises possible, and not only possible but an occasion for gratitude and pride to every farmer and every one interested in the great fundamental industry in the grandest agricultural State of the Union.

The awakening has come and Illinois has gone on record as favoring and seeking the highest and most advanced type of agriculture.

Less than three years ago Illinois stood far down on the list of States, as regards her college of agriculture—almost at the foot of the class—its instructors discouraged and disheartened—its friends and promoters disappointed and chagrined—its beneficiaries given over to ridicule and skepticism—its management doubtful as to the utility of its objects and uncertain and out of date as to its value and importance as an educational factor—a college in name only—sick unto death—a fit subject for resur-

rection and new life, when the people, the farmers—represented by the Illinois Farmers Institute, came to the rescue, took up the fight and carried on the struggle that has ended in the finest building devoted to agriculture in the world and an agricultural college with more students enrolled during the present year than in all of the previous years of its history combined.

Having put hand to the plow, for the advancement of agricultural education and the building up of a college and experiment station that shall be a credit and an honor, as well as a perpetual benefit to the State, there has been no turning back, but the past winter has witnessed the development of a new and heretofore unknown power for the promotion of public utility, in the concerted and harmonious action of the various agricultural organizations of the State. The Illinois Live Stock Breeders' Association--the Corn Growers—Corn Breeders and Grain Dealers Associations—The Illinois Farmers' Institute—the Horticultural Society--the Dairymen's and Sugar Beet Growers' Associations—representing the bone and sinews of the land--the wealth and taxpayers of the State—the solid substantial men—the veritable salt of the earth, united and determined in the promotion of such measures as shall benefit the people and add wealth to the State, is a power that cannot be resisted or turned down.

The times are propitious for the exercise of such a power. The people are sick at heart and nauseated with the babblings of would be politicians and statesmen and the constant parading of the great bugbear economy—not for economy's sake but for party's sake, when increased educational advantages and industrial knowledge and investigations for the benefit of the people are demanded.

The time was when the pioneer friends of agriculture entertained great hopes for the building up of a great industrial institution of learning in Illinois, in which instruction in agriculture and kindred topics should be made as prominent as the superior agricultural advantages of the State demanded.

They were met with the rebuff, that the people did not want it—that they were not asking for it and would not avail themselves of any advantages that might be offered, but above all the virtuous politicians and legislators were opposed to taxing the dear people to provide the necessary funds. Cheap reputation for economy, dearly bought at the price of ignorance, irrep-

arable loss of fertility, delayed development and wasted opportunities. Such are some of the conditions that led the various agricultural organizations of the State to unite upon one common plan and concert of action, and effort, to secure that long delayed recognition for our college of agriculture that shall place it in a position to creditably represent Illinois as an educational institution and successfully carry out the plans and fulfil the hopes of its founders.

In unity and numbers there is strength.

The individual farmer acting alone and for himself counts for very little in shaping public affairs, but as a member of an organized body of intelligent and thinking men, seeking only the best interests and welfare of all the people, and no private or personal gain, is in a position to exert a most powerful and salutary influence.

The agitation of one man or of any number of men not working in harmony can avail little, but when united with one common object and purpose, and backed by numbers, by intelligence, by fixedness of purpose, and by standing as men of affairs, the influence wielded is immense.

Agriculture has never been accorded the position or received the recognition from our State government that its magnitude and importance entitles it. Our farmers have been slow to assert their rights or push their claims.

Merit and justice have availed little or naught, against united and organized effort.

The development of the past few months with reference to the powerful influences that can be exerted for the shaping and controlling of public policy by organizations, even of farmers—hayseeds if you like—is no less important than the objects already accomplished. The latent powers and possibilities of the people have been revealed and the feasibility of their employment demonstrated.

Through the influence and by the assistance of the agricultural organizations, Illinois can today boast of one of the finest —best equipped and most thoroughly up-to-date agricultural colleges and experiment stations in the world, and if there is anything lacking to place them clearly in the lead they have only to make their wants known, for those organizations, that

are of the people and for the people, are enlisted in their service and behalf for all time to come.

The college of agriculture belongs to the people and more particularly to the farmers of Illinois. It is their special institution of learning and source of inspiration—the place where the future husbandmen are to be disciplined and grounded in the fundamental principles of their calling and fitted for their life work. It is the fountain from which may be derived the latest information in regard to all farm operations—the place for study and investigation of all farm problems and experiments.

The farmers of Illinois, through their various organizations have assumed the right to say what kind of an institution it shall be, and they have elected to say, that from this time on, it shall fitly represent the agricultural interests of Illinois, which means that it shall be second to no institution of the kind in the land.

I speak advisedly and know whereof I speak. I am aware that I am making the assertion in the presence of representatives of the best agricultural colleges in the United States, yet I have no hesitancy in saying to them, do your best—and we will go you one better.

It has taken time to educate the farmers of the State to a just appreciation of the value of an agricultural education and to remove from their minds the old prejudice against book farming or scientific farming or any kind of farming that savors of anything but brawn and muscle—tireless and never ending drudgery, and a reckless waste of soil fertility.

Again it has been the province and function of the agricultural organizations to bring the farmers and the agricultural college into closer communion and to a better understanding of the wants of the one and the benefits of the other.

Through the agency and by the efforts of these organizations and embodying the ideas and suggestions of Col. Chas. F. Mills as expressed in resolutions introduced by him at the last meeting of the Live Stock Breeders' Association, it has been provided by statute that the work of the Illinois Experiment Station shall be carried out on lines to be agreed upon by the Dean of the College of Agriculture and committees, representing the various branches of agriculture, to be selected by the

farmers themselves. Thus is the work of the college and station, and the wants of the farmer brought into close and intimate relationship.

The association of the leading farmers of the State and those who practice the highest type of agriculture, in organizations, for the purpose of leading the farmers of Illinois into better and more intelligent method—of inculcating new ideas—ideas that will set them to thinking and studying and which when applied will result in the most advanced agriculture, is an object worthy of the highest commendation.

The success already achieved and the good accomplished by the agricultural organizations of Illinois acting in perfect harmony and unanimity of purpose and for the promotion and advancement of agriculture, makes them the pioneers and leaders in this work. They have demonstrated the influence and power of the people—even the farmers, when organized for a purpose. They have set the pace for the good work all over the land. They have given an impetus to agriculture that nothing can check or stay. Illinois may have been a little slow in getting her machinery in motion, but she is now fully aroused as to her opportunities and possibilities.

With the best natural advantages of soil, climate, and locacation, with the best equipped college of agriculture in the world, backed by the most intelligent and progressive body of farmers in the entire country, thoroughly organized and keenly alive to every move that may effect their interests, Illinois may be expected to forge to the front rank in everything that goes to constitute her material well being and the happiness of her people.

ADDRESS

HON. HENRY M. DUNLAP, Savoy.

Member of the Senate from the thirtieth district and in charge of University appropriation bills when the appropriation for the Agricultural Building was secured.

The University of Illinois, known at that time as the Illinois Industrial University first opened its doors to students in 1868. In the fall of that year I, a green country boy of fifteen, entered the school in pursuit of an agricultural education. The school, and I believe I am safe in calling it simply a *school* even in the presence today of one who was at that time a member of its faculty, consisted of a dozen teachers and ninety students. The equipment was a few books on "How Crops Grow" and "Chemistry of Soils."

As I drove through the University Campus this morning on my way to this new and grand edifice erected for and to be consecrated to the uses of the College of Agriculture, I could not help but contrast the present with the past. Then, there was the one building which served as a dormitory to house the student body, a few recitation rooms, a room for Chapel exercises and a room for a library. No equipment for the chemical laboratory, or the engineering and mechanical departments.—The department of science was handsomely furnished with a pair of balances, a microscope of limited power, and a few rocks. How different this morning—the old building to which we have referred has disappeared and in its place is Illinois Field; at the South end of the old campus is Military Hall; as we proceed southward on Burrill Avenue to the right and left are the Electrical and Mechanical Engineering shops, the Engineering building proper, the Greenhouses, the President's house and the Natural History building, the Chemical building which has outlived its usefulness and is to be succeeded by a more modern one, the handsome Library building to the right and what is now known as the *old* Main Hall or building directly in our path: as we circle this latter to the right or left we come into full view of the Experiment Station buildings and barns, Astronomical

observatory and last but by no means least this grand structure which we are here today to dedicate to the uses of Illinois' agriculture. In addition to the buildings enumerated each of them is filled with apparatus and equipped for instruction and investigation second to none in the United States.

Now the student body is composed of 1700 students whose opportunity for education before entering the university is almost as far in advance of that of the students of the earlier days as are the advantages now offered by the University superior to those of that time. As my memory reverts to that olden time I recall that student body as an earnest, rather poorly clad, enthusiastic, lively and mischief-loving band of boys from the farm and village. Few were possessed of a high school education, and many minus even that of a good common school. But they were earnest intelligent and many have made their mark in life since the old college days. This demonstrates to my mind that if a student possesses capacity for an education it matters but little whether he is examined for entrance to the University or not. Previous opportunity has much to do with whether he can leap a pole set at a certain height on the field of mental gymnastics, but it has but little to do with his after-success in University studies. Many good students, eager for knowledge, are frightened away because of their inability to pass certain requirements of admission set forth in the catalog. Better do away with tests for admission and require more for graduation.

Domiciled in the old building which answered for all the departments of a great University, we went forth to study agriculture, "as she was taught." Daily the student body was assembled, counted off into squads of ten with a leader for each. There with professors to the right of us, professors to the left of us, instructors in front and rear of us, with hoes, rakes, wheelbarrows, baskets, spades, and all sorts of agricultural implements invented to tickle mother earth into bountiful harvests we went forth to study "that art which doth mend nature," for two hours each day. As a member of what the rest of the boys dubbed the "infant squad" I went out daily with the multitude and raked in such crumbs of practical agriculture as were scattered in my vicinity by the professors of ancient languages and literature, or mathematics, or the instructor in military

tactics, all of whom were expected to be equally expert in the science of agriculture as taught in those days. Since leaving the institution if I have made any success as a farmer it is due no doubt to the instruction in practical agriculture I received from the professor of literature and art of the best manner in which a hoe should be held in cutting down "Jimpson" weeds. If I have made a success in horticulture it is due to the instruction I received in picking and packing tomatoes on the site of where the Library Building now stands under the instruction of the professor of horticulture, one who from those primitive methods of instruction has advanced to a world-wide reputation as a bacteriologist and to the position of dean of the faculty. Our instruction in the class room consisted in having a chapter in, "How Crops Grow" read and commented upon by the professor of agriculture. Wearisome hours were spent in this unprofitable work in reading books whose titles I remember if I have forgotten their contents. Thus it was that agriculture was taught in "ye" olden time, and the wonder was that agricultural education did not prove popular with the student. We can now see that the fault was not with the wonderful truths of nature but with the means and crude methods of their presentation. All of this was but a beginning of a better system of instruction, a groping after better methods which have since taken the place of this mistaken and immature beginning. All of this is not offered in criticism, but as an illustration of what has been accomplished in the past third of a century in the development of agricultural education. Of the instructors of those days be it said that "they did the best they could," and the student of that day got the best there was at the time. Some of those instructors have since risen to prominence and occupy foremost positions of honor in the University—and have reputations in their professions that are world-wide.

