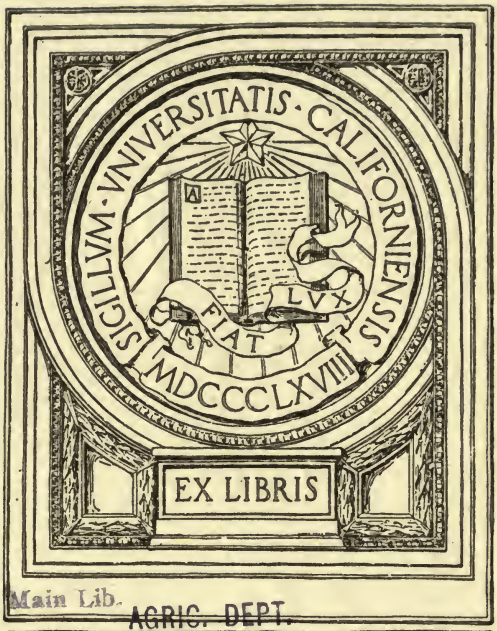

COMMEMORATIVE ADDRESSES.

1862-1887.

Massachusetts Agricultural College.

MASSACHUSETTS AGRICULTURAL COLLEGE.

ADDRESSES

DELIVERED AT THE MASSACHUSETTS AGRICULTURAL COLLEGE, JUNE 21st, 1887, ON THE 25th ANNIVERSARY OF THE PASSAGE OF THE MORRILL LAND GRANT ACT.

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MEMORIAL ADDRESS.

CHARLES KENDALL ADAMS, LL. D.,
President of Cornell University.

THE MORRILL LAND GRANT.

It was a remarkable evidence of the confidence and the composure of our federal legislature that in 1862, just twenty-five years ago, they were able to give their thoughts to the framing of that far-reaching act, in commemoration of which we are to-day assembled. It was at one of the most anxious, if not one of the darkest periods of our terrible war. The first great organized advance of the federal forces was just coming to a disastrous end. The Peninsula Campaign in which were centered all the nation's hopes had taken time for the most complete preparation in order that no repulse might be possible. Fair Oaks, Gaines Mill, Mechanicsville, Cold Harbor, Malvern Hill,—names that even now send a shudder into thousands of American homes,—had followed in rapid succession, and our baffled army took up its retreat on the second of July, the very day on which, by the signature of the President, the act in which we have now so much interest, became a law. Little did the people think that at the very moment they were watching, with bated breath and tearful eyes for every new sign of success or repulse, there was going forward to completion in the halls of legislation at the National Capitol, a great act of statesmanship which in after years would bring the people together, as we are assembled here to-day.

And yet a great act of statesmanship it was. In the few moments I shall detain you it will be my effort to show that its spirit was conceived in accordance with the best traditions of our country, that its

provisions were in harmonious accord with the general spirit of the time, and that it was fraught with the means of incalculable advantage to the nation. To these three considerations, then, I briefly invite your attention.

Within the last twenty-five years the policy of rendering national and state aid to educational institutions has sometimes been gravely questioned. It has been asserted that the work of education, in any other than a purely elementary sense, should be left to the care of private benevolence. This, however, was not the doctrine of the fathers. As was so eloquently shown fifty years ago, when the orator selected to represent Harvard, and Amherst, and Williams pleaded the cause of the colleges before the Legislature of Massachusetts, it was the states acting in their organized capacity, that provided for the means of higher education as well as for the common schools.

Look at the facts of that early history. Years before the famous common school law was passed, provision had been made for the founding of a college, by means of a tax levied upon the whole people of the Colony. As Mr. Everett said, scarcely had the feet of the Pilgrims taken hold of Plymouth Rock, when a year's rate of the Colony was levied in order that the higher learning might have a home in the New World. Nor was the child of this parentage left to any such precarious support as might be afforded by private benevolence. The Court Records of Massachusetts in the colonial period are sprinkled over with evidences of the most solicitous care. It was in the days of poverty. The subsistence of the president and the professors or tutors, as they were then called, was immediately dependent on the bounty of the commonwealth. Appropriations for buildings and for lands were from time to time made. The income of the ferry between Boston and Cambridge was appropriated by the General Court to the use of the college. The legislature selected the controlling board. In short, Harvard College was an institution of the government, founded by it, supported by it and controlled by it. Before the days of independence arrived, more than a hundred different statutes had been spread upon the legislative record for the purpose of guiding and assisting this child of the infant state. Even in the constitution of 1780 it was declared forever to be the duty of the legislature to encourage higher learning and especially the University at Cambridge. And it was not until the sons of the college had multiplied and grown rich, that the legisla-

ture said to them as late as 1865: you can now care for your benignant mother better than I can, therefore I pension her off and entrust her fortunes to your generous keeping.

The policy of Massachusetts was the policy of Connecticut. Long before Elihu Yale gave the final impulse for the founding of the college which was to bear his name, the General Court had carefully considered the establishment of such an institution. The subject was postponed from time to time, not because there was any question as to the propriety of founding such an institution; but because the population was as yet too sparse and too poor to furnish the pupils for two colleges in New England. And so it was not till more than sixty years had passed after the founding of Harvard that the second New England College was established. But after its establishment its history was much like that of its elder sister. During the whole of the last century, as the first President Dwight has said in his History, it was to the bounty of the Legislature of Connecticut that the support of Yale College was chiefly due. Again and again all other resources failed. It was the legislature that erected old Connecticut Hall and gave to it the name of its benefactor.

Then look at the history of Dartmouth. The college began as a work of charity. Gradually it grew into something more than a secondary school. But during the years of its early growth, it never hesitated to call for aid upon the Legislature of New Hampshire; and its call was seldom heard in vain. It educated many of the sons of Vermont, and in due time it called upon the Green Mountain State for its share of assistance. A cheerful recognition of the obligation was the result. The land of a township was given to the college, and a record of the fact was stamped into the history and upon the map of the state by giving to the town the name of the college president.

What was true of the method that prevailed in New England was also true of the South. William and Mary, the second college established in the Colonies, took its name from the royal benefactors who made the first large contribution for its support out of the public treasury. The Colony was also taxed in behalf of the institution. A part of the value of every pound of tobacco raised in Virginia had to go into the treasury for the benefit of the college. This continued throughout colonial days. And when Jefferson conceived the plan of the University of Virginia, in some respects the grandest ed-

ucational project ever devised in America, though he was inclined to intrust less authority to the government than any other of our forefathers, he endeavored to make the institution as much a part of the educational system of the state as were the common schools themselves.

This method of supporting the colleges, moreover, was not only universal, it was also effectual in that it planted and nourished into maturity colleges of a high order of merit even in the infant days of our national life. Not only were admirable scholars made, but they were made in large numbers. The standards of those days, it is true, were somewhat different from the standards of our days; but one who looks at what was done, while recognizing great differences, will hesitate long before he pronounces them inferior. A recent and eminent superintendent of education in your own state not long since pronounced the opinion that the standards of higher education in colonial days were not simply relatively, but actually higher than the standards of the second half of the nineteenth century. I am not here to corroborate this statement or even to express an opinion on that point. But we may regard it as certain that the schools that could train the men of revolutionary days were efficient and were among the most valuable institutions of colonial time.

And when we pass on from colonial days to the days of the republic, we find that the propriety and the justice of these methods were universally recognized. That first great ordinance which still sheds its benign influence over the Northwest, provided that "Schools and the means of education shall forever be encouraged." And from the day of that benignant provision to the present time, no territory has been organized and no state has been admitted to the Union without provision that a part of its domain shall be set apart for higher learning as well as a part for the common schools.

Thus it is that I hold the Land Grant of 1862 to have been in strict accordance with the best traditions of our educational history.

The second part of my thesis is that the Morrill Land Grant was in strict accordance with the spirit of the present time.

We, doubtless, sometimes talk flippantly and unwisely of what we call the spirit of the age. And yet the age in which we live has certain peculiarities which we can hardly go astray in trying to characterize. They are so distinctly marked, indeed they are so generally acknowledged and understood that even to speak of them, subjects one to the charge of dealing with the common-place. But the relation

of these characteristics to matters of education is so important that I shall venture briefly to speak of them.

During the middle ages the work of the schools was limited to the education of those who were to go into the learned professions. It is even a matter of some doubt whether the great Charles, the organizer of schools in France and Germany could himself write or read. It is certain that one of the greatest of French military leaders, as late as the time when the Renaissance was beginning to dawn, was absolutely illiterate.

Nor was this condition of affairs a singular one, or one that should excite our surprise. Before the introduction of the Baconian philosophy, the methods of looking at the problems of life were the reverse of the methods that have now come to prevail. Aristotle said, "Look into your own minds, study the nature of thought, look into the nature of things, and thus you will be able to reason out the course of conduct you ought to pursue." The Aristotelian philosophy prevailed until the seventeenth century. At length came Bacon and Descartes. Their methods were the opposite. They said, study things not so much in their nature,—which you cannot know anything about by a process of reasoning—as in their characteristics and relations. You are to reason from their external appearance and characteristics which everybody can investigate and in some sense at least understand into their internal natures. Thus it was that the Baconian or *inductive* philosophy had for its aim the setting of all thinking beings to the examining of the things everywhere about them. It taught not only that the domain of thought, but also that the domain of action, was open to the scrutiny of human intelligence. It exhorted everybody to pry into whatever there was within the range of observation. Examine the methods of nature, in order to discover the laws of nature. Examine the habits of animals in order to become acquainted with the laws of their development. Study the rocks, the trees, the plants, the flowers, in fact, study all the domain of nature, in order to discover the secrets of nature. The exhortation was followed in the course of the last century by the birth of what are called the Natural Sciences.