Learning and Labor was the watchword then as now and from this humble beginning has come a system of instruction in the class room and field laboratory that has caused the building of this immense structure for carrying forward the cause of agricultural education. We welcome the dawn of a better day along this line, more intelligent methods, for investigation and instruction mean better methods in the treatment of our soils, our crops, and our live stock. It means a better home for the farmer, a

higher standing in the social and economic life of the farmer in his association with people engaged in other pursuits. The intelligent farmer of the future will occupy such position as he carves out for himself. The opportunity is his. If he respects himself and his calling others will respect him and it. Today we have reached a point where we can see that agriculture at the University of Illinois is what we make it. If it is popular it will be because the instruction is of the best, the instructors enthusiastic in their work and the methods of such a nature as shall interest and instruct intelligent students who "want to know" and want to know by the quickest and best route. From one or two text books you now have many, from one or two instructors you now count them by the dozen, from one room shared with other interests you have developed into an immense building, all your own, equipped with the best apparatus for instruction in the land. Agricultural education at the University of Illinois has left the past behind and must now press forward to the future. The methods of today while perfect as compared to early beginnings will be cast aside and regarded as obsolete in the near future. We cannot stand still, we must press forward for if we do not we go backward. The great agricultural interests of Illinois are watching you. New buildings, better equipments, improved facilities bring new responsibilities. While we have been satisfied in the past with moderate results, or none at all, we now expect great things of you. You must measure up to a new standard and we have faith that you will not be found wanting. If satisfactory results come from money wisely expended there is no doubt but what Illinois will take care of her own. Let it be remembered that there is much truth in the saying from the book of books, "To those that have shall be given and from those who have not shall be taken away." If you succeed, much will be added, if you fail, much that you have will be taken away.

Agricultural development in the past twenty-five years has come largely through wise legislation. The establishment by the General Government of State Universities and State Experiment Stations throughout the length and breadth of the land and the equipment, by the State, of buildings, apparatus, and means of instruction has done more in the past twenty-five years to bring the science of agriculture to its proper position than is

generally known. Earnest men and women, Stock Breeders' Associations, Dairymen's Associations, Boards of Agriculture, Horticultural Societies, Farmers' Institutes, Poultry Breeders' Associations and kindred organizations, are in a great measure due to appropriations made by the legislature of this and other States. All of these organizations made strong by State aid have contributed much in securing proper recognition for agriculture at the hands of the General Assembly of this State in the erection and equipment of this grand edifice.

To those in charge of this great work of agricultural education I wish to extend hearty congratulations, your success in the future will depend upon whether you keep close to the people interested—to what they need and require—to those things the knowledge of which will make them better farmers and better citizens—to those things that are practical as well as educational. If you will but carry out in good faith the motto of this great University and link "Learning and Labor" in very truth, you will meet our expectations. Dignify labor with learning and make it intelligent and self-respecting and you will bring about a new era in agriculture which will redound to the good of the state and of the people.

ADDRESS

L. H. Kerrick, Bloomington.

Member Illinois Live Stock Breeders' Association and President Illinois Cattle Feeders' Association.

Mr. President, Ladies and Gentlemen: If I should say that agriculture is the first—the greatest—the most honorable business of the world, I would only be saying again what the best and wisest men of every age have said before.

But a great number of people do not so regard agriculture; they are prone to look upon it as a useful, possibly as a necessary business, albeit a very simple one suited to the ability and uncultivated tastes of plain people.

Almost any other vocation they esteem more honorable, and preferable to tilling the ground and tending the herd.

This mistaken attitude toward agriculture is not universal, but it has been and is still far too general.

In the common mind agriculture is the inferior—other callings the superior. The largest case in all history of "cart before the horse" is that one wherein so great a part of mankind have so persistently put agriculture in the rear—in the less honorable place, while other vocations are put to the front in the position of honor.

In the whole hook-up of our civilization this "wrong end to" position of things is strongly in evidence.

This common under-estimation of agriculture, and the common aversion or distaste for agricultural pursuits, and the general trend of people and institutions away from the farm and farm life, toward professional life or any kind of life but farm life, have been long noted and deplored by observing and right-thinking men.

They have profoundly affected all social, political and economic relations and conditions. They have upset the proper balance of city and rural population. There are too few people on the farms, too many in the cities. There are not enough people on the farm to do the work well, while in the city there

are two or three times as many as are needed to do the work there. There is boundless room and unlimited living employment in the country, while there is crowding and poverty and strife and strikes in the city, for lack of living employment.

A few years ago there was a great strike in Chicago. I do not now remember just what precipitated it--no matter, at bottom the cause of all strikes is too many people needing the same job. During this particular strike the storm for a while centered about some grain elevators. Thousands of men threatened to pull down or break in the elevators and help themselves to the wheat. At that time those elevators were filled with the cheapest wheat that was ever raised in the world; but there were so many people in Chicago who had no business there—no living business, that they could not all earn enough to buy enough to eat of the cheapest bread the world ever had.

This pulling away from the farms could not affect every other condition and institution and leave our greatest institution, our schools, unaffected.

And what a country of schools is this! Who can count our schools? They are like the stars which no man can number.

But our schools, big, little and medium, public and private, have been dominated in their organization and in their teaching by this same anything-but-farming spirit.

They have taught our farmers' boys and girls about everything under the sun except those very things they need and must know to make their work and business attractive, satisfying, successful.

The attitude of the schools toward agriculture has been something like this:—Anybody can farm. You do not have to learn to farm. You just know it without having to learn. There is not much to learn about it anyway. There is no science, no art about farming. You do not go to school to learn how to farm better; you do not have to. You go to school to learn how to do something else, so you may not have to farm. Only those people who can not do something else, work at farming. Strange! All this is passing strange, since if we but think for a moment we know that had it not been for the farming which went before them, never a book would have been written, never a school house built on the earth.

Agriculture is the science of science, the art of arts.

When every other art and science shall have been thought and wrought out to its utmost limit, the science and practice of agriculture will still present boundless unexplored fields for work and research and reward, wherein every faculty of mind and body with which man is endowed may find the fullest, the most satisfying, the most inspiring exercise and employment.

Do not misunderstand me, I say nothing against our schools. They are good. They do their work well. That such a system of public and private schools as ours, with its mighty teaching force and its vast material equipment should have been evolved in so short a period of time, is a matter to excite our wonder and compel our highest admiration.

For zeal, for self-sacrifice, for untiring labors in behalf of our youth, that they become intelligent worthy men and women and patriotic citizens, I say of our whole great army of teachers, from the presidents of our universities and colleges to the humbler but not less useful district school teachers, there live no better, nobler, more helpful men and women than they.

But just as earnestly I say that our schools and our school teachers have been nearly all looking one way, and that way has been away from the farm. Is it anybody's fault? No; it is everybody's fault. It is the colossal fault of our time and our generation, to underestimate the dignity, the beauty, the profit, and the honor of farming and farm life.

This wrong attitude of our schools toward agriculture has of course tended strongly to draw young people from farm life to professional life.

The schools have been turning out too many doctors, too many lawyers, too many professors. There is no need for them all, but they have been taken too often from the farm where there is need of them. The professors have rather the best of it because they can go on helping to turn out more doctors and more lawyers and more professors.

To say the so-called learned professions are full, pressed down and running over, is only hinting at their actual condition.

Something over a year ago, I read in a Chicago paper an account of graduating exercises which took place at the Chicago University. Let me quote you verbatim a part of President Harper's address to the graduates, as it was reported.

"You who are now entering the world will find that poverty will be the

strongest opponent to overcome. You who are entering life as lawyers need only look at the papers today to find that the average lawyer does not earn his salt. Those who will become physicians will find that their only companion for a few years to come will be the wolf at the door; while those who go forth to teach, need only to witness the struggles of the school teachers in this city. The school board is beset with howls and wails for an increase of salaries."

This in that great and rich and growing metropolis, Chicago, a city affording as great or greater and more opportunities for men and women trained for the learned professions than any other city; yet even there the prospect held out to those graduates by the president was years of starvation. If some other fellows had not the strength to fast as long as these graduates, then they might eventually get the other fellows places.

The first duty of an educated able bodied man is to make his own living.

The man who is not in some way, at some point doing an amount of the world's necessary work equal to that required for the support of one man, is a burden on society.

Do any of you fear that President Draper or Dean Davenport will ever say to a class graduating from this agricultural college: Gentlemen:—You are going out to the farms. You have not mastered the whole of agricultural science, that will not be done by any living or yet to live, but you have done your work well in the college and you are well equipped for your business; however, I feel obliged to say to you that poverty will be the strongest opponent you will have to overcome. The average farmer is not earning his salt—that is, for his personal consumption mind you, let alone the cattle and horse critters. The only companion you will have for some years to come will be the wolf at the door.

I just as much expect to read of such a speech having been made here, to a class graduating from this agricultural college, as I expect to find myself tomorrow morning, sitting on some distant star reading that last night the cables of gravitation parted down here and the whole planetary outfit fell to everlasting smash-up.

Thirty-four years ago there was organized here an Industrial University. Not a university of the general sort but of another sort, a new kind of university. A university differing in its organization—differing in its leading studies and in its

aims and purposes from those already established in many parts of the country. The courses of study in the colleges and universities existing when this new university was organized were adapted only to fit men for the so-called learned professions, law, medicine, etc. In this new university the leading studies were those related to agriculture and the mechanic arts. Whereas the other universities tended to withdraw their students from the pursuits of industry, this new university would aim by linking learning more closely to labor and by bringing the light of science more fully to the aid of the productive arts, to enamor the sons and daughters of the farmer and the artisan with their pursuits. There is no law in Illinois establishing a university of the general or older sort. There never has been such a law. There is a law establishing an industrial university. If this university has any legal existence or standing, it is as an industrial university. By the intention of its founders, by its organic law, by its lawfully authorized courses of study, by the will of the people of Illinois it is an industrial university, not less, not more.

In his address delivered on the occasion of the inauguration of the Illinois Industrial University—that great man, Dr. Newton Bateman said :

"What then is the grand distinguishing feature, purpose, hope of this university? In my view it is to form a closer alliance between labor and learning—between science and the manual arts, between man and nature, between the human soul and God, as seen and revealed through His works.

"It is to endeavor so to wed the intellect and hearts of the students we educate, to the matchless attractions of rural and industrial life, that they will with their whole soul prefer and choose that life and consecrate to it the results of skill and power that may here be gained. These I hold to be the aims of this university. And we hope to attain them, not by a less expensive and thorough course of instruction than is given in other universities, but by a somewhat different course and more especially by emphasizing from the beginning to the end those studies and sciences which look away from the literary and professional life and toward the pursuits of the agriculturist and the artisan."

Congress in 1862 made a liberal grant of land scrip to each State of the Union for the endowment, support and maintenance of at least one college in the several States accepting the benefits of the grant, whose leading object should be to teach branches of learning as related to agriculture and the mechanic arts, without excluding other scientific and classical studies and

including military tactics, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.

The act of congress was the origin of our university. The legislature of Illinois by an act providing for the organization and maintenance of the Illinois Industrial University re-enacted the act of congress in identical words.

The State of Illinois might have organized and provided for the maintenance of a university of the established or general sort, having colleges of law, medicine, etc., including a college of agriculture and mechanic arts, but she did not, and has not. The perfectly obvious intent of the legislature was to establish a peculiar university, contra-distinguished from that other kind in that its leading studies should relate to agriculture and the mechanic arts, other classical and scientific studies being permissible when and to the extent that they might subserve the single great purpose, namely, the thorough and liberal and complete education of the farmer and the artisan; this end and purpose being accomplished, the whole purpose of the University is accomplished. It was deemed by the founders that there were enough of the universities of the other kind, and that more were not needed. If no need in '67 of establishing a university of the general sort, what need now can there be when within the borders of our state there is building by private beneficence, without charge to any tax payer, what will with scarcely a doubt become the most completely equipped and the most comprehensive in its round of learning and the most richly endowed university in the world.

About three years ago, when this University had been here more than thirty years; when in all there had been expended upon it $4,000,000 or $5,000,000, the Illinois Farmers' Institute appointed a committee to visit the University and see how it was faring with agriculture here.

The committee made its visit and investigation and reported that they found an agricultural plant worth about $7,000—$7,000! Shades of the founders! Excuse us farmers for what we could not help and forgive us for what we could have helped but did not.

But, my friends, I doubt very much if Turner and Bateman and Gregory and their co-laborers would have any harsh words

for us if they could communicate with us. They saw how the educational wind was blowing from the farm to the town, from agricultural to professional life, before they went. It was only a breeze in their day, but maybe from their spirit homes they have seen that breeze increase to a blizzard, sweeping things toward the town and toward the occupations of the town, as that other kind of blizzard sweeps the snow of the plain upon the hamlet in its path.

I am ready to believe that those good men if they thought we could hear them, instead of chiding us, would say, boys, you "did nobly" even to hold down your little cow barns in such a gust.

I have not much to say about the $7,000 plant. When the farmers heard about it, a movement to right things, general, intelligent, determined, irresistible, was begun. This great agricultural building is one of the fruits of that movement. The generous appropriation by the last legislature for better equipment of the plant, and for other purposes of the college is another fruit of that movement. There will be other, perennial crops of good fruit which that movement will bear.

Farmers are conservative; they are not easily moved individually and are harder to move en masse, but when they move other things will be moved that need moving. If the University ship has been turned from its right course, little or much, or if it has been turned right about and headed the wrong way, the farmers will surely swing her round again and send her on her appointed way. They know her mission; it was clearly mapped out from the beginning, and knowing it they will see to it that she have a chance to accomplish that mission.

Lest some might think otherwise, let me say I have not spoken a word in any spirit of complaining—not a word intended as an arraignment of anybody for what may have been done or left undone in or concerning this University.

There has been lack of information and consequent misunderstanding and disagreement among the people as to the true and lawful character, scope and purpose of our University. I have deemed it my right, perhaps my duty as a citizen and farmer, to set forth here those purposes.

And let no one infer from any utterance of mine that I take an unfavorable or gloomy view of matters and events in general.

I believe that the preponderance of human intention and human effort is toward the good. I believe that the prevailing course and tendency of human institutions is toward the better. They may travel sometimes obliquely—zigzag—wrong end foremost—up side down—or even at times seem to go backwards, but altogether they get onward and upward.

Good things—better things—the best things come not at once, but by evolution, step by step from imperfection to excellence.

Agriculture is the peculiar science; in its beginnings simple indeed—simplest of all; in its higher development we shall see it growing complex, comprehensive, drawing to its aid, assimilating and rendering subservient all sciences and becoming in its fullest development the master science.

Since the children of men however simple and unlearned must live and maintain themselves on the earth, and since they could live only upon the products of the tilled field, it was necessary that they be able to provide the means of sustaining life by the simplest methods of field culture.

That kind providence which cares for all living things, so ordered his laws that the field by rude and simple means could be made to yield the necessities of life.

But since we live by agriculture, we have been wont to look upon it simply as a means of living. He who finds in his vocation only a means of living, becomes a joyless drudge and his vocation stagnant drudgery.

May we not see in this the reason why myriads have tired of farming and have turned away from the farm to other pursuits and professions? And in this turning away of so many from the farm to other pursuits and professions, may we not find and see the cause of that marvelous development of other arts and sciences which so distinguishes our time? I do not doubt it. The excessive interest in these, the excessive number engaged in them, and the excess of energy expended upon them, could have no other result but to push their development to an amazing degree of perfection.

But now on every hand we see the signs of another turning, a returning to agricultural pursuits. Other sciences and other arts are ripe now to serve their highest purpose in the development of the master science, agriculture. The professions are

full—crowded as we have seen. They no longer pay, to put it short, but that is not all nor most important; men and women conscious of power to aid in the world's needed work and inspired by sublime desire and ambition to add by their labors something to the world's comfort, happiness and betterment, disdain to waste their trained powers where not needed. If place, success and competence are to be gained for themselves, in professional life, it must too often come by displacing and defeating others.

With the conditions of the unskilled laborer and the artisan in the city we are familiar. Living employment is uncertain; there are too many. The mechanic, for self preservation is compelled to limit the number of apprentices in his craft, even to the exclusion of his own son. Professional men are hesitating to bring up their sons to their own calling. How is it with trade and commerce? There is war between individuals and cöperation for trade, of which there is not enough to go around; and nations that once fought for liberty and honor are now ready to fight for trade.

The way out of it all is to the farm. To the farm is the place to go now, and to the farm is the thing to do. People see it; not only plain men now, but schooled, educated, learned men see it and the more they know the better they see it. Necessity may be the ointment that is opening their eyes, but they see it all the same. To my young friends who question me as to the most promising field for effort now, I answer without hesitation, the corn field.

We are about to return—we are returning to agriculture. We are taking another step in the evolution of better things for mankind.

To the half employed, to the disappointed, discontented, striving, struggling millions in other over crowded pursuits, agriculture says, come unto me and I will give you employment; I will give you food and clothing; I will give you homes; I will give you contentment and honor; I will give you peace.

But we are returning to a new agriculture, an agriculture lighted and glorified by science. To the new agriculture the agricultural college and experiment station will be the main gateway.

The Agricultural College and Experiment Station is one of the wisest conceptions of this or of any age.

It should not be regarded as merely a help to agriculture or an aid, however valuable; such an estimate falls far short of the truth. It is a necessary, an indispensable agent in the development of a better and more profitable and more engaging agriculture. The farmer can not experiment profitably. Agricultural experiments for the most part require some years for their completion. There must be parallel experiments under varying conditions. Exact records must be preserved. Expensive apparatus is often required. I need not recount the obstacles to successful experimentation by individual farmers; they are numerous and practically insurmountable.

If for no other reason, a college or association of some kind is necessary, because experiments if left dependent upon the life, health and inclination of private persons, would almost certainly fail.

Although comparatively new institutions, colleges of agriculture have abundantly proved their value.

There is but one opinion among those acquainted with their work; they must be maintained. Any farmer and all farmers who will watch the work done in these institutions and who will apply to their own work what may be applicable, will soon be their enthusiastic friends.

A reasonable amount of public money judiciously expended on our agriculture college will return an hundred fold to the common good.

A wise public policy will surely give liberal support to the agricultural college and experiment station.

We are met here to dedicate this great building, the largest agricultural college building, I believe, in the world. It is consistent--we are the greatest agricultural community, and this building stands in the center of the largest tract of the most productive land comprised in any single State. It will be well equipped. We have here a corps of instructors, many of them already renowned for eminent services to agriculture, all are learned and skillful in the art, and devoted to it.

To the great art—the greatest, we dedicate this splendid building.

ADDRESS

THOMAS J. BURRILL, PH. D.,, LL. D., University.
Vice-President University of Illinois and Dean of the General Faculty.

SOME EARLY INSIDE HISTORY AND ITS LESSONS

Agricultural education and the direct application of science to the affairs of practical agriculture have come up in our country through great tribulations. A word now at the formal dedication of these magnificent buildings, erected in the interests of agricultural arts and sciences, and for the educational benefit of people having to do with these developing departments of skill and learning,—a word uttered here under the stimulating conditions and with this augury of marvelous things to come,—a word by way of contrast upon the early struggles connected with and inside of our own University, can not be without its lessons upon this occasion. It is quite impossible to enter here upon a history of agriculture in the University of Illinois, but attention may be solicited to a few facts in that history.

In the light of the discussions which led to the donation of land scrip by Congress, and the founding of the institution by the State, any one may clearly read in the wording of the acts by which these measures were accomplished, the intent and purpose to make agriculture and the matters inherently pertaining thereto, the leading subjects of instruction and investigation in the new institutions. Mr. Morrill himself, whether as representative or senator, rarely spoke of anything else. In all his congressional speeches he but once emphasized the importance of mechanics and the need of aid in mechanical pursuits. He did dwell at length upon the necessity of special education for rural people and upon the crying need of better methods in farm management. So the land-grant colleges were most frequently spoken of as agricultural colleges. In Illinois, previous to the passage of the founding act by the state legislature, hardly any other name was in use, and afterward for some years the term agricultural college was more commonly heard as applied to this institution, as it then existed, than was the legal

title,—the Illinois Industrial University. The people of Champaign county were the earliest, and, as the result proved, the most insistent bidders to secure the location of the new state institution, but they thought of it and popularly called it the agricultural college. It is certainly true that a few persons and those who were most influential in determining the name and character of that which they instituted took a wider outlook and a better vision of the development which was sure to ensue. With them the name University was not a misapplication, and that which they understood by the modifying term "industrial" was in proper keeping with the best interpretation of the entire movement—a movement which accounts in a considerable part for the splendid achievements of the later years. But when the trustees first met it was not strange that many, no doubt a majority of them, still thought of the charge newly placed under their care as an agricultural college. Here again the influence of a few dominating minds, and notably among them that of the first Regent, or President, is to be perceived. The minority, as determined by count, extended the plans for the new organization much beyond those which the majority would have adopted. No one, however, thought of displacing from the head and front of the list the agricultural interests. All were in hearty agreement in giving these chief place in the new institution, to be followed by others as possibilities permitted. In the first scheme of organization fifteen professorships were recommended, and the first one in the list, as it was adopted, is that of practical and theoretical agriculture, followed in order by those of horticulture, analytical and practical mechanics, military tactics and engineering, civil engineering, etc. In this list the professorship of ancient languages takes the thirteenth place, and that of mental and moral philosophy the fifteenth place.