It is not singular that this method immediately began to insist on the examination of institutions as well as the things of nature. Heretofore, the rights of the church, the rights of the king, the rights of all governing powers, rested, not on any evidence that such forms and methods by actual experience had been shown to conduce to the

largest happiness of man, but rather on some preconceived right that was founded on authority either human or divine. But now came a change. The Baconian philosophy taught that men might examine the conduct of government; and they drew the logical inference that if they might examine, they might act on the results of examination. This they did not hesitate to do. It is an interesting fact that the immortal work of Bacon which embodied and put into permanent scientific form the results of his studies and the substance of his philosophy was published in 1620, the very year of the Pilgrims at Plymouth, just twenty-two years before the vigorous outbreak of the English Revolution.

Now what was the educational significance of this movement? Why, simply this. It opened the whole realm of nature as the legitimate field of investigation and study. Before this time the work of the schools and universities had been confined to developing the minds of the pupil and the teaching of the four learned professions—theology, medicine, law, and pedagogy. Universities had been established in the twelfth, thirteenth, fourteenth, and fifteenth centuries in all parts of Europe, but in no one of them were studies carried on in accordance with the modern investigating spirit. This is not strange, for the sciences had not yet been born. They could not come into existence till the investigating or inductive methods of study had come to prevail, and these methods it was that the Baconian philosophy ushered in.

A change of this nature was necessarily slow in making itself observed. But there was here and there a man who caught the new spirit and preached the new doctrine. The most enlightened man of the next generation was Milton. He had in the vast stores of his mind all the wealth of ancient learning. But he saw the full significance of the new philosophy and so every page of his tractate on Education is redolent with the modern spirit. Here are some of his words, "I call therefore a complete and generous education, that which fits a man to perform justly, skillfully, and magnanimously all the offices, both private and public of peace and war." This comprehensive definition might not inaptly be emblazoned as a motto upon the walls of every one of the institutions founded by the Morrill Grant of 1862.

But the doctrine of Milton was slow in permeating educated society. Institutions of learning are proverbially conservative. The universities resisted all change until the necessity of change made

itself everywhere apparent. A century passed on during which the ideas of Bacon and Milton were gradually infiltratrating themselves into the minds of the people. Then came the great book of Adam Smith on the Wealth of Nations,—a book which is entitled to this distinction that by combining the Aristotelian with the Baconian methods it sought to establish a science of wealth on a philosophical basis. The premises and the reasoning on which conclusions were founded were not in my judgment without great errors; but the book had its bearings on education scarcely less important than its bearings on political economy and finance. Its teachings were essentially this: the best thing government can do with men, *as a rule*, is simply to protect them against abuses from their fellows, and then let them alone. This doctrine, however faulty,—and civilization is now teaching that it is full of faults,—carried with it this logical conclusion. If it be true, that men will most successfully work out their own fortune and destiny, when not interfered with by government, it follows that they must acquire the general intelligence suitable for self guidance, and, consequently, that far more generous provisions for education must be made than had ever before been provided for.

These doctrines of Adam Smith, moreover, were in complete harmony with what are commonly called the revolutionary doctrines of the latter part of the last century. Jefferson, as well as Adam Smith, preached the doctrine of letting men and things alone. And it was precisely because kings and parliaments and nobles and hereditary lords *would not* let men and things alone, that the revolution came on in America, and, a little later, in France.

There is another phase of the course of events that is worthy of note. While the revolutionary ideas in regard to the proper attitude of government toward the people were taking root there was another revolution going on which had even greater significance. The Baconian doctrine of investigation was beginning to bear fruit. As a consequence the modern sciences had come into being. In all parts of the world every bright boy was looking into things. Every intelligent man was thinking of the ways by which his means of subsistence could be improved. You know the result was the most remarkable succession of inventions that history has ever known anything about. The power loom, the spinning jenny, the application of steam to the driving of machinery, the cotton gin, the invention of the locomotive engine, the building of roads and canals, not only changed the methods of existence from top to bottom, but also made everybody the

near neighbor of everybody else. Contemplate one or two simple facts. At the middle of the last century it was still the regular method of conveying freight in England between London and the interior to put it into crooks thrown across the backs of mules, and send it along the narrow pathways that crossed the country. But what a miracle was soon wrought. When Emerson visited England about the middle of the present century he recorded in his "Notes" that the working power of steam in Great Britain alone, was equal to the strength of six hundred millions of men: and that thirty-six thousand ships were employed in carrying British products to distant parts of the world. What a mighty revolution was that?

It is interesting to note that these two revolutions, the political and philosophical on the one hand, and the social and economic on the other, were strictly contemporaneous. As we said that the date of the Novum Organum was the date of the Pilgrims; so we may note that the date of the "Wealth of Nations" and of the patents of Watt and Bolton were all within the years of our revolutionary war.

Now it is a curious fact, that although it was in England that these two revolutions had their origin, it was also in England that the educational results of these revolutions were slowest and latest in making themselves felt. The reason, however, is not far to seek. England was the first to take advantage of the new inventions. Factories had sprung into existence on every hill side and on every stream, and British goods had taken possession of every market in the world. The statesmen in France and Germany saw that nothing but a systematic establishment of technical schools would regain for the nations of the continent the industrial importance which they had lost. And so industrial and technical schools were rapidly established. The Ecole Polytechnique came into existence in 1795. A school of similar purpose was established at Chalons in 1802; another at Angers in 1811, and another at Aix in 1843. The still more famous Ecole Centrale at Paris came into existence in 1829 with its array of schools for the education of mechanical engineers, civil engineers, chemists and architects. Besides these there were established a vast number of trade schools of every kind, with shops for the teaching of methods of working in wood and iron and brass and other metals. In Paris alone there are more than a hundred such schools open alike to natives and to foreigners.

In Germany the activity in this direction has been even more

marked. Austria has seven great technical schools and Prussia has nine. The new home of the Polytechnic at Berlin, perhaps the finest educational building in the world, has, it is said, accommodations for no less than four thousand students.

Moreover, besides these great centres of the higher grades of technical education, there is a vast number of schools of a more elementary grade. These are grouped about every industrial nucleus in the country. In Hamburg alone nearly a hundred teachers are employed to give instruction in technical and industrial subjects to the thousands of pupils that throng the rooms. At the little mountain city of Chemnitz in Saxony there are five higher technical and trade schools, and so successful have these schools been within the past few years in producing skilled labor, that from the single county of Nottingham, in England, it is said that more than half a score of great manufacturing firms have transferred their machinery to Saxony in order to avail themselves of the superior workmanship that is there offered. And it is in this way that Germany, by means of her technical schools, is taking from England her industrial supremacy.

At last England has come to see her danger. At Manchester, at Sheffield, at Birmingham, and in London technical schools of some merit have recently been established. At last the scholastic tranquility of Cambridge even has been disturbed by the noise of the saws and the lathes and the planing machines of a technical school; and even old Eton, that has rested for centuries in its quiet beauty under the shadows of Windsor Castle, and for centuries has been the favorite school of the scions of nobility, has been obliged to yield to the universal demand. By establishing a technical annex she, however unwillingly, has paid tribute to the inevitable.

But this is only one phase of the general movement. The other, that which pertains to agriculture, is equally striking and equally important.

Agricultural schools were established in Germany early in the present century. But it was not till after Liebig in 1844 published his famous work on "Chemistry as applied to Agriculture" that any real impulse was given to agricultural schools. But Liebig proved beyond the possibility of doubt two things. The one was that however great the draft upon the soil, the fertility may be fully maintained and even increased by restoring to the soil the mineral and the organic matter taken from it at the harvest. The second truth, and one

even more important than the other, was that the proportions and quantities of the ingredients taken up by the crop are so variable and so different under differing circumstances that nothing less than a careful and scientific study of soils will enable one to restore those ingredients in the most efficient and economical proportions. It was accordingly held that for the encouragement of such studies, schools of agriculture must be multiplied.

And from that day to this the number as well as the efficiency of the schools has steadily increased. Prussia alone has four higher agricultural colleges with some eighty professorships; she has more than forty lesser schools, all having model farms; she has five special schools for the cultivation of meadows and the scientific study of methods of irrigation; she has one special school for the teaching of those who desire to reclaim swamp lands; she has two special schools for teaching the growing of fruit trees in industrial nurseries; she has a school for teaching horse-shoeing; one for teaching silk raising; one for the raising of bees; and one for teaching the cultivating of fish. Besides all these she has twenty special schools for the education of gardeners; and fifteen schools for the training of those who are to cultivate the grape.