When appointments came to be considered it was natural, under the circumstances just mentioned, that some one should be first looked for to fill the professorship of agriculture. That this appointment, together with that for horticulture, were not made before others, was not the fault of those upon whom devolved the responsibility of securing a faculty. Three men for other departments were elected before a selection was made for the place constantly first in consideration and deemed by all

to be first in importance. A search for a man proved futile. It was currently said at the time that there was but one professor of agriculture, and that there was no other man fit for such professorship in America. However, something must be done. All felt that action of some kind should not be delayed, and on the very day of the inaugural exercises, when the doors of the institution were first officially thrown open, Willard F. Bliss, of Nokomis, Illinois, was elected professor of agriculture. At the time, he was the owner and manager of a large farm near the town just named; he was a graduate of Yale College, as that famous American center of learning was then entitled; he had traveled abroad, and had pretty well in command the Latin, Greek, and French languages.

There were at the time in the country some men famed for their attainments in science, but not one of these had been trained in his specialty in an educational institution, though certain of their number had gained a start through the meager instruction then offered at the principal seats of higher education in this country and abroad. Darwin's Origin of Species had been published almost a decade before the time now spoken of, but outside of theology and the realm of theoretical science, little attention had been paid to the doctrines therein advanced. It certainly would not have been considered a matter to his credit if a candidate for a professorship in agriculture was known to have accepted these doctrines as a basis for his investigations and for his instruction. Indeed almost the only science thought to be of real worth to a man in the position named was chemistry. To his Latin and Greek and French languages and to his practical acquaintance with rural affairs the world of knowledge designated chemistry would have been considered a valuable addition. Baron von Liebig was at the splendid pinnacle of his well-earned fame, and the renown of his epoch-making researches was as great in America as in Europe. Had Mr. Bliss or any one else proposed to qualify himself for teaching the scientific agriculture he no doubt would have endeavored to gain first a sitting at the feet of this highly revered master, tho ugh we now know he would have learned facts which were not facts, and would have had cause subsequently to unlearn a not inconsiderable amount of the coveted information so gained.

Professor Bliss took up the task assigned him with much

hesitation. He knew the situation well enough to appreciate the difficulties in the way. He was by no means one of those who dared to tread where angels feared to go. Actual contact with the matters involved did not decrease the recognition of obstacles. The affairs of his own farm did not prosper in his absence, and at the end of his first year he considered it necessary to return to the less exacting if humbler duties at his own home, whence he has not since been tempted away.

On November 27, 1867, Jonathan Periam was appointed head farmer, the first regular employe in the earliest instituted office of the University. He served in this capacity until March, 1869. During this time there arose some discussion as to the scope of his duties, resulting in adding to his title that of superintendent of practical agriculture, and he was told to report directly to the committee on agriculture of the Board. But his did not prove to be a path of roses, and he resigned after a service of one year and four months. Even in farm management there was too little unanimity of ideas to make life agreeable to one under employment, with several persons esteeming themselves higher in authority but differing with each other in views.

In June, 1870, during the day upon which the resignation of Professor Bliss was accepted, the appointment of Dr. Manly Miles was made as professor of agriculture with the understanding that he should serve during the fall and winter months, thus dividing equally his time between the Michigan Agricultural College and this institution. No one else in America at this time enjoyed anything comparable with Dr. Miles in the public estimation of competency to give instruction in scientific agriculture. He it was who had been called the only professor of the subject in the country. The trustees and others considered themselves in great good fortune when it seemed he was to lead the way out of the dilemma in which they found themselves placed. But it was not to be. Arrangements failed at the Michigan end of the line, and it was not until five years subsequently that he finally resigned at Lansing to accept here the double duty of professor of agriculture and of agricultural chemistry. The latter part of the title was added in good part because he was to draw two salaries compared with those usually paid. This time he entered upon service here with anticipations, at least on the part of others, of great accomplishments. The

perplexing, disappointing, discouraging, and disagreeing condition of things in connection with the department and its work was to come to an end, and there was a justifiable basis for great hope for the future. No other action by the authorities could have been taken which seemed so full of promise, so big in anti cipated results. Alas! The transplantation did not succeed. Perhaps the roots were down too deep to permit the severance; perhaps the new soil was ill-suited to development of this second foot-hold. There was no lack in vigor, however. New growth was apparent enough in many ways, yet all ceased at the end of one year. This latter was largely due to radical differences of opinion as to what should constitute the curriculum of study in the University generally as well as to what should be attempted in the agricultural department itself. There was, in a word, too little real knowledge and too much fanciful theorizing for any substantial unity of purpose or agreement in procedure. The storm ended by the professor's withdrawal.

When in 1870 or 1871 it came to be understood that Dr. Miles could not accept his first engagement strenuous efforts were made to fill the place. All this came to nothing. There was really no one to appoint with any confidence in the outcome. Then it was said we must make a professor. Fortunately instruction in the biological and physical sciences gained rapidly in the new state institutions. Laboratories were equipped as never before in our land. Laboratory methods soon largely supplemented or supplanted the lecture system of instruction in science. Students began to deal with things rather than with printed or spoken words. The change in educational procedure amounted almost to a revolution due not alone to the founding of the land grant colleges, but carried forward by them with unequaled spirit and energy. The making of an agricultural professor was nearer possible than ever it had been before. The first class graduated from the Illinois Industrial University in 1872. One of the brightest of its members was made an assistant in the chemical laboratory, and during his first year of service was selected in effect for the agricultural position. He went to Europe for a year's study shaped entirely towards his anticipated duty, and in 1874 was made instructor in agricultural chemistry. Perhaps personal reasons in this case more than in any other caused the termination of the engagement after the

apparently established period of one year. It was at the close of this service that Dr. Miles entered upon his work. In the mean time the affairs of practical agriculture, as the phrase was, had been entrusted to the head farmer and to one or another employed as temporary director of field experiments. The Regent and various members of the faculty gave assistance, such as it was, in class instruction.

In 1876 George E. Morrow, then professor of agriculture in the Iowa Agricultural College, was elected to the chair in this institution, and in one respect, but by no means in all related things, the fateful troubles were ended. He retained his office during eighteen consecutive years, and was dean of the college from the time of its organization in 1878. So far as this early history reaches and with all it includes, there is no other name so important for what it recalls, so lustrous for what it denotes. In his memory the hall in which we meet is appropriately, and, let us trust, significantly named. Today as we triumphantly dedicate these buildings, we bring also our loving tributes and our laden testimonials to the service-rendered memory of this service-giving man. He was singularly gifted in many ways, and these included qualifications needful in the arduous and difficult work which he undertook to perform. He harmonized opinions, co-ordinated interests, gained the confidence and good will of those in authority and of others with whom he worked. Himself an editor in his earlier career, he secured a favorable attitude on the part of the agricultural press. He was unequaled at the time as a lecturer at home and abroad upon agricultural themes, and his devotion to his subject was limitless in time and boundless in endeavor. He, too, however, had his professional troubles. He often went from his office at the close of the day with a heavy heart. His tired brain too frequently suggested: What is the use? Why prolong the contest? But the next morning he took up again his task with spirit and with continuous hope of ultimate success. There were encouragements as well as discouragements, but we are not attempting a complete story. At the close of his long career he could not say that in the actual and plainly observable condition of things his expectations had been justified or his favorable predictions fulfilled.

Turning now for a moment to horticulture in this rapid review, similar statements might in part be made. After two

years of inquiry the second professorship in the original list had not been filled. Here again no one in our entire country was really qualified for the proposed duties. In the emergency the trustees turned to a young assistant professor of natural history in charge of a department so named and which had been organized during the first year, and in March, 1870, he was made professor of botany and horticulture. That he continues in service was due, without doubt, to the connections with the first subject in this title. The horticultural duties were *addenda*. After the class-room exercises were over for the day, drains could be located, grounds laid out, trees planted, fruits gathered, plant diseases studied, etc. It is almost certain no man could have long sustained himself in these practical affairs taken by themselves. The story would have been that already told.

Such in brief and in a rather one-sided account is the early history of agriculture in this institution in which the subject and the workers now have so prominent a part. Let us see if we can find the causes for the slow and dearly-bought development.

In the first place we must understand that the history here is in no wise peculiar, neither can failure be attributed to any want of earnestness of purpose or honesty of mind on the part of authorities. What was true here was essentially the case elsewhere. As we have seen, great things were anticipated; agriculture and agricultural people were to be vastly and at once benefited by the new institutions. Nothing else was to take precedence under any consideration. This first, other things secondary. The disappointment was attributable to causes such as the following:

1. Too much was expected. Too great things were to be accomplished. The public mind has been aroused to a condition of great expectancy without having concerned itself with the means of accomplishment or even without any well-founded reasons upon which the effects should follow. The inevitable result was disappointment and a disposition to blame somebody for it.

2. The ends sought were vaguely perceived. Everybody thought he knew what was needed to be done and perhaps how to do it, but the thinking was superficial; it was theoretical in the main and took color from the circumstances and characteristics of the individual. There was therefore clash of opinion with no standard of comparison or valuation.

3. Science had not been adjusted to the elucidation of the complex problems involved. The complexity and difficulty of these problems were rarely recognized. It had been proclaimed and believed that a chemical analysis of soil would infallibly indicate what crops would succeed thereon, or what definite substance or substances must be added to make certain crops a certain success. Almost no attention had been given the biological factors. As is the case with all those partially informed the men of science were over confident. Their emphatic statements did not find support in practice, and science itself was discredited. The idea that a professor could teach agriculture was often held to be ridiculous, and there was some basis for this holding. In a word science and practice were too far apart and each esteemed the other too little.

4. There was woeful want of understanding in regard to what one man could and could not do. For a score of years only one department was thought of by either trustees or by professors. Each institution had filled its complement of officers with one professor of agriculture. He and his superiors thought it was his duty to develop and teach the whole subject, or rather all the subjects suggested by the name. Superficiality prevailed but no one recognized it. We see it now well enough, but through advantages not then enjoyed. We will do well if with all our helps the agricultural departments are not too open still to this criticism.

5. No one began to realize the unavoidable cost of agricultural education given in anything like a truly sensible way. A lecture room with a desk, some chairs or settees (not very many), a few charts and pictures hung upon the walls,—these constituted a professor's equipment aside from the things to be found in the barn or in the fields. Is it a wonder that students were few and that enthusiasm was at a low ebb? Chemical and physical laboratories were known to need large and varied supplies of apparatus and materials, but that equivalent facilities should be furnished the teacher of agriculture no one, not even the latter surmised.

6. Without further enumeration it may be said that the agricultural education of the first quarter of a century in our land-grant colleges was poor and halting because it was before its time. The inertia of the ages was upon it. There was no

self-generation of power. A second birth was needed here as elsewhere ; a birth of the spirit and of the understanding.

Let us be thankful today for the tribulations of the past. Let us square ourselves to the new conditions and by the new interpretations of requirements and of possibilities. Let us give due credit to those who, working in the dark and under restraints and limitations made possible the dawning light we enjoy and straightened the path in which our feet may tread.

ADDRESS

E. DAVENPORT, M.AGR., University.
Dean of the College of Agriculture and Director of the Agricultural Experiment Station.

Upon the front of this building are two inscriptions that fairly indicate what the structure stands for. One is from the pen of President Draper—"The wealth of Illinois is in her soil, and her strength lies in its intelligent development." Here is a great economic truth that lies at the very foundation of the future of Illinois, and one whose whole significance it is the business of this building and all it contains to assiduously propagate among the people.

The other inscription is one of the many new truths announced by Professor Turner, whose statesman-like conception of the meaning and possibilities of higher education has not only given us the land grant colleges in all the states but has introduced some new educational standards among the people. This sentiment of Professor Turner's upon our cornice—"Industrial education prepares the way for a millennium of labor"—serves to remind us that the material resources of a people will never be fully developed without the aid of trained intelligence; and further, that the man who develops these resources and provides the material without which not only our civilization but our lives would go out to-day—that this man whom the world has neglected because he labored with his hands—that he is a man whom God has made like other men to look upward, and who in this country at least has made himself a citizen.

These sentiments mean that no people can become great without regard to the fruits of labor. They mean, too, that labor can not be effective until it is trained; that no laborer can develop and use the resources of a country as they should be developed and used until he is intelligent; and they mean further, that the man himself need not be offered a living sacrifice to the labor necessary to bestow upon the material world to make it habitable for civilized man reaching out after the infinite. These sentiments mean, too, that we shall all go along together, if we

ADDRESS

E. DAVENPORT, M.AGR., University.
Dean of the College of Agriculture and Director of the Agricultural Experiment Station.

Upon the front of this building are two inscriptions that fairly indicate what the structure stands for. One is from the pen of President Draper—"The wealth of Illinois is in her soil, and her strength lies in its intelligent development." Here is a great economic truth that lies at the very foundation of the future of Illinois, and one whose whole significance it is the business of this building and all it contains to assiduously propagate among the people.

The other inscription is one of the many new truths announced by Professor Turner, whose statesman-like conception of the meaning and possibilities of higher education has not only given us the land grant colleges in all the states but has introduced some new educational standards among the people. This sentiment of Professor Turner's upon our cornice—"Industrial education prepares the way for a millennium of labor"—serves to remind us that the material resources of a people will never be fully developed without the aid of trained intelligence; and further, that the man who develops these resources and provides the material without which not only our civilization but our lives would go out to-day—that this man whom the world has neglected because he labored with his hands—that he is a man whom God has made like other men to look upward, and who in this country at least has made himself a citizen.

These sentiments mean that no people can become great without regard to the fruits of labor. They mean, too, that labor can not be effective until it is trained; that no laborer can develop and use the resources of a country as they should be developed and used until he is intelligent; and they mean further, that the man himself need not be offered a living sacrifice to the labor necessary to bestow upon the material world to make it habitable for civilized man reaching out after the infinite. These sentiments mean, too, that we shall all go along together, if we

be wise, as we travel upward. They mean that further progress in material things and the later steps in civilization can be attained only through the highest intelligence in all lines of human activity, and the man who offers that intelligence need not be sacrificed; that he can be something more than a stepping stone by which the few enjoy what other men have done. They mean that the masses of men representing all needful elements of our civilization shall improve themselves and their activities together, and that when any of these fail for any cause then the limits of our civilization are reached.

All this means, if it means anything, that every needful thing must be propagated, and it means, too, that a virile people in an advancing civilization will propagate needful things, both in the field of utility and of beauty.

The last half century has seen and heard so much of "industrial education," of "new standards," of "utility," of "the new education," of "material development," and of "commercial supremacy"—it has seen and heard so much of these, and it has seen so much of the strivings after higher education, of people who had heretofore been content with none, that a feeling of alarm akin to a nervous chill has swept the ranks of the educational world, and there be those who can not understand this latter day development of industrial education, especially the agricultural. They look upon it as dangerous in one way or another, and feel a nameless fear that it means an overthrowing of standards like the falling of the ancient altars at Stonehenge, perhaps.

Let me say to these good people, be not disturbed. This is not revolution; it is evolution. Those who are interested in the propagation of higher standards for industry and industrial people understand very well that our civilization does not rest upon industry alone, and, in laboring never so determinedly for the development of our agriculture and the betterment of the agricultural people, they would subtract nothing from the development of every other needful element of our civilization. They believe most fervently that trained industry provides the strength of a people as does art or science its refinement, and that no matter what the exigencies of civilization, no man should be sacrificed to his calling or to any other man. They believe that any people that neglects any of its industries,—mining,

manufacturing, commerce or agriculture, or fails to secure their highest development, sacrifices by so much its strength and its endurance, and they understand perfectly, too.—these people who are engaged in the development of our industries—that any nation or any people that closes its eyes to the teachings of history is blinded; and that if it neglects art as expressed in literature, painting, sculpture or music, it loses by that much the refinement it might enjoy. They understand that industry without refinement leads to sturdy barbarism, and they believe that refinement without trained industry leads to lethargy and decay. Therefore it is dangerous for a civilized people to neglect any industry, art, or accomplishment, as it is to pursue a policy that will permit one class to do all the thinking and compel another to perform all the labor; and therefore, this great movement for the betterment of agriculture, not peculiar to Illinois, but taking possession of all our people everywhere, is not revolutionary. It subtracts nothing from anything. If it erects some new standards it pulls no others down. If it does emphasize the importance of educated industry, it detracts nothing from art and refinement. If it would increase the wealth of the country it only provides the means for a yet higher civilization, and if it be wisely used it will come. If it adds to the material strength of the people it detracts nothing from their refinement; for a people, like a man, may be both powerful and refined. Therefore whatever new problems arise for adjustment incident to the great movement for industrial education they should be adjusted with confident courage, for we need have no apprehension as to final results, because the movement is natural and in the best interests of all classes of people.

I am inclined to think, however, that the rise and progress of industrial education is bringing into the world of thought a new standard of life for all men. Once it was taught that the highest life consisted in withdrawing from one's fellows, and spending his days in contemplation—in thinking for thought's sake,—in leading a life which begins and ends in the individual, an ever hopeless attempt to solve the infinite. I am not sure but industrial education is introducing into the world the gospel of "doing things"—that every man must contribute something in the way of both thought and *action* to the times in which he lives, and that instead of spending his life wrapped in contem-

plation attempting to solve for himself the infinite, he is to assiduously help his neighbors solve the finite. I should be proud to be convinced that this comparatively new standard has come to us, partly at least by the avenue of industrial education.

This all reminds us that there is a distinction between the individual and the mass; and between the man who is taught and the thing that is taught him. Now an educational policy may be very good for the individual and very bad for the mass. It may be so framed and conducted as to give certain few individuals a tremendous advantage over their fellows even to the extent of largely freeing them from the responsibilities of life, thus laying additional burdens upon the less favored ones. It is an open question of the older educational ideals which did not tend to foster this condition of things. However that may be, we are glad to hail a gospel, an educational doctrine, to the effect that education frees the individual from nothing, but lays upon him greater responsibilities towards the community and the generation in which he lives.

Like all other new movements this one of industrial education was obliged to defend itself in the early days when almost nobody believed in its potency for anything but evil. That very defense has erected some new standards good for all men to observe. Industrial education could not at first be defended on the plea of popular demand because those individuals to be most directly benefited—the farmers—seemed not to desire it, but rather to poke fun at it. This drove its advocates out upon higher ground; viz., that agriculture and industry in general should be studied, taught, and developed from the standpoint of public policy, and because their development was needed as a natural and necessary condition to coming civilization, and without regard as to whether or not it was desired by individuals.

The battle was fought out and won upon this ground and we all have been taught a lesson—a great educational truth it seems to me—viz., that institutions of learning and research exist primarily, not for the benefit of particular individuals, but that they exist primarily in order to develop certain great subjects as, agriculture, engineering, chemistry, economics, literature, music, and to stimulate their growth among the people. Under this view teachers and investigators both in college and without

are the leaders in this development, and the students are the means for its propagation among the people.

Under this thought, this building and the college and experiment station that it shelters are devoted primarily to the development of agriculture in Illinois, and they may do anything and should do anything in harmony with other interests that will contribute to that development. The students, therefore,—much as we love them—are not educated so much for their own sake as that they shall go out and carry into their generation the best that the present has to give. They have no business to consider what is here learned and taught as personl property to be hidden in a napkin or to be used only for personal enjoyment or advantage. They must take it and use it for the benefit of all men and for the development of our industries.

It is to be said however, for the college and for the business of instruction in general that no method of propagating truth among the people is half so effective as that which goes out from the class room and the laboratory in the minds and hearts of young men and women. These go out and begin new lives, and because it is easier to adjust than readjust, so it is that after experiment stations and scientists have discovered all that is to be known of agricultural truth and the last bulletin and scientific article have been published on the morning of the millennium—then will it be seen that after all the greatest work was instruction and the most powerful agents of progress are well trained young men and women.

This building on the hill and what it shelters are by no means the only agents for agricultural development in Illinois. There is besides, the public press, a wide spread correspondence and an interested and progressive constituency. If in the old days farmers were slow to believe in such institutions and were prone to overestimate their own experience, that day has passed. If it be true yet in any state or section, it is most emphatically not true in Illinois today.

Upon the farms of this state there are hundreds, yes, thousands of farmers, each meeting both success and failure, who are determined that the agriculture of this State shall advance; that these lands which have not properly responded to our efforts shall produce; that those which have produced shall yield more, and that we shall so learn to manage these lands

that we hold, not in fee simple but in trust for those who shall come after us—that we shall so treat them that their productive capacity shall not grow less but more—to the end that our children's children's children shall not curse us in our graves, but shall bless us for leaving behind us and to their generation material wealth enough to make it possible for them to be civilized, for have you not thought that man may so treat the earth as to starve his own descendants? I say to this audience and to all men that the determination of these men to develop agricultural education in Illinois is unalterable; and the energy with which they will prosecute it in their generation is akin to the energy of despair in the hopeless and the energy of faith in the martyr. These represent the same interests that a generation ago were indifferent to agricultural education and development. But they have seen and felt both the necessities and the possibilities of education in agriculture and they have looked ahead down the generations and have seen what these things mean in the last analysis; not only that, but thinking men of all callings recognize and lend sympathy and assistance to this movement for a better agriculture. And this is why the agricultural development of Illinois is to be represented, not by the building we now dedicate, nor the college and station that it shelters, but by the men who own and occupy the lands of the state and by those other men in many callings who understand what agricultural development means. This is why the movement will endure.

These have been the men who have helped the University to do this thing—to build the largest single building devoted to agriculture in the world, and without them it could not have been done. Thirty-three years ago a college of agriculture was established here. It languished until the time came when these men representing the interests it was designed primarily to benefit, took hold of the matter. It did not thrive until then—it could not have thriven before.

In 1895 the trustees asked for $40,000 for a dairy building. It was scarcely considered. Two years later they asked for $80,000 for an agricultural building. It failed, and many farmers and farmers' institutes opposed it. Two years later, and for the third time, the trustees asked for an agricultural building, but fixed the amount at $100,000. The farmers

officially endorsed it in the State Institute and a campaign of education commenced throughout the length and breadth of the State By careful study it became evident that $100,000 would not be sufficient to provide what was needed and the estimate was raised to $150,000 *during the campaign.* It was supported by every agricultural organization of the state—I had almost said by every farmer and citizen of the state—and passed the General Assembly without amendment and with only one dissenting vote.