The example of Prussia has been imitated by the other German states. The little Kingdom of Bavaria, scarcely larger than Massachusetts, has twenty-six agricultural colleges, besides more than two hundred agricultural associations. Würtemberg, still smaller in area, has sixteen colleges, and seventy-six associations. Baden, with a population of only a million, has fourteen agricultural colleges besides four schools of gardening and forestry. Saxony, with its dense population of two millions compacted into a space hardly larger than two American counties, has four higher colleges and twenty agricultural schools besides a veterinary college, and a department of agriculture of twenty professors at the University of Leipsic. Saxe-Weimar, with a population of no more than 230,000 souls has three agricultural colleges besides an agricultural department with fifteen professorships at the University of Jena.

And what has been the result? Simply this, that while in every one of the American states, as is shown by the agricultural reports, the average crop per acre has been steadily growing less and less,*

*Authority for this statement may be found in the *Report of the Commission of Agriculture for the year 1886*, p. 19. It is there shown that the average yield of the leading cereals, between 1870 and 1879 was considerably greater than that from 1879 to 1885. The diminution is shown by the following figures: The average corn crop declined from 26.8 to 25.1 bushels per acre; Wheat, from 12.5 to 12.1; Oats, from 27.5 to 27.2; Rye, from 14.2 to 12.8; Barley, from 22.4 to 22.08; and Buckwheat, from 17.5 to 13.6.

the average crop in Germany has been as steadily growing more and more. In view of these facts, we ought to bow our heads in humility if not in shame. At least let us cease our unwarranted boasting about the superiority of our educational facilities.

Such have been the tendencies in other parts of the world, and I trust that you will now agree with me in thinking that the Morrill Grant in purpose and in aim was in harmony with the general spirit and the best tendencies of the times.

The third part of my thesis is the proposition that this land grant was fraught with the means of incalculable advantage to the nation.

I am willing to concede that in many cases the avails of the grant were not so large as they should have been. If it were necessary, I would admit that in some instances there was a conflict between private and public interests and that in consequence there was a culpable misuse of the funds; I say "if it were necessary," for I am not aware that any such instances are clearly established.

But if there were even general misuse of the funds, would the fact prove that the grant was unwise? Because there is misuse and extravagance in the building of Post Offices and Custom Houses, do we say that the building of such structures should cease? Do we argue that because there are fraudulent contracts for carrying the mails, therefore contracts for the further carrying of the mails should cease? Do we say that because there are frauds in elections therefore no elections shall be held? No! a thousand times no! We contemplate the good we receive, we determine to prevent the recurrence of abuses in the future, and then we demand those appropriations which the greatest good of the people requires. And so must it be in judging of this great measure.

And now having said so much, I wish to allude to one fact that prevented the large returns from the grant that were anticipated. A majority of the states had no government lands within their borders subject to location under the bill. The consequence was that most of the states were obliged to sell the government scrip at whatever price it would bring. The market was flooded with scrip, and the states found themselves confronted with this dilemma. Either they must sell the scrip at the contemptible price of thirty or fifty cents per acre, or they must postpone the establishment and development of the college. It is not easy perhaps to decide which in this alternative was the wiser course to pursue; certain it is that when the states sold the scrip at a low price they practically gave back to the

people in the way of profit on the lands a large share of what Congress had in the first instance intended for the colleges. It follows that whatever the states lost in selling upon a low market, the people gained in buying, and are in equity through Congress under obligations to restore. Fortunate were those states which, although obliged to sell the scrip, found buyers who were willing to locate the lands and give proper guaranty to turn over the profits to the college established.

But notwithstanding the difficulties in the way of realizing the full value of the Grant, no one, I imagine will have the hardihood to deny that a great, an immense good has been accomplished. Look at a few of the facts and figures. The Land Grant amounted to 17,430,000 acres. The sum realized from the sale of this scrip is reported to have been $7,545,405.. This sum has been greatly increased by additions of grounds, buildings, apparatus, and money given by benevolent individuals. In this way the land scrip fund, which in New York amounted to scarcely more than $600,000, has been augmented to not less than about $6,000,000. Though the university to which I refer has, perhaps, been the most fortunate of the land grant institutions, gifts with a similar purpose have likewise increased the endowments in other States. The result is that the latest reports show that these colleges now employ nearly five hundred professors and teachers, and give instruction to some five thousand students. Many of these students have, in turn, become teachers in other schools and colleges. From the institution with which I have the honor to be connected, I recall the names of at least twelve of the graduates who have become professors of some branch of Agriculture in other schools of collegiate grade. In a similar way, the other land grant colleges are disseminating knowledge on those great subjects which were especially named in the bill.

But this, of course, has been but a small part of the work. Thousands of young men, educated in the various branches of Agriculture and Mechanical Science, have gone forth to engage in the practical duties of life, and thus have disseminated and multiplied the knowledge they have received. The work is to go on with ever accelerating vigor, and thus there will be sent out a continued succession for all future time.

There is another feature of the benefits received from this great measure that ought not to be overlooked. I refer to the fact that centres of agricultural knowledge have been established in all the

States of the Union. The science of agriculture, before almost absolutely unknown by the masses of the people has come to be in some measure at last respected and even honored. The agricultural necessities of the country have been made more apparent. To some thousands of young men the stupendous fact is now taught that nature will not be cheated of her rights, and that for everything you take out of the soil, you must put something back, or the time will come when nature's cashier will cease to honor your drafts, and you will end in bankruptcy.

And what a field for such teaching there is; look at the statistics of our Agricultural Department. In every one of the States, in the North, in the South, in the East and even in the West, the yield per acre of all the great cereal crops has been steadily declining since the early years of the Century. The American farmer has impoverished the soil,—and then gone West. It is not certain that this process has even yet been arrested. The last statistics available for general comparison are not very reassuring. If the New England States have held their own, it has not been by means of improved agriculture, but by the general establishment of manufactories. The same process has been going on that converted many of the fertile lands of Virginia into pine barrens. As we all know too well thousands of acres in the Eastern States have been abandoned as practically worthless. Meanwhile the streams of immigration and emigration have been going on. The Irish and the Germans have come to Massachusetts; but the farmers of Massachusetts have gone to New York and Ohio, the people of New York and Ohio have gone to Indiana and Illinois, and the people of Indiana and Illinois have gone to Kansas and the farther West. Ever westward has been the movement until the current has been arrested on the slopes of the Pacific. At length there is no West, to whose virgin soil we may flee. Our farmers no longer have the choice between remaining poor or moving toward the setting sun; they have the other alternative, the one which has long confronted the farmers of the old world, remaining poor or a more perfect knowledge of the conditions under which nature will yield a bounteous and profitable return.

Then look at another fact. In many regions of our country the same desolating process is going on that has reduced the fertile fields about the Mediterranean to sterile deserts. The trees are being swept away and thus we attempt to frustrate the methods by which an all wise Providence designed that the moisture in the deep soil

should be taken up into the plant and cast off into the clouds to be returned again as rain. What has been the result? The rainfall has been diminished, the showers which heaven still does not refuse to furnish, instead of being welcomed by the soft verdure of forests and cultivated fields and lovingly kept in the soil for the good of all animal and plant life, is repelled by parched hill sides, so that it shoots off in angry torrents and is soon once more in the lakes and the great rivers and the oceans beyond. Thus by a perfectly explicable method our climate is undergoing a change and it is the change which in some of the regions of the old world has caused the sands to drift over regions that were once the homes of a prosperous people.

And yet however great the difficulties may seem, there is no tendency of nature that is more amenable to the influence of man's appreciative intelligence. Everybody remembers Emerson's allusion to the ability of the English by the planting of trees on the borders of Egypt to bring rain again after a drought of three thousand years. We have been doing the same thing in the West; for the planting of trees and cornfields in Kansas and Nebraska up to the very frontier has already pushed the rain-line further west by more than a hundred miles. The Reports of the Commissioner of Agriculture are teeming with facts of similar significance. It is estimated, for example, that the loss from the swine plague alone reaches annually some thirty millions of dollars, and that the value of corn and wheat annually destroyed by fungi is not less than the enormous sum of two hundred millions.*

These are some of the lessons and some of the necessities that are taught by experience; and yet they are only hints, as it were, designed to show how vast is the domain that invites the careful study of our schools and colleges. It is into this domain that the people were invited by the wise Land Grant of 1862. It is in this domain that the colleges and universities founded on that grant, if they live up to their high behest, will accomplish results that shall be for the helping, if not for the healing of the nation.

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* Report of Commissioner of Agriculture for 1886, pp. 11, 24.

ADDRESS.

HON. JUSTIN S. MORRILL,

United States Senator for Vermont.

While having some words to which I may not unwillingly give utterance, yet, not until within the past two weeks have I had any expectation of being able, in response to the invitation of January last, to be present on this 25th Anniversary of the passage of the act by which this and other similar colleges have been established in the several states. I am glad to recognize your observance of the day as evidence that these institutions have won some consideration and hold here your cordial respect. I do not feel that the Land-Grant Colleges derive any dignity from the author of the act of Congress to which they owe their birth, however dear to me his reputation may very naturally be supposed to be. The existence of the Colleges can alone be vindicated by the reason that they are not superfluous but indisputably wanted; and that their work is not Utopian but practically of real service to our country. They must derive all of their dignity, not from any real or supposed obstacles encountered in their origin, but from the substantial equivalent they give for the four years of vigorous life surrendered by students to their guidance, and from the lustre reflected upon them by their *alumni*.