When this vote was taken we had twenty-one regular and twenty-two short course students. The next year, although we abolished the short course, we registered a total of ninety, and this year a total of one hundred and fifty-seven.

Then again, these same farmers in the name of their various organizations have just closed a campaign for increasing the funds of the experiment station by over $50,000 annually. This with the askings of the trustees for furnishing the building and for increased support of the college, provides a fund for the college and station not exceeded by that of any single institution devoted to agriculture in the world.

Wherefore, then we should all rejoice this day. What has been done we have done together—for nobody's good but that of Illinois. The University stands not only for industry but for all things needful and contemporaneous with this increase in agricultural funds it has received the largest appropriation in its history, showing that Illinois is large enough of pocket and of heart so that one thing need not feed off another, but that she is both ready and willing to do well whatever needs to be done for the good of all her interests and the benefit of all her citizens.

ADDRESS

THE OPPORTUNITY IN AGRICULTURE.

THOMAS F. HUNT, M. S.
Dean of the College of Agriculture and Domestic Science, Ohio State University.

The history of education, for, in, and by agriculture is always a fascinating subject and it is difficult to resist its recital. Its history is no part of the theme for this afternoon, however, and, moreover, it has frequently been set forth at length by far more potent pens. If this address contains aught of history, it will be because of its bearing upon the present and the future.

The discussions of this subject forty or fifty years ago make it perfectly clear that the early agitators were concerned in education *for* agriculture rather than *in* agriculture or *by* agriculture. They were concerned in the education of all the industrial classes along lines which would make them the most effective "in the several pursuits and occupations of life" because they believed that the welfare of the State depended upon the education of the masses. This is, indeed, the only warrant for the taxation of the people for the personal benefit of the individual. We vote bread and meat only to the physically, mentally, or morally incompetent. We vote a free education in order to give every one a reasonable opportunity to earn his bread and meat, because the welfare of the State demands it. This proposition is too well understood to need more than the merest statement. The magnificent series of buildings, which we are called upon to dedicate today, the most extensive in the world for the purposes for which they are intended, is evidence sufficient, if evidence were needed, that this proposition has lost none of its force in the nearly thirty-nine years that have elapsed since the Congress of the United States, amid the most terrific civil conflict, passed the epoch making bill which prepared the way for the Arts of Peace. I wish here to congratulate my alma mater and all its officers who have promoted this undertaking upon their splendid achievement and to thank the people

of the great Empire State of Illinois who have so generously voted money, not only in their own interests but in the interest of mankind for all time to come.

The farmer's need of education is a theme which I delight to discuss. It is the proposition that if a man is going to be a farmer, he of all men should have a thorough school training. The operations of the banker, the merchant, the manufacturer, the lawyer, the public speaker even, teach them much that they need to know to be successful. They are taught to do by the doing. What does the spreading of manure teach a man concerning the chemistry of fertilizers? What does the planting and reaping of corn teach a man concerning the laws of plant-growing?

The ordinary operations of the farm do not teach the farmer the most important facts concerning his business. In order to get that information most necessary to his highest success the knowledge obtained from farming must be supplemented from some other source. The more you look at this question, the more avenues from which you approach it, the stronger it will appeal to you.

This proposition was defended from this platform nearly seventeen years ago when the last act in securing a first degree from these profes— No, I forget. It was not these professors. It was only seventeen years ago,—only a few years ago, surely,—but what changes! Since then, many a platform has been occupied with moderate composure, but here is but a beardless boy, standing with sinking heart before his fellow students, and as he walks out and makes his bow to President Peabody, he casts a hurried glance down the row with that feeling of student reverence for his professors that should he live till he was three score and ten, he could not out live. But I have been dreaming. Let me look again. Morrow, Snyder, Crawford, Prentice, McMurtrie, Roos, Pickard, who said, "Miss Pierce, can you pierce that?" "No," flashed back instantly the reply, "But I can *pick hard* at it." These are no longer present. Some have already gone to a deserved rest. But have they all gone? Let me look again. No, a few remain. Dear men and true,—men who have seen this great University grow from a tiny seedling into a sturdy and ever expanding oak,—still hold honored positions and influence in the faculty and affectionate places in the

hearts of the alumni. Great, indeed, have been the changes in seventeen years. Then there were less than four hundred students; now more than two thousand five hundred. Then the faculty consisted of twenty-eight persons; now the instructional force consists of two hundred and fifty-eight persons. Then there were buildings devoted to instructional purposes worth with equipment less than $350,000; now they are valued at one and one-third million dollars. The total annual income from all sources was then less than $100,000; now it is nearly half a million dollars, the climax being capped by the largest appropriation ever made by a legislature at one time for an educational institution.

I beg your pardon, ladies and gentlemen, for having allowed my personal feelings towards the old student home to lead me thus from the subject. The farmer's need of education is not, however, to be the theme this afternoon.

A passing thought can not be resisted concerning that ancient argument in favor of the farm, viz., that the farm has been the source of presidents, statesmen, diplomats, eminent lawyers, doctors, ministers, *ad finitum*, *ad nauseum*. The logic of this is that the farm is a good place to be born if you only get away soon enough. This argument says in effect that the farm is a valuable breeding ground to furnish strong, healthy, vigorous stock for the nation, the most able and the most intellectual of which are to be selected to supply the professions and manage the business interests of our cities, while the rest may go to the devil or become farmers. Apparently, in the minds of many, the two destinies are identical. I have no quarrel with this argument when it is stated frankly, but I submit it is not calculated to convince a young man that agriculture offers him an opportunity for a worthy career.

The thesis of this address is, Does agriculture (using the term in its broadest and proper sense) offer an opportunity worthy of an able, intellectual, ambitious young man? Can there be found therein a career worthy of an educated, broad-minded man?

Last year a young man graduated from the course in Agriculture. He happened to be unusually young. He was but twenty. Almost immediately upon graduation he was appointed to a cadetship at West Point through the courtesy of Senators

Hanna and Foraker. He was an able, intellectual, cultured student of excellent spirit, manner and address. He has had, as I believe, a thorough, sound education. He was such a young man as any home or college might be proud to send into the world. As it happened, he had during his college course been very much interested in the military drill, having occupied about every position in the battalion from private to adjutant, and had, in the absence of the commandant, during the Spanish-American war, had charge of the battalion and taught military tactics. Suddenly he had two careers open to him. If he chose the one, the government would see to it that he suffered no real pecuniary need throughout his life time. His abilities are such as reasonably to assure promotion. He might even hope to occupy a position in the army second only to the President of the United States. If he chose the other career, and at that moment there was no immediate opportunity open to him, he must seek a career, where there was the ever present but ever unpleasant duty of providing bread and meat. He was up against (this is not slang) one of the great problems of life. He, of course, sought advice, but, I believe, he decided finally for himself. He does not lack in bravery, and I do not believe he had any special sentiment concerning the agricultural life. He had to decide between the art of war and the art of peace. He chose the art of peace. Did he choose wisely? It may be of some significance to note here that he subsequently entered the government service, but it was in the Department of Agriculture and not in the Department of War.

This, then, shall be the theme for a brief time this afternoon,—Does the opportunity in Agriculture furnish a worthy career? I shall discuss it in two aspects, viz., the character of the education, which a course in agriculture offers and the opportunity for one so educated. Nor is the subject to be treated from the agreeableness of the occupation. The beauty of sitting under your own vine and fig tree shall not enter into this discussion. No one will claim that the occupation of the President of the United States is a particularly pleasant one, but every man is ready and anxious to admit, if not by word at least by deed, that the position is worthy of the ambition of any American born citizen. Whether a man likes to wade around in the mud in the pure air rather than to walk on the carpet in the

foul atmosphere (both literally and figuratively) of a criminal court room, is largely a matter of personal preference. It is a case of head vs. feet. I, each year, become more gratified that I did not choose the profession of law, because of my personal dislike for many of the circumstances surrounding a law practice, but that is not sufficient reason for others to avoid it, and every one must recognize that the practice of law offers to an ambitious, educated, high minded young man an opportunity for a worthy career.

When these institutions first offered themselves to the public as agricultural colleges, a few men in their faculties did a little teaching for agriculture, still less teaching in agriculture, and generally no teaching at all by agriculture. This is not strange. The few noble spirits, who kept alive the fires that burned so feebly during the first twenty years, and who essayed to teach the application of the sciences to agriculture, had not had, except in rare instances, any training in the sciences which they sought to apply, and, except in rare instances again, did the men who taught the sciences perceive their relation to agriculture and sometimes cared less.

Some exceptions, however, are worthy of note. The first experiment stations, established through the zeal and self sacrifice of a small group of men, were the means of instructing and inspiring a few young men, who have become the leaders of scientific thought as it relates to agriculture. These men may not have all been thoroughly practical men but they were deeply trained in the sciences relating to agriculture. On the other hand, there were a few of our colleges that had the good fortune to secure as their so-called professor of agriculture, men of unusual vigor of mind, enthusiasm for the cause, and withal a wide knowledge of agriculture. In these institutions, a few young men have been trained, which, meeting with their more scientifically but less practically trained brethren, have together helped to control the destiny of this cause during the past twenty years.

It was not, however, until ten years ago, which happens to be coincidental with the passage of the second Morrill Act, that the teachers of what may be called technical agriculture were at all generally men who had been trained in the sciences underlying agriculture. These men, be it observed, had received their training in technical agriculture from men who had, themselves,

for the most part, had no scientific training. What I would like to have the thoughtful young man see at this point is that most of the men, who have been trained in agriculture by those who have themselves had a college training in agriculture, have not been out of college more than five or six years and are, for the most part, less than thirty years of age. Boards of Trustees are remorseless and, perhaps, properly so, and men of my training will soon be no longer needed.

It is fully recognized that the professional field in agriculture is a distinctly limited one and it would, indeed, be a sad commentary upon the cause, if it was the only worthy field in agriculture open to a young man. But this much may be said that in the past ten years, while I have been expecting to see this theoretically limited field supplied, the opportunities have constantly increased in number and improved in character. An illustration from a single State university having eighteen courses of study which lead to a degree, may be permitted. Twenty of its graduates during the last ten years are now in college positions other than their alma mater. Seven of these are from the course in agriculture. There has not been a year in the past five years that thoroughly trained and thoroughly able agriculturists have not been in demand for positions requiring the highest capabilities.

Teachers are the first necessity of a school of any kind, but only second to the necessity of teachers is the necessity for something to teach. The sciences have made great strides since 1870, especially the biological sciences. Chemistry had, indeed, a thoroughly established standing and the professor of natural science did the rest. However, mathematics and physics are not mechanics or engineering; physiology is not medicine; and chemistry is not agriculture, however fundamental these may be to the callings in question.

What did we know about dairying in 1870 that we now teach? Principally that cows would produce milk in the summer time if the pastures were good; that if we stirred some mysterious thing that came on the top of it, called cream, it would turn into butter; or if we added the juices of a calf's stomach to the milk, it would turn into cheese,—all of which had been known for four thousand years. Dairying is now a specialized industry

requiring a special education and training to succeed in it. Among men of business judgment none others need apply.

In an article on "Harvest Implements" in Morton's Cyclopedia of Agriculture, published in 1871, the writer states that "Notwithstanding all the ingenuity, however, that has hitherto been applied to this subject, reaping has been and no doubt for many years, as we have said, will continue to be a manual operation." The writer then proceeds to describe the various forms of sickles with which it is proper to cut grain. This article was not written by an ignoramus. Morton's Cyclopedia of Agriculture was as standard in the field of agriculture as the Century Dictionary is in the field of letters. It is true that America had known something of the reaping machines for fifteen years, but the self binder was yet a figment of the dreams of a few inventors. What this means may, perhaps, be best emphasized by the startling but nevertheless true statement that if the small grains of the crop of 1901 in the United States had to be reaped by the method so gravely described by our English authority, it would take the combined efforts of every man of military age in the United States three weeks to accomplish the task. This has an important bearing upon what is to follow. Here emphasis is laid upon the fact that rural engineering is a different problem from what it was thirty years ago.

Take an illustration from the field of animal industry that is just now for special reasons a very attractive line of work. In 1870, there were common in the United States one recognized breed of horses, three breeds of cattle, two or three breeds of swine, and, perhaps, five breeds of sheep. Some other breeds of live stock had been introduced, but they were practically unknown. At present, we have at least eleven recognized breeds of horses, not including ponies, seventeen breeds of cattle, eleven breeds of swine, and fourteen breeds of sheep, with all of which a man must be more or less familiar before he can lay any claim to being an expert in the field of animal industry.

In the field of applied sciences, the changes have been no less profound. When the men who are now teaching the science of agriculture were in college, it was taught as a demonstrated scientific truth that mankind, in the no very distant future, must disappear from the face of the globe for lack of nitrogen in the soil. We know better now. So completely has this better

knowledge been accepted and acted upon in agricultural operations that we have almost forgotten that we ever thought differently.

The year the speaker entered college, Professor Burrill discovered the cause of pear blight. Pear blight still continues on its way but how immensely has the horizon of our knowledge concerning plant and animal diseases widened. Not only have agricultural and horticultural operations been greatly modified but the practice of human and veterinary medicine have been revolutionized, and with it all, the mind of the human race seems to have expanded; reason has taken the place of superstitution.

The establishment in 1888 of experiment stations in each of the states has furnished a fountain from which is flowing knowledge recognized to be of the highest importance to agriculture. Knowledge which now has some semblance at least of scientific accuracy. Knowledge which is as accurate as can be expected when we consider the great difficulty of the subject. The effect of this progress of which but a hint has been given is that little that is taught today of technical agriculture was taught fifteen years ago.

It is necessary to remember that the old type of classical college required only a building of moderate dimensions, and a department therein for equipment, a desk, a few chairs, a pointer, some chalk, and a number of erasers. Thirty years ago, the necessity of equipment for the teaching of the pure sciences was but little recognized. The necessity for a fairly equipped chemical laboratory was indeed understood. A herbarium for the botanist, a few snakes and other specimens in alcohol for the zoologist, a number of cork lined boxes for the entomologist, a small collection of minerals and stones for the geologist, a manikin and a few bones for the physiologist was about all that was thought necessary. When it came to the department of agriculture, a few samples of grain, mostly worm eaten, a collection of patent office models, mostly of machines, which had never been used because of their visionary character, a few framed prints portraying animals of impossible conformation or in impossible attitudes, and a so-called model farm was considered the sine que non for an equipment. A properly equipped farm is, indeed, a desirable adjunct to an ideally equipped college of agriculture, but other things were more essential. A farm, however, to

serve the highest purpose of instruction to say nothing of experimentation cannot be made a model for a farmer to follow any more than a university machine shop can be made a model for a shoe factory.

Just as the teaching of the sciences has been found more expensive than the teaching of classics, so the teaching of the applied sciences has been found more expensive than the teaching of abstract science. And of all applied sciences, the teaching of agriculture has been found to be vastly the most expensive and it must, in the nature of the case, continue so. It is only during the past decade that the movement for the proper equipment of the colleges of agriculture has taken tangible form. The great state of Illinois has felt this movement and has come bravely to the front with the structures we are dedicating today, and with the equipment so soon promised will be second to none in the Union.

It may not be out of place here to inquire why agriculture has been slow in coming to its own. It is because of the difficulty of the problems involved. The political economist has long ago divided people engaged in gainful occupations into four or five classes. Leaving aside the work of the serving class, the work of the world is divided into three classes, viz., changes in substance or natural products from which results agriculture and mining; changes of form, from which results manufacturing; and change of place, from which results trading and commerce. Did it ever occur to you that of all these great classes, agriculture alone deals with living things? Why has the cause of pear blight and the metabolism of nitrogen in the clover plant been so long hidden from the human understanding? It was first necessary to invent a high power microscope.

Like the water that flows to the sea, civilization has proceeded along lines of least resistance. The science of agriculture, dealing as it does with living things, has, because of the difficulty of understanding the processes of life, lagged behind those occupations depending for their best development upon a knowledge of the physical sciences. The science of agriculture will not reach its highest development until the problem of life has been solved. No man dare prophesy the heights which it may yet attain.

The study of agriculture, therefore, presents problems

worthy of the most gifted and highly educated young man. A four-years' course in agriculture, or in any of its specialized branches, today gives a man not only a training *for* agriculture but *in* and *by* agriculture. It gives him such a professional training as to fit him as a bread winner of the highest type. When he has finished, he is fitted to do something somebody wants done. He has not only received a theoretical knowledge of the laws of nature, but such a practical knowledge of their application that he can successfully use them on the farm, in the dairy, in the orchard, or in the garden. Not only are the hand and the eye trained, but through the hand and eye the mind is trained. In other words, the course in agriculture offers a sound education. Its graduates are not only educated farmers, but educated men.

I am not ready to assert that the mental drill received from instruction by technical agriculture, as at present taught, is equal to that received by the study of Greek, Latin, or Calculus. It is freely recognized that the colleges of agriculture have large opportunities in this regard. The men who are teaching these subjects have had literally to dig their subject out of the ground and have, in some cases, been so absorbed in acquiring knowledge that they have neglected the pedagogic methods of imparting it. But I am ready to assert that the young men who are now being graduated from the courses in agriculture are, let the reasons be what they may, the peers of the graduates of any of the courses of our land grant colleges and their subsequent work is showing them to be such.

I am conscious that I have used a great deal of time in order to say to the young man, that if you want a sound education, if you want an education that will fit you for a useful life, if you want an education worthy of the mental capacity of an Edison or a Pasteur, you can find it in a course in agriculture. If it will not serve your purpose in after life, do not take it. There are plenty of other courses that will give you as good a training. The variety of courses in the state universities is such as to suit the most fastidious. But if you are interested in the problems underlying agriculture, if your artistic instinct leads you to prefer producing, living, pulsating models of plants and animals, instead of reproducing their counterfeit on canvas, if your scientific bent is towards organic rather than metallurgic chemistry,

for botany rather than physics, if your business ability lies in trading in stock rather than in trading in stocks, if your love for excitement is better satisfied in the show ring than in the court room, you need not avoid a course in agriculture, because it lacks a training worthy of the highest mind. The Dean of your General Faculty years ago said that the digestive juice of education is interest. The fact that almost without exception those who have studied agriculture have been interested, not to say enthusiastic, has, in no small measure, added to their success.

But granting all this, after the education is acquired, will it produce bread and meat, and if so, is it sordid? Does it present an opportunity for a career, or will the possessors remain hewers of wood and drawers of water?

This is just as good a place as any to behead once more that hydra-headed monster, which asserts that agricultural colleges educate boys away from the farm. I happen to have the statistics concerning the alumni of a college of agriculture and of its ex-students since 1892. These statistics concern 399 young men who have spent more or less time in studying agriculture. The occupation of 60 is unknown. One hundred and seventy-four are farmers, gardeners, and dairymen, 48 are creamery operators, butter, and cheese makers, 8 are farm superintendents or employees, 28 are employees of colleges or stations or of the United States Department of Agriculture, 3 are editors of agricultural newspapers, and 19 are students in other colleges. The total number in all other occupations is 59. Of the 320 men who have settled occupation, 261 or 82 per cent., are engaged in agricultural pursuits. I am repeating no set phrase, when I say that those who have become farmers are not only generally succeeding from a pecuniary standpoint but they are becoming leaders in the intellectual, social, and political life of their respective communities. While a course in agriculture is not to be recommended as a means of political prosperity, yet it is probably quite within the truth to say that there is no surer road to political leadership even than success upon the farm by capable, broad-minded, well educated men. Three of the farmers in the last Illinois legislature were trained in agriculture at the University of Illinois and their alma mater has had no reason to be ashamed of them.

Particularly is success coming to those who have completed a

four-year course. Many young men have taken a one or two-year course in agriculture and in some institutions a winter term course, and they have gone to farming and have had a fair measure of success depending much, of course, upon their previous training. Many earnest and successful men have been trained in this way. There is, however, no greater error than to believe that if a man is going to farm a one or two-year's course is sufficient, while if he is going to be a teacher or an experimenter, he must have a thorough undergraduate and post-graduate training. Farming, in its several branches, is no exception to the rule that the greater the ability, the greater the success. Neither is there any question that many lines of farming now offer opportunities for the talented. The fact is that a training cannot be too severe for the man who intends to farm. No man needs a rigid training more; in no occupation may such training be made to count for more. A young man to be perfectly safe of success upon the farm should take a thorough under-graduate study, a year's post-graduate work, and then he should spend about three years as superintendent of a farm for some one else, or as a professor of agriculture in some land grant college. He, then, becomes a trained agriculturist, worth a respectable compensation whether in business for himself or on salary for others. What engineer, what lawyer, what doctor, or what professor of literature or art considers himself able to win success in his calling without an equal training? I tell you, ladies and gentlemen, that if the farms of the United States do not furnish worthy opportunities for men thus trained, the cause of agricultural education is well nigh hopeless. I am equally convinced that the farms of the United States do furnish such opportunities. By no means all the five million farms of the United States, but a large enough per cent of them to furnish opportunity for all the gradutes that the colleges are likely to send out in the next twenty-five years.

Men of capital and business judgment are beginning to appreciate that the farms of this nation are distinctly limited and their money is being rapidly invested therein. Already those who have to do with such thiugs are finding that there is a demand for persons to make the capital thus invested productive.

It is by no means asserted that a man must be college bred

to be a man of ability or a superiorly trained agriculturist. Such a claim would be both untrue and foolish. It is claimed, however, that a college training is more necessary to a thorough knowledge of his business than to a merchant, a banker, or a manufacturer. It is asserted, moreover, that a college training is a short road to success. If you are in Chicago and want to get to New York, you may take a train or you may walk. Under present economic and social conditions, you had better take the modern method even if you have to borrow the money. As a final word on this phase of the subject, let me say if you cannot afford to prepare yourself to be a farmer, do not farm. Enter some other business where the business itself will teach you success. Far better be a corner grocer or a street car conductor.