The importance of the early training of the horse and the ox has never been lost sight of by mankind; a seven-years' apprenticeship has been thought not too much to acquire the skill of a master mechanic; and the importance of long terms of human training, for the professions of theology, law, medicine, and pedagogy, has for years been held to be indispensable. But these learned professions, important as they are, numerically include only a small fraction, compara-

tively, of the human race; and, yet, it is hardly too much to say, that our ancient colleges and universities mainly provided instruction originally intended exclusively for those who sought to be equipped for these special classes. The great majority of mankind, therefore, lacking perhaps neither ambition nor native ability, were dependent upon the hap-hazard of self-culture, or upon being taught in some brief way in the district-school how to read, write, and cipher. If this uncounted and unrepresented multitude sought to acquire knowledge of more practical value in the voyage of life, they soon found that useful knowledge was often estimated in ancient and richly endowed institutions to mark the humble station of steerage passengers, while the august institutions assumed to provide alone for passengers in the cabin, and, for them—having reluctantly abandoned the discipline of the "birch"—only intellectual discipline, the efficacy of which no one disputes, though no less efficacy may be claimed in behalf of studies for scientific use than for classic ostentation.

An eminent orator of Harvard College, it is reported, once asked, "What is a University?" and answered it by quoting himself as having said thirty years before that, "A University is a place where nothing useful is taught, and a University is possible only where a man may get his livelihood by digging Sanscrit roots."

This may have been sanctioned by the authority of longevity, and certainly appeared thirty years ago as too antiquated and limited for the general wants of American citizens, who claim that in any sphere of life education pays, that all persons, however humble their pursuits, become more valuable by education, more useful to themselves and to the community, and especially so where each one has a visible and responsible share in the government under which he lives.

Something more than a system of liberal education for the class of the so-called "liberal professions" was demanded, and this class, where the greatest number of representatives of the highest culture now exists, should all gladly welcome additions to their own numbers of other learned men. The great army of industrious laborers in the field and workshop, in mines and factories, or on railroads and other business enterprises—ready at any time to give their lives in support of the liberties and union of the nation—had some right to more of sound and appropriate learning that would elevate and especially profit them in their respective future careers.

The school-age of man is far too brief for the acquirement of all knowledge of philosophy, letters and science, and where the dead

languages have the primacy, there is little chance for the sciences, for modern languages, or even for our native tongue, or, indeed, for much, with scholarly thoroughness, in anything else. A mere smattering of the sciences, or of the ancient languages, is no more to be coveted than even the old absolute unity of all college education. The organic law of the Land-Grant Colleges, therefore, made it a leading feature that instruction should be provided, without ostracising anything, in branches related to Agriculture and the Mechanic Arts, upon which, as we all know, the greater number of mankind must rely for their subsistence and happiness, as well as for their growth and reputation among men.

The sciences related to agriculture, tending, among other things, to increase the food products of the world, and the mechanic arts, upon which nations must lean for their independence and defence, should neither be ignored nor assigned to an inferior position. The mastery in these robust branches of learning requires training and brain-power, and does not exclude, though it may diminish attention to those branches of study too often regarded as the only branches where honors can be won, or as the only luxuries of a liberal education. Our late Mr. Motley once said, "Give me the luxuries of life and I will do without the necessaries;" but the wit of the epigram does not conceal its mischievous philosophy, nor excuse its acceptance by educational institutions. The world cannot do without the necessaries of education any more than without the necessaries of life. We can do without champagne and Limburger cheese and we might have done without Dr. Parr and Matthew Arnold, but Americans would have been very unhappy without Dr. Franklin, although, like Shakespeare, he only "knew a little Latin and less Greek." Dr. Parr was a prolific writer, distinguished for the Ciceronian purity of his Latin, and thought his knowledge of Greek second only to that of Porson, but a later generation has denounced "The thread of Parr's verbosity as finer than the staple of his argument," while the same generation promises immortality to the fame of Dr. Franklin. Surely the researches by which scientific knowledge has made its triumphant advances during the present age, or by which many conspicuous inventions have been brought forever into the fruitful and beneficent service of mankind, entitle their authors to as high a measure of respect as has been or can be awarded to any of their contemporaries in other spheres of life, and seems to bring them more nearly related to the Divine Creator of the Universe.

The Land-Grant Colleges were founded on the idea that a higher and broader education should be placed in every state within the reach of those whose destiny assigns them to, or who may have the courage to choose industrial vocations where the wealth of nations is produced; where advanced civilization unfolds its comforts, and where a much larger number of the people need wider educational advantages, and impatiently await their possession. The design was to open the door to a liberal education for this large class at a cheaper cost from being close at hand, and to tempt them by offering not only sound literary instruction, but something more applicable to the productive employments of life. It would be a mistake to suppose it was intended that every student should become either a farmer or mechanic when the design comprehended not only instruction for those who may hold the plow or follow a trade, but such instruction as any person might need—with "the world all before them where to choose"—and without the exclusion of those who might prefer to adhere to the classics. Milton in his famous discourse on education, gives a definition of what an education ought to be, which would seem to very completely cover all that was proposed by the Land-Grant Colleges; and Milton lacked nothing of ancient learning, nor did he suffer his culture to hide his stalwart republicanism. He says: "I call, therefore, a complete and generous education, that which fits a man to perform justly, skilfully and magnanimously all the offices, both private and public, of peace and war."

It was not desired that literary colleges should be superseded, or be in any sense dwarfed, as surely none of these elder colleges or universities could have any reason to complain at the prospect of an augmentation of the number of educated young men, nor could they have any reason to complain but should rejoice when reinforced by an additional corps of teachers—though differently equipped—enlisted in the earnest labor of training men for the noblest ranks of usefulness. There is room for all. Thorough culture is contagious. One educated young man creates an educational epidemic in a whole neighborhood. The only contention is that, in educational institutions of the highest dignity, scholarship in useful learning should stand as equal to scholarship in any other branch of education, and I hope to be pardoned for believing that it will do as much to discipline and to fashion as large a proportion in the hundred of men for distinction in society, and to make them valuable citizens, as well as authorities and ornaments in their respective vocations, entitling them

as much to the honors of a college, as anything to be found in the humanities of a four years' university curriculum.

Within the memory of many of those who now live, the advancement of the useful arts and sciences is supposed to have eclipsed all previous records. Modern text-books of chemistry, botany, entomology, forestry, geology, metallurgy, electricity, mechanics, architecture and zoölogy, would be unknown, if not "all Greek," to most college graduates of fifty years ago; but since the date of the Land-Grant Colleges, other colleges, endowed with sufficient means, have also responded with more or less liberality to the demand for instruction in these branches, leaving many of them elective or optional. The Land-Grant Colleges have, therefore, not only done good work of their own, but have prompted, perhaps, some good work upon the part of others.

It should not be forgotten that the living languages of commercial nations are beginning to be held by a vast majority of our busy world at least of equal value to those which, if the slang may be pardoned, are "as dead as Julius Caesar." The hundreds of thousands of immigrants who come to us annually often learn how to vote before they have learned the American language, and they must be addressed, if addressed at all, in their mother tongue. It would not become me to depreciate the value of the language of Plato, nor that of Cicero; let us bid those in their pursuit God-speed; to what has hitherto been called "the learned professions," wherein the Press should be included, they are undeniably useful, and even the exaggeration of this usefulness may well be excused; but the increased value of time, in the present age of the locomotive, telegraph and telephone, makes them to much more than half of the world a costly acquisition, especially so if we consider how quickly the acquisition often vanishes unless permanently held fast through daily reading by such tireless students as Choate or Gladstone.

Eloquence and scholarship are nowhere more highly appreciated than in America, and nowhere are creditable achievements in arts and sciences more swiftly rewarded. Our country will welcome "bright, particular" stars in whatever constellation they may appear, and give a home to them all.

The establishment in many of our cities of what are known as "Business Colleges" discloses how inadequate have been the means of instruction for those engaged in trade and commerce; and business men everywhere have seemed ready to accept of any remedy offered.

Ruskin says that, in England and Europe, "a man is called educated if he can write Latin verses and construe a Greek chorus." We may here be permitted to ask for something which to many may appear of more practical application and utility, and those who do not agree with us should remember that liberal education is ever tolerant of opposing views, and that there is no power in education of any kind to make an imbecile clever, to give wit to the dull, or genius to the brainless; and it is by no means certain that any kind will make a lazy fellow work; but, a sound education ought to give its recipients the control of all the forces with which they have been blessed by their Creator, and even then eminence is not often won without lifelong earnest work.

Lovingly and religiously devoted to the highest ideals of beauty, the Greeks selected the most perfect of human forms as models upon which to base the creation of their divinities in marble representing Zeus and Minerva, Apollo and Athena; and, through all the rivalry of succeeding ages, no prodigy of genius, no power of art anywhere arises to challenge their royal supremacy. In the construction of temples, theatres and monuments, the Greeks by their consummate devotion to grand public structures appear to have established classic standards of architecture, recognized and revered throughout the civilized world—excepting only those recently infected places where the Queen Anne craze prevails.

But in comparison with the present state of the useful arts and sciences, the great sources of human power, progress, and happiness, it would seem that the ancient Greeks profited little by the early gift of fire from Prometheus.

Certainly it would be too much to look for an advanced state of the sciences among those who devoted science chiefly to the study of politics, or to look for much superiority in the mechanic arts among those apparently destitute of machinery. The treatment of such subjects as mechanics, physics and astronomy, even by Aristotle, was nothing less than a complete failure. They had no idea of the kinship of the Earth to the planetary system; and the Homeric scientific knowledge of astronomy was as scanty as that of the wildest American Indians. The hatred of the Athenian democracy by Plato much disturbed his philosophy, and made him the enemy of the great principles of human freedom which now we regard as essential to the health of all modern political development. When the Apostle Paul encountered "certain philosophers of the Epicureans and of the Stoics" at

Athens, they did not then win more of *his* respect than they do now that of the President of Princeton College; and the New Testament record appears to have left them in the following curt parenthesis: "(For all the Athenians and strangers sojourning there spent their time in nothing but either to tell or to hear some new thing.)" But literary students are expected to find, and no doubt do find, much compensation for any deficiencies in the "sweetness and light" afforded by the study of the logic and rhetoric of their greatest authors.

If I am saying something too much about the Greeks, it is only to help the sons of farmers and of mechanics to dismiss from their minds a prevailing error that an education in institutions where Greek is a non-essential will *to them* prove of unequal rank and value to that of institutions where it is kept constantly at the front, and who, lacking the required preparation for it, or the time required to prepare for it, may be deterred from entrance to any college. Notwithstanding the universal prevalence of our common schools, it is doubtful, with all of our colleges, whether the number of college graduates, in proportion to population, is much greater than it was one hundred years ago. I would have higher learning more widely disseminated.

The great distinction of the ancient Greeks in the force and beauty of their language, in oratory, history, poetry, sculpture, and architecture must be conceded, as it has for ages been a perpetual marvel; but this apparently foremost race of men, within certain limitations, and, in a dark age, unsurpassed in their special intellectual and Olympian development, has been doomed to such an extreme decadence that the world now attaches much less importance to the descendants of Homer, Pericles and Demosthenes than to the descendants of the ancient Germans whom Thucydides described as among the lowest types of barbarians. Doubtless some reason for this decadence may be found in the fact that the ancient Greeks, like our American savages, held industrial employments as entitled to no honor, and unworthy of the worshippers of the Grecian gods and goddesses. Nowhere rejecting their good examples, let us beware of following their "example of unbelief" in labor, or of unbelief in the value of educated labor in promoting general morality and obedience to law as well as in promoting the intelligence, power and beauty of the national character.

We live in a Christian age, and do not ignorantly worship an unknown God. We accept it as a blessing that to Adam it was or-

dained, "In the sweat of thy face shalt thou eat bread." We rejoice in the fact that we live under a republican form of government, where all men are equal before the law, where the income of capital is not wholly dominant, where social conditions are not fixed by heredity, and where the rank of men depends upon their own personally earned and individual merits.

I should be unwilling to accept the language of Alfieri in regard to the "man-plant born in Italy," as to me it appears that, "in no other land is the man-plant born with more inherent vigor than in" America.

I have been, therefore, most earnestly in favor of giving to this "inherent vigor," so largely found in the active pursuits of our country, all the sound learning practically required to develop the intellect and the general character of a great people. Science is always progressive, and never tolerates a sham. The world-wide depression in farming everywhere brings disaster upon the unskilful farmer; and in New England the utmost skill, as well as knowledge of the principles and facts of agriculture, are absolutely necessary to success. I am glad to believe, with Carroll D. Wright, one of Massachusetts' distinguished citizens, "that laborers who are able to employ nothing but muscle are decreasing, and the status of unskilled labor is likely to be much improved during the next generation."

The Land-Grant Colleges are now more than equal in number to the states of the Union, and light up some of the formerly destitute portions of our country. In eight states where the land fund appeared too limited for an independent institution, colleges have been successfully grafted upon the healthy stock of some existing literary institution, and in no instance has such a junction bred intestine and internecine war. Most of the states have spontaneously aided the colleges by furnishing necessary buildings, and also by very liberal annual appropriations. Generous local bounties from towns and from private individuals also, have often been received. With hardly an exception these colleges are doing excellent educational work. It is a gratification to find that the largest endowment in any state has been husbanded most successfully, having fallen into very astute and worthy hands, and has served, with other large bounties, to build up the most complete and prosperous of all these institutions. I must also add that Cornell University, to which of course I refer, has been fortunate in her teachers as well as in her large-handed benefactors, and, whenever any special want has been developed, some

generous friend has been ready to pour thousands after thousands in to her lap.

The prescribed military instruction of these colleges, for each of which a professor is now detailed from the United States army, furnishes that measure of theoretical and practical knowledge necessary for organizing and drilling companies in any future emergency of our country, and its essential importance in a land where a merely nominal standing army is maintained, can hardly be over-estimated, especially if the officer detailed highly values his profession and has executive ability. As an incident, the drill offers a healthful and permanently beneficial discipline to students in promoting physical development and a manly bearing, incomparably superior to that of the gymnasium, or to that of any other athletic exercise or recreation.

In the first argument made by me in 1858 in behalf of the Land-Grant Colleges, I pointed out the fact that there was going on an annual deterioration of the soil, as it appeared by the decennial census reports, showing a less and less number of bushels of cereals produced per acre throughout nearly all of the states. This deterioration has not been arrested, though more vigilant attention is now given to the subject, and it is to be feared will not be wholly arrested until the scalping system of farming, or of cropping and returning nothing, shall no longer be profitable upon old homesteads that are to be abandoned with the hope of a future continuance of the system upon the present limited prairies of the West. In various portions of Europe they are giving far more liberal aid to similar institutions than that which has been accorded in the United States; and they are there retaining the maximum fertility of their soil. There is no subject to our people of profounder concern, or of more far-reaching importance.

While it is true that the great profession of the law is most apt to qualify men for prominent public positions, it is also true that the annual supply in the legal profession is supposed to exceed the demand, and that professional advancement is often provokingly slow; but we have it from the best authority that there is no overproduction in the Land-Grant Colleges, that few of their graduates remain long unemployed after leaving college. They are found in shops and on farms, and their services are sought after as teachers, as engineers, surveyors, foremen of shops and farms, superintendents of mines and manufactories, and frequently they are called to lucrative posi-

tions even before they have finished their studies. This enables them to enter more promptly into prosperous life; and many young ladies may be glad to know that it all tends to encourage early marriages.

These colleges are thoroughly American, and for all time will be entrusted with work annually increasing in its importance. Our artisans are to contest with the skill and wealth of many nations, and our farmers are sorely pressed by the competition of agricultural products which cheap and rapid communication pushes to the front in all markets both at home and abroad. To successfully withstand this formidable rivalry, our countrymen need, and it is hoped will here find, that fundamental instruction which is founded on the widest and best experience of mankind.

Descendants as we are of the heroes who struck the blow for the National Independence of '76, proud of the production of a written Constitution which is esteemed by the enlightened statesmen of the world as the foremost form of free government hitherto devised by man, cheered by the mile-stones which mark the progress of our first century, we may well feel, as Webster felt, that "the past is secure"; but Americans, however, cannot afford forever to have no other ambition than to reach the goal once occupied by a people, however distinguished, of past ages. For "to whomsoever much is given, of him shall much be required," and the New World has been given to us forever as an inalienable possession, where we are not only to bridge great rivers and tunnel mountains, but to "make the wilderness and solitary places glad." All the centuries of the future are in reserve, under Providence, for the men of this great continent to make their own history, and, it is to be devoutly hoped, in some measure, to eclipse and take the lead of other nations, old or young, in worthy achievements in all the arts of peace, and in all the glories of manhood's ripest culture.

HISTORICAL ADDRESS.

HON. CHARLES G. DAVIS.

Our learned friend who has just addressed you, has discoursed upon the philosophy of agricultural education, and its progress in the old world. It is my humbler province to present facts concerning its advancement in our own country.

That history and human life present wonderful contrasts, great changes, and striking parallels are trite remarks; trite because so true, and so instructive, and because they present themselves to the observing mind, in tracing every subject of human interest.

In 1624 Gov. Edward Winslow brought to Plymouth in the Charity three heifers and a bull, "which," says the historian, "were the first neat cattle that came into New England." Soon after in 1624 James Shirley, one of the London merchants who aided the Pilgrims, sent over a cow for the poor of the Colony; and other cattle came in the Anne, and in the James, often called in the records, the "Jacob." In 1627 a number of goats were purchased which were part of a cargo of a ship cast away at Sagadehock; and in the same year, May 22nd, cattle and goats of the common stock were equally divided by lots, each lot being apportioned to thirteen persons.*

*The *first* lot consisted of "4 black heifers and 2 she goats"; the *second* of "the great black cow which came in the Ann, the lesser of the 2 steers, and 2 she goats"; *third*, "the red cow, to which they must keep her calf this year, being a bull, and two she goats"; *fourth*, "one of the 4 heifers which came in the Jacob"; *fifth*, „one ofthe 4 heifers which came in the Jacob, called the blind heifer, and 2 she goats"; *sixth*, "the lesser of the black cows which came in the Ann, and the biggest of the 2 steers, with 2 she goats"; *seventh*, "a black weaning calf, to which is added the calf of this year to come of the black cow, and 2 she goats"; *eighth*, "a red heifer which came of the cow which belongeth to the poor of the Colony, the persons nominated to have half the increase, the other half with the old stock to remain for the use of the poor; also 2 she goats"; *ninth*, "one of the four black heifers that came in the Jacob, called the Smooth Horned Heifer, and 2 she goats"; *tenth*, "an heifer of last year and 2 she goats"; *eleventh*, "an heifer of last year which was of the great black cow brought in the Ann and 2 she goats"; *twelfth*, "the great white back cow brought over with the *first* in the Ann and 2 she goats." New England Memorial, Appendix, note L.

The last assignment raises a doubt whether the first cattle did not come over in the Anne, upon which question antiquarians differ. But they agree that Gov. Winslow brought the first cattle.

The poet, Longfellow whose fancy never recognized a close relationship to fact, in his "Courtship of Miles Standish" pictures Priscilla Mullens, the bride, as performing her wedding journey to the home of John Alden on a white bull. Longfellow here made a bull in every sense of the word. In the first place, at the time of John Alden's marriage there were no cattle in New England, and secondly, the first cattle imported were of a dark or red variety. The poet's poetic license was a "white lie" indeed. This bull of Longfellow's must be the same which crossed the sea with Europa on his back on her wedding journey with Jupiter. It is probably kept by poets for wedding journeys.

In 1623 the Colony of Plymouth was so straitened by lack of provision that it was reduced to a pint of corn, and lived for months without bread. Game and fish furnished their principal sustenance; and they gave thanks that they "could suck of the abundance of the sea, and of the treasures hidden in the sand." The first comers had no plows. Their implements were scanty, poor, clumsy and heavy. They at first used a shell for a hoe as the Indians did. Cast steel had not then been invented. Pumpkins, squashes, and tobacco were unknown to them, and potatoes were a luxury just introduced into England. This was the agriculture of New England two hundred and sixty years ago.

What need of worrying you with statistics of what it is to-day! The contrast is complete enough if I tell you that by the last census before the establishment of our College, the agricultural products of Massachusetts alone were thirty-two millions of dollars, and the value of her live stock over twelve millions. We have besides repaid the debt to England by the export of sheep, and cattle, and the fast trotting horse, and, besides the finest agricultural implements in the world, have added the sewing-machine to every farmer's fireside, improved every loom in the world, and presented its inhabitants with the telegraph and the telephone, and the fastest sailing vessels which have yet been known.

From the earliest settlement of this country to the presidency of Washington there is no record of any active efforts to improve our agriculture, except by a few feeble attempts at agricultural journals, and scattering agricultural associations generally of a social character.

On the 7th December, 1796, Washington in his Annual Message, at the Second Session of the Fourth Congress, read these words:

"It will not be doubted that with reference either to individual or national welfare, agriculture is of primary importance. In proportion as nations advance in population, and other circumstances of maturity, this truth becomes more apparent, and renders the cultivation of the soil more and more an object of public patronage. Institutions for promoting it grow up supported by the public purse; and to what object can it be dedicated with greater propriety. Among the means which have been employed to this end, none have been attended with greater success than the establishment of Boards, composed of public characters, charged with collecting and diffusing information, and enabled by premiums, and small pecuniary aid, to encourage and assist a spirit of discovery and improvement. This species of establishment contributes doubly to the increase of improvements, by stimulating to enterprise and experiment, and by drawing to a common centre the results everywhere of individual skill and observation, and spreading them thence over the whole nation. Experience accordingly has shown that they are very cheap instruments of immense national importance.

I have heretofore proposed to the consideration of Congress the expediency of establishing a National University, and also a Military Academy."

The propositions for a National University and a National Board of Agriculture, were referred to a Committee, and no report so far as I can learn was ever made upon the subject. The Military Academy became an Institution. Life was given to that which teaches men to kill their fellow men, but no encouragement to that science by which all men live. Here again is presented a striking contrast in our history. In 1817, to the honor of Massachusetts be it stated, the Berkshire Agricultural Society, under the lead of Elkanah Watson, presented a memorial to Congress in favor of a National Board of Agriculture, by the Hon. John M. Hurlbut, their representative. Mr. Hurlbut was Chairman of a Select Committee on the subject, and reported in its favor; but although sustained by others with ability, the project was defeated by an overwhelming vote, owing to the constitutional scruples of some, views of expediency by others, and entire indifference and want of appreciation of the magnitude and importance of the world's most vital interest. Mr. Hurlbut stated that he was met with sneers and ridicule, particularly from Southern

members for urging this subject. The same year Mr. Madison wrote, "I have never taken into particular consideration the expediency or the best plan of such an institution, being among those who do not view it as within the powers vested in the General Government." And now what a change! We have had an Agricultural Department of the National Government in the Patent Office since 1837, or thereabouts, and afterwards what is known as a Commissioner of Agriculture; and during the last winter the Democratic House of Representatives passed a bill establishing an Agricultural Department with a Secretary who was to be a member of the President's Cabinet. What has become of Mr. Madison's constitutional scruples?

In the Patent Office report for 1847, Mr. Charles L. Fleischmann made the first elaborate report on Agricultural Schools which he had visited abroad. During the last century the earliest Society for promoting Agriculture was established in Philadelphia, in 1785, and seven years after, the "Massachusetts Society for promoting Agriculture," was incorporated, March 7, 1792. The New York Agricultural Society was incorporated the following year. I learn that an Agricultural Society was also incorporated in South Carolina during the last century.

In 1803 the "Western Society of Middlesex Husbandmen" formed in 1794 was incorporated, with a provision that members of the Massachusetts Society should be honorary members. A voluntary Agricultural Association was established at Sturbridge in 1799, one at Kennebec in 1791 and one in Brookfield in 1807; and some other voluntary Agricultural Associations had doubtless been formed in New York, and Massachusetts previous to 1807. Meanwhile in 1801, a suggestion was made by an anonymous writer to the Massachusetts Society that a fair be held on Cambridge common in May and October, and bounties given for certain articles. This plan was not to have shows merely, but stated open markets for the sale of agricultu-

NOTE.—Among the earlier contributors to agricultural education and interests I should not omit to mention the New York Horticultural Society, organized in 1818, which was the first society of its kind in the United States; the Pennsylvania Horticultural Society, organized in 1827, and incorporated March 24, 1831. The American Pomological Society, first known as the American Congress of Fruit Growers, was organized in 1848, and the Mass. Horticultural Society in 1829.

NOTE.—Nor do I overlook the great good which the various agricultural journals of the country have done in exciting the interest of the people in agricultual knowledge. I can only mention the "American Farmer," published in Baltimore in 1819, and ever since, which was the first regular agricultural journal published in this country, and the "New England Farmer," which originated in 1822. The later journals are too numerous to mention.

ral products. The same year 1801 brought forth a suggestion before the Massachusetts Society for the permanent endowment and support of a professorship of Natural History, and a Botanic Garden at Cambridge, which were in fact established in 1804, whilst before 1804 the Massachusetts Society had commenced the award of premiums for agricultural products, and had entered upon that generous and patriotic career of encouragement to our farmers which has done so much for the agriculture of New England, and the improvement of its stock.

It was in 1807 that a new era in the progress of agricultural education dawned in New England, which at first little noticed, was destined to mark an eventful change, and to hasten the progress to an agricultural development. Up to this time so far as can be learned, no agricultural society had thought of a "cattle show" with premiums to be awarded in public, but the societies had confined themselves to printed publications, and to awards for essays and field crops, and for the importation of the best sheep. In the autumn of 1807 Mr. Elkanah Watson, a native of Plymouth and a direct descendant of Gov. Winslow who in 1624 had brought the three heifers and the bull to Plymouth, procured the first pair of merino sheep which had been introduced into Berkshire, and perhaps the whole Commonwealth. Col. Humphreys of Connecticut, then late minister to Spain, had imported 75 ewes and 27 rams in 1802, and one Seth Adams had the same year claimed of the Massachusetts society a premium for two merino sheep imported from France. But the records of the society do not show that any premium was awarded Mr. Adams, nor indeed that they were ever in the state.

Mr. Watson gave notice of an exhibition of his two sheep on the public square in Pittsfield. He wrote that "many farmers and even females were attracted to this first novel and humble exhibition. From this lucky incident I reasoned thus: If two animals are capable of exciting so much attention, what would be the effect of a display on a large scale of different animals? The farmers present responded to my remarks with approbation. We thus became acquainted, and from that moment to the present have agricultural fairs and cattle shows, with all their connections, predominated in my mind." On the 1st of August, 1810 an appeal drawn by Mr. Watson and signed by 26 persons appointed an exhibition of stock on the 1st of October. This effort was successful, and resulted in a charter of the Berkshire Agricultural Society the ensuing winter of 1811. In the September

following a formal and extended festival was held with "a procession of 69 oxen drawing a plow held by the oldest man in the county, a band of music, the society bearing appropriate ensigns, each member decorated with a badge of two heads of wheat in his hat, and the officers three heads secured by a green ribbon." Mr. Watson as president delivered the address and awarded the premiums which amounted to seventy dollars only.

At the next exhibition in 1812 the premiums were $208. It seems now strange, though illustrative of the conservative tendency of human nature, and distrust of new things, that "valuable premiums were offered for articles of domestic industry; the day arrived; a large room was prepared; many superior articles of domestic manufacture, especially woollen and linen, were exhibited; but no female appeared to claim the premiums. Native timidity and the fear of ridicule restrained them. No one dared to be the first to support the new project." How did the original mind, so full of resources, of Mr. Watson surmount the difficulty? "I left the hall," he says, "and with no small difficulty prevailed on my good wife to accompany me to the house of exhibition. I then despatched messengers to the ladies of the village announcing that she waited for them at the cloth show. They hastened out. The farmers' wives and daughters, who were secretly watching the movement of the waters, also sallied forth, and the hall was speedily filled with female spectators and candidates for premiums."

I have thus dwelt more at length upon the circumstances of the birth of the Berkshire "cattle show" than might seem necessary, not because it presents a curious parallel with the first cattle show on Plymouth Rock, but because the results of both present such striking changes and contrasts. The little one has become ten thousand. The grain of mustard seed overshadows the land. I verily believe that the social influences, the associate power, the joint sympathies and desires and the educational wants, aye, and the public influence on public men, of the agricultural societies which have followed this little show of two forlorn, imported sheep under the elm at Pittsfield, were moving forces without which the People, the Great Creators would never have blown the breath of life into the Board of Agriculture and the Agricultural College. If geese saved Rome why should not two sheep save agricultural education? But it is not the trifle, as such which saves, and that by accident as in the case of

Rome, but the idea that the trifle may enforce, which generally saves or benefits the world.

"A small drop of ink
Falling like dew upon a thought produces
That which makes thousands, perhaps millions,
Think."

In 1849 Hon. M. P. Wilder in an address before the Norfolk Agricultural Society broached the subject of an Agricultural College, and the next year a bill to establish an Agricultural College and an experimental farm passed the Senate of Massachusetts unanimously, but was defeated in the House. A board of commissioners was then created, consisting of Mr. Wilder, Edward Hitchcock, Samuel A. Eliot, Thomas E. Payson and Eli Warren, and in 1851 their report with an elaborate account of the agricultural schools in Europe, visited by Prof. Hitchcock was made to the Legislature. It commenced by the remark that "the first seed ever planted was the first effort of civilization," and stated that no institution expressly for instruction in agriculture had then been established either in this Commonwealth or in any other state. No immediate action resulted from their recommendations. In 1852 the Massachusetts Board of Agriculture was established. Mr. Wilder was persistent, and in 1856 obtained a charter of "The Trustees of the Massachusetts School of Agriculture," and during 1856 he also acquired from Congress a charter of the United States Agricultural Society, which was opposed in the Senate by Jefferson Davis on the ground, which now seems absurd, that Congress had no power to create corporations. In 1860 a committee of the Board of Agriculture, consisting of Richard S. Fay, Marshall P. Wilder, and Ex-Lieut.-Governor Simon Brown made an elaborate report upon agricultural education, and the Board caused to be published for the use of schools, a "Manual of Agriculture," of which George B. Emerson and Charles L. Flint, its accomplished secretary, were the authors. All this information, showing however a difference of opinion among leading agriculturists, was before the public; and the farming community had become more alive to the necessity of more scientific and exact knowledge of agriculture than ever before, when Hon. Justin S. Morrill's bill was introduced by him in 1857, in the National House of Representatives, supported by numerous petitions of the people. It was passed and vetoed by President Buchanan in 1860; and the pendency of that bill, and a question of its location in Springfield or elsewhere had delayed action upon

the charter of the Trustees of the Massachusetts School of Agriculture. That charter had passed into other hands. Mr. Morrill's bill was dead. In the winter of 1861 a renewed effort was made by Mr. Wilder, supported by petitions from all parts of the Commonwealth for a State Agricultural College. Hearings were had before the committee of education, and great pressure was brought to bear upon both sides. The committee hesitated, and finally "let I dare not wait upon I would" by delaying the question. This was accomplished by reporting a resolve, Chap. 98, of the Resolves of 1861, authorizing Gov. Andrew to appoint a commission of three persons to serve without pay, to report a plan for an Agricultural College. The title of the Resolve was misleading, "Resolve in favor of the establishment of an Agricultural School or College." It was generally understood that this course was taken to get rid of the question without a decision on its merits. We had light enough. All these reports were before the people. With this knowledge the only way to organize a college was to organize. as Mr. Greeley said of specie payments, that the best way was to resume. No detailed plan of a college could be made beforehand, especially if there were no indications what scale of a college was desired. Plans enough were already before the public. Mr. Thomas Plunkett of Berkshire, Increase Newton of Worcester, two elderly gentleman, and your historian here were appointed on the commission. The minds of neither of my seniors had ever been directed to the subject, and they met with a feeling that the action of the Legislature was a feint, and that nothing was expected of them. We were advised not to report at once. Mr. Morrill's bill would be again offered under Mr. Lincoln, and if it passed, the mind of the Legislature would be forced to entertain the subject, and make full inquiry. We met once, when from the fact that I was at that time an Overseer of Harvard College, I was delegated to confer with Mr. Felton its president, and inquire officially whether any arrangement could be made or suggested for an Agricultural College, aided by the Bussey fund. Mr. Felton took a few days to reply, and finally answered very courteously that Harvard College took no interest in the subject. We met a second time, when I reported concerning Harvard College, and upon some questions as to the Smith fund at Northampton. I have never again had the pleasure of seeing either of these gentlemen before their death.

Meanwhile as I have stated, on Dec. 14, 1857 Hon. Justin S. Morrill, then a National Representative from Vermont, introduced a

bill, to grant land scrip to the several States and Territories at the rate of 20,000 acres for each Senator and Representative in Congress, for the endowment of a college in each, to teach such branches of learning as are related to agriculture and the mechanic arts. His idea was to bring as cheaply as possible to the farmer and mechanic, such education as is necessary to their several pursuits in life, to recognize agriculture as at least a leading, if not the chief interest of a state.

As the Spaniards when they took possession of new countries always raised the standard of the Cross, an emblem to die by, so did Mr. Morrill with enlarged foresight resolve to plant a standard of agricultural education on the hilltop of every state like a beacon light to direct men how to live. His bill was referred to the Committee on Public Lands, who delayed their report four months to April 15, 1858, and then reported against it. Mr. Morrill enforced his views with elaborate and eloquent arguments, from which if there were time I should be pleased to quote to-day. After many delays the bill passed fourteen months after it was offered, but was vetoed by President Buchanan on the *29th* of Feb. (according to the Congressional Record), 1859, for various reasons: 1st because it was unconstitutional; 2nd because the government could not afford the outlay; 3rd because it would injure the new States by preventing settlements; 4th because the law would be of doubtful benefit; 5th because it would weaken existing colleges; 6th because this vast gift from the government would tend to alienate the states from the national government. Mr. Morrill made a full and triumphant reply to this veto, but the veto was sustained. Mr. Morrill persevered. In December, 1861 he again offered his bill, providing for 30,000 acres for each Senator and Representative, which was also referred to the Committee on Public Lands, which held it until the 29th of May, 1862, when Mr. Potter of Wisconsin reported against it, and it was referred to the committee of the whole. Meanwhile before the committee of the House had reported adversely, on the 2nd of May, Hon. Benjamin Wade of Ohio offered a bill of the same purport, which was referred to the Senate committee on Public Lands, of which Senator Harlan of Iowa was chairman. Promptly on the 14th of May, before the House committee had reported, he reported the bill with slight amendments, and on the 10th of June it passed the Senate without strong opposition. The next day the bill was sent to the House, and against the opposition of the Committee on Public Lands passed on

the 19th of June, 1862, 25 years ago last Sunday; and Abraham Lincoln attached his name on the second of July following.

Thus did Mr. Morrill by his industry and persistency, like Elkanah Watson and Marshall P. Wilder, succeed in his great project. During peace under Washington. agriculture could not obtain even recognition by the government, but the arts of war were encouraged, I do not say improperly encouraged. In 1862 under Lincoln, in the midst of a civil war in which more forces were engaged, more blood shed, at a greater waste of treasure than were ever before known, Mr. Morrill's mind still turned from the work of destruction to the work of production which sustains men and nations. without which there would be no society, no commerce, no manufactures, no trades, and populous life of man could not exist. Taking the lead in drawing laws for raising revenue by internal taxes and by tariffs, he found time in the midst of war, to encourage the arts of peace. He believed that "Ceres should be counted among the Gods of Olympus."

And now, my friends, should you ask me to epitomize the progress of agricultural education in this country, I should name Watson, Wilder and Morrill! *

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*General United States Act in Relation to Agricultural Colleges. (United States Statutes, Vol. 12, Chap. 130, P. 503).

An Act donating Public Lands to the several States and Territories, which may provide Colleges for the benefit of Agriculture and the Mechanic Arts.

Be it enacted by the Senate and House of Representatives of the United States of America in congress assembled: That there be granted to the several States, for the purpose hereinafter mentioned, an amount of public land, to be apportioned to each State a quantity equal to thirty thousand acres for each Senator and Representative in congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty: *provided*, that no mineral lands shall be selected or purchased under the provisions of this act.

SEC. 2. *And be it further enacted:* That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections, not less than one quarter of a section; * * * said scrip to be sold by said States and the proceeds thereof applied to the uses and purposes prescribed in this act, *and for no other use or purpose whatsoever:* * * *

SEC. 4. *And be it further enacted:* That all moneys derived from the sale of the lands aforesaid, by the States to which the lands are apportioned, and from the sales of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or some other safe stocks, *yielding not less than five per centum upon the par value of said stocks;* and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in section fifth of this act), and the interest of which *shall be inviolably appropriated by each State which may take and claim the benefit to this act, to the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States*

Mr. Morrill's bill became a law July 2nd, 1862, and during the Legislative session of 1863, there were presented the serious questions of the acceptance of the Act by Massachusetts, and of the incorporation of the Massachusetts Agricultural College. Mr. Erastus O. Haven was chairman of the joint committee to whom these questions were submitted. The committee entered upon a most thorough and candid inquiry, and it is due to that committee that it should be stated that a more faithful, and fair investigation was never had. Early in the session Gov: Andrew had assembled at his house a levee of the leading men upon both sides of the question, and advocated with all his power the association of the college with the Bussey institution which was or was to be a part of Harvard College, but had not then been opened as a school. Prof. Agassiz was there urging the annexation of the Agricultural College to Harvard, but no members of the corporation were present, and there was no evidence that its authorities took any interest in the question, except that its president, Rev. Thomas Hill, who had acceded to the office in October, 1862, expressed a desire to have the college so located in the act of incorporation. The disposition of a large majority of the gentlemen present

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may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

SEC. 5. *And be it further enacted:* That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts:

FIRST. If *any portion of the fund invested, as provided by the foregoing section, or any portion of the interest thereon, shall, by any action or contingency, be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished;* and the annual interest shall be regularly applied without diminution to the purposes named in the fourth section of this act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this act, may be expended for the purchase of lands for sites or experimental farms, whenever authorized by the respective legislatures of said States.

SECOND. *No portion of said fund, nor the interest thereon, shall be applied, directly or indirectly, under any pretence whatever, to the purchase, erection, preservation, or repair of any building or buildings.*

THIRD. Any State which may take and claim the benefit of the provisions of this act shall provide within five years, at least not less than one college, as described in the fourth section of this act, or the grant to such State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold, and that the title to purchasers under the State shall be valid.

FOURTH. *An annual report is to be made regarding the progress of each college, recording any improvements and experiments made, with their cost and results, and such other matters, including State industrial and economical statistics, as may be supposed useful; one copy of which shall be transmitted by mail free, by each, to all the other colleges which may be endowed under the provisions of this act, and also one copy to the Secretary of the Interior.*

SIXTH. No State while in a condition of rebellion or insurrection against the government of the United States shall be entitled to the benefit of this act.

Approved July 2, 1862.

was with Gov. Andrew, whilst the smaller number, more particularly in sympathy and alliance with farmers of the Commonwealth, said little, but concluded to "bide their time."

The whole subject was finally before the committee, which had many hearings, including evening sessions. Mr. Wilder, Mr. Flint and I were attached to the Board of Agriculture, and were appointed a committee to express the views of the Board, that the Agricultural College for farmers' sons should be located in the country, and not in nor near a great city. We feared its temptations, we asked for pure country air, we painted a scene which would be purely rustic, and where the time and attention of the students would not be diverted by the attractions of a city. We felt that we represented the opinion of the farmers; and surely never did men plead for a cause in which they had no personal interest with an earnestness, and confidence, it would be unbecoming to say an eloquence, more effective than we prayed the committee not to decide the location in their bill. We knew that the first impression of the committee, from the position of Gov. Andrew, and the pressure of leading men, city men, not particularly interested in farming, was in favor of Harvard College. But we satisfied them that it was a mistake that Harvard College, as a corporation, took any interest in the subject. It had made no effort to launch the Bussey Institution. It is now open with one to three students, and never I think more than nine.

The committee were fully converted, and reported the act of incorporation, which became a law April 29, 1863, whilst the acceptance of the congressional grant of 30,000 acres for each Senator and Representative in Congress was declared eleven days before. Massachusetts claims to be the first state to accept the act. Fourteen gentlemen, one from each county in the state, were named in the charter. These names were inserted by the committee without the knowledge of, and without consultation with any man named therein. These names furnish striking proof how thoroughly the committee were convinced that the college should not be located near the city, because so many of the incorporators had committed themselves before the committee against the Harvard College connection, including the corporators who resided in the counties which included the locations of Harvard and the Bussey farm!

The Joint Special Committee consisted of the following members:

SENATORS.

Erastus O. Haven, Middlesex, William D. Swan, Norfolk,
George Dwight, Hampden.

REPRESENTATIVES.

A. A. Ranney, Boston, Charles Nowell, Boston,
Stephen H. Williams, Roxbury, Thomas White, Randolph,
J. L. S. Thompson, Lancaster, Samuel Smith, Jr., Granby,
P. Francis Wells, Cambridge.

This committee acted also under the following resolve:

RESOLVE AUTHORIZING CERTAIN EXPENDITURES BY THE COMMITTEE ON AN AGRICULTURAL COLLEGE.

Resolved, That the joint special committee to whom was referred so much of the governor's address as relates to an agricultural college, the society of natural history and the institute of technology, have authority to invite conference with parties interested, or who may impart valuable information, and also may visit any localities or institutions, and incur other needful expenditures to an amount not exceeding three hundred dollars. *Approved February 17, 1863.*

Chap. 166.—An Act to provide for the reception of a grant of Congress, and to create a fund for the promotion of education in agriculture and the mechanic arts.

Be it enacted, etc., as follows:

SECTION 1. The Commonwealth of Massachusetts hereby accepts the grant offered to it by the United States, as set forth and defined in the act of congress entitled "An Act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts," said act being chapter one hundred and thirty of the statutes of the United States, passed at the second session of the thirty-seventh congress, and approved by the president July second, in the year eighteen hundred and sixty-two, upon the terms and conditions contained and set forth in said act of congress; and the governor of the Commonwealth is hereby authorized and instructed to give due notice thereof, to the government of the United States.

SECTION 2. The governor is hereby authorized and instructed to receive, by himself or his order, from the secretary of the interior, or any other person authorized to issue the same, all the land scrip to which this Commonwealth may be entitled by the provisions of the before-mentioned act of congress.

SECTION 3. The governor, with the advice and consent of the council, is hereby authorized and instructed to appoint a commissioner, whose duty it shall be to locate, without unnecessary delay, all the land scrip which may come into the possession of the Commonwealth by virtue of this act, and to sell the same from time to time, on such terms as the governor and council shall determine. Said commissioner shall give a bond, with sufficient sureties, in the penal sum of fifty thousand dollars, to be approved by the governor and council, that he will faithfully perform the duties of his office, and shall render full and accurate returns to them, at the end of every six months, or oftener if required to do so by them, of his proceedings under this act. The compensation of said commissioner shall be fixed by the governor and council, and shall be paid out of the treasury of the Commonwealth, and the governor is hereby authorized to draw his warrants therefor.

SECTION 4. All moneys received by virtue of this act, for the sale of land scrip, shall be immediately deposited with the treasurer of the Commonwealth, who shall invest and hold the same in accordance with the fourth section of the afore-mentioned act of congress. The moneys so invested shall constitute a perpetual fund, to be entitled the Fund for the Promotion of Education in Agriculture and the Mechanic Arts, which shall be appropriated and used in such manner as the legislature shall prescribe, and in accordance with the said act of congress.

SECTION 5. This act shall take effect upon its passage.

Approved April 18, 1863.

Of the incorporators since we last met here, Marshall P. Wilder, the father of agricultural education in New England, the enthusiastic, generous, persistent, mild mannered, peace making, patriotic gentleman, whose love of nature and nature's God enlarged his whole being,

"Having won
The bounds of man's appointed years, at last,
Life's blessings all enjoyed, life's labors done,
Serenely to his final rest has passed.
And we are glad that he has lived thus long,
And glad that he has gone to his reward;
Nor can we deem that Nature did him wrong
Softly to disengage the vital cord,
For ere his hand grew palsied, and his eye
Dim with mists of age, it was his time to die."

ACT OF INCORPORATION. (1863. Chap. 220). AN ACT TO INCORPORATE THE TRUSTEES OF THE MASSACHUSETTS AGRICULTURAL COLLEGE.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Marshall P. Wilder, of Dorchester; Charles G. Davis, of Plymouth; Nathan Durfee, of Fall River; John Brooks, of Princeton; Henry Colt, of Pittsfield; William S. Southworth, of Lowell; Charles C. Sewall, of Medfield; Paoli Lathrop, of South Hadley; Phineas Stedman, of Chicopee; Allen W. Dodge, of Hamilton; George Marston, of Barnstable; William B. Washburn, of Greenfield; Henry L. Whiting, of Tisbury; John B. King, of Nantucket, their associates and successors, are hereby constituted a body corporate, by the name of *[the Trustees of] the Massachusetts Agricultural College, the leading object of which shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life; to be located as hereinafter provided; and