As already suggested, numerous opportunities are now open to trained agriculturists aside from the business of farming. Of the 320 young men mentioned a moment ago, thirty-six have graduated from the four-year courses of the college of agriculture during the past six years. Seventeen are on salaries within their proper professional field. The average length of time that they have been out of college is about two and one-half years and their average compensation will be this year about one thousand dollars. The illustrations given are from a single institution and the particular examples are used because the information is at hand.

The United States Department of Agriculture at Washington is also a good illustration of opportunities open to graduates of agricultural colleges, both in the way of positions and further training,—the latter quite as important as the former. Within the present fiscal year twenty-two college graduates have been appointed in a single division of this Department at salaries ranging from $480.00 to $1,200.00. As indicative of the rapidity of promotion, it is stated that ten recent graduates, who entered the Department last year and this year at $480.00 per annum are soon to be advanced to $1000.00, while within the year an equal number of similar promotions will follow. Another Division, it is authoritively stated, will need the coming year fifteen to twenty young men, preferably graduates of agricultural colleges. The Department of Agriculture at Washington is rapidly becoming a great post-graduate school of Agriculture with scholarships and opportunities for rapid promotion. The Department

has just sent graduates of agricultural colleges thus trained to Hawaii and Porto Rico to take charge of experiment stations there at a salary of $3,000.00 each, one of whom, Frank D. Gardner, was of the class of 1891 of the University of Illinois.

After all, however, past and even present opportunities are important only as they indicate the future. The important question to a young man choosing a career is not so much what is the present opportunity but what are the future prospects. Not how well will he begin his career, but how well will he end it. The average expectancy of a man who has reached the age of twenty-one is forty-one and one-half years. The question in preparing for the work of life is not alone, therefore, what is the opportunity today or what will it be four years hence when the young man has completed a course in college, but what is it going to be during the next forty years.

For 250 years we have called ourselves an agricultural people. While it is certainly true that we have been and still are, though in less degree, an agricultural people, our chief problems have not been those of the agriculturist. They have been chiefly the problems of the engineer. We have, it is true, made some real progress in the science of living things. Our animal and vegetable forms have been improved and thereby has the vigor and healthfulness of the human race been increased. I would, in no way minimize the importance of this improvement, but, after all, it has never become a serious question. Much of this improvement has been unconscious and much of it has been done by people who found pleasure in doing it. The large problems that have required serious thought have been the mechanical means of subduing nature, of planting, harvesting, manufacturing, and marketing the crop. At no time in its history scarcely has the nation suffered for food, clothing, and shelter. At no time have these things been more abundant than in the past generation. Nature has been so prodigal that the surplus to the producer has been enormous provided only that the mechanical means could be obtained to handle her bounty. Harvesting machinery, including the cotton gin, and steam transportation have not only unlocked nature's wealth but so cheapened the cost of production as to allow a large part of the population to busy itself with other matters of the highest importance to the present and future welfare of the race. Only during the present generation

have we known two of the greatest of these agencies, viz., the self binder and the transcontinental railways. The result has been that we of the present generation have enjoyed comforts and luxuries beyond the fondest dreams of former generations. At no time has our prosperity been greater apparently than at the present moment. However, ungracious as it may seem to say it, it is to be feared that we have been so busy talking about our prosperity that we may not have noticed the slight quiver that preceeds an earthquake.

It has recently been my privilege to discuss at some length the outlook for agriculture in this country, and were there time such an array of facts and figures could be presented as to be, I believe, both convincing and impressive. Two hundred and fifty years ago, the Puritans started in to subdue a continent. "By 1800 the United States nowhere touched the Gulf of Mexico, and nowhere crossed the Mississippi," much less had our agriculture and our civilization reached these limits. By 1850, we had acquired our present continental territorial limits, Alaska excepted, but the great west and northwest was agriculturally yet an undiscovered country.

In 1875, Central Iowa, at present one of the finest agricultural areas in the world, was a wilderness. Since that time we have swept the continent with our agricultural operations. We have rolled up against the Pacific coast with such force that the shock has sent us thousands of miles across the sea.

The elements that have entered into the problem have been a great fertile, treeless, and easily subdued plain, in a climate admirably adapted to cereal production, one of which, maize, produces twice the food per acre of any cereal known to the civilized nations before the discovery of America; improved machinery, including the steel plow, the mower, the self binder, and the thresher; transcontinental steam transportation; and a people of high intelligence and great energy.

Do all the elements in the problem still exist? Let us look a moment. The animals upon the farms and ranches of the United States increased with such rapidity between 1875 and 1892 that in the latter year we had not only the largest number of animals but much the largest number in proportion to population we have had in forty years.

Now look at the other side of the shield. Since that time

the animals upon the farms and ranches of the United States have decreased with such almost lightning rapidity that in 1900, eight years later, we had not only less but much less live stock in proportion to population than we have had at any time in forty years.

The increase in acreage of cultivated crops between 1870 and 1890 was likewise greater than the increase in population. The increase in acreage of cultivated crops in the past thirty years is greater than was the total acreage in 1870. In other words, we have subdued more of nature to the uses of man since 1870 than we had been able to do in the two centuries of our history hitherto. In the last thirty years, we have doubled our population and we have more than doubled the area of our cultivated crops. Shall we be producing two blades of grass in the place of one that grows today when the population has again doubled? Or will our inability to produce the two blades prevent population from doubling?

It is not here asserted that the two blades of grass will be produced. I believe, however, it is possible to do so, but if it is to be done, it must be done in a vastly different way than it has been done in the past thirty years. The problem will be vastly different. The problems will be solved by those who have studied organic chemistry and the sciences relating to life rather than by those who have studied mathematics and the laws of physics. In short the problems of the future will be the problems of the agriculturist rather than, as in the past, the problemes of the engineers. The great engineering professions need no defense from me and I will certainly not be misunderstood by this comparison as minimizing their importance or that of any other form of useful knowledge to the welfare of future generations.

Is there any immediate evidence that the cultivated area may fail to keep up with the increasing population? The evidence is found in the statistics of the Department of Agriculture at Washington. The cultivated area has not actually decreased as has the number of farm animals, but the area has decreased in proportion to population about ten per cent since 1890 and is now less in proportion to population than it has been at any time in twenty years.

But how can this be? Regard for a moment our unpar

alleled prosperity. If this is the effect of a decrease in acreage, by all means let us have some more decrease. The reply is simply that the seasons have been propitious. Not since the last half of the decade of the seventies has this country had such yields per acre as during the years 1895–99. In no other five years since has the farmer received such large returns in *crops* for labor expended. A single illustration will indicate what this really means. The average yield of corn per acre for the five years, 1895–99 inclusive, was 3.2 bushels more than for the five years just preceeding that period. This is an increase of 14 per cent. This means an annual increase of two hundred and fifty million bushels of corn from the same acreage—if used in place of wheat more than half enough to bread the nation. All the golden metal mined in the same period in the United States would not begin to buy to-day merely the increase in this golden grain,—the gift of prodigal nature.

It would be indeed pleasing in this connection to relate that this increase in yield had resulted from the investigations of our experiment stations and the teachings of our agricultural colleges. To make such a statement would be to make the wish father of the thought. Doubtless such agencies may have modified slightly and, when the teachings of the stations are put into general practice, will largely affect the result, but as surely as the rains fall and the frosts come we may expect a series of unpropitious seasons. Some fine morning we will wake up to find the scare head of our "No breakfast is complete without it" newspaper have been changed and that accounts of wars and industrial combinations have been relegated to the second page.

It is well known to scientists that the existence of all animal life and hence of the human race upon the globe is dependent upon the fixation of carbon through the influence of the sun's rays. It is also well understood that the nation's material prosperty is due to those mechanical inventions that have made available to recent generations the stored up fertility of the soil and the stored up carbon in coal, oil, and gas. How the conquest of Asia, Africa, and South America may affect the world at large no one can with certainty predict, but it seems reasonably certain that so far as the United States is concerned trapping carbon or bottling sunshine is to be a much greater problem than it has been in the past.

Does this mean that famine stares us in the face? Does the fate of Egypt, Greece, and Rome await us? Such an inference is by no means necessary. I am no pessimist. The human race has solved its problems as it has come to them with varying degrees of success, but generally for the better. During the past two hundred and fifty years, this nation has solved some of the greatest problems of the race. The nation has greater problems to solve than it has yet encountered, but it was never before so well able to solve them. We need have no hesitation about our posterity. In all probabilities they will attend to their affairs better than we have attended to ours. All that is here asserted is that during the coming generations, men will be needed who have delved deeply into the sciences relating to life. The problem will not be so much the methods of harvesting, manufacturing, and marketing the one blade that now grows but rather what are the life processes by which two blades may be made to grow. To the men who have prepared themselves to solve these problems of life will come the opportunities of the future.

It is curious to note how unconsciously conscious the nation is concerning this matter. In the very years when its soil was yielding her harvests most abundandtly, Congress passed laws which have started the most stupendous enterprise for scientfic reseach relating to the life and welfare of the nation that the world has ever seen. The federal government this year appropriated for the work of its Department of Agriculture, including the state experiment stations, over four and one-half million dollars, to say nothing of the provision that is made for teaching or that is made by the several states to the same objects. Even before there has come an apparently pressing demand for it, the nation is deep into the work.

This, then, is the message which I bring to the young men of today,—the nation's workers of tomorrow. The Colleges of Agriculture are teaching the sciences relating to life in a practical manner, so that one may become useful both to himself and to mankind. It is an education *for* agriculture, *in* agriculture, and *by* agriculture. It is a sound education worthy of the deepest intellect. The present and the future demand men prepared to solve the greatest of problems,—the problems which concern living things. Who knows why clay soils are sticky, and sandy soils are not? Who can answer this fundamental fact with

which the farmer is daily associated? Why can not a stalk of Indian corn be successfully matured in a pot? Whoever answers this, answer some of the fundamental but still unknown questions concerning plant growth. One acre in every three that is plowed in the United States is planted to Indian corn. If all the pig iron mined in the United States had been made into steel rails in the record breaking year of 1899, they would not have purchased the corn crop the same year. Yet each year one-fifth of this great crop is lost in the curing. He who gives the reasons and applies the remedy, will acquire fame and the gratitude of his fellowmen. Neither may the value be placed upon the results which may come from him who changes the chemical composition of this beneficent grain. Of two cows treated exactly alike as far as human endeavor is concerned, one will produce 300 pounds of butter and the other 150 pounds. He who solves this mystery will solve the mystery of the mysteries.

Notwithstanding the improvement in labor saving machinery, the greatest endeavor of the human race is still to produce food. If a penny saved is a penny earned, what shall we say of him who makes the potential energy of this vast force more available. Three centuries ago, the yield of wheat in England is said to have been not more than six bushels per acre. The same soil is rained upon by the same rains and sunned by the same sun, yet to-day the yield is thirty bushels. Who in this country will point the way to sixty bushels of wheat instead of twelve or one hundred bushels of corn instead of twenty-five?

The problems are unlimited but the greatest of them are yet beyond the vision of man. To him who has prepared himself to solve these life problems, will come the opportunities of the future. The world waits for him. Its rewards will not be meagre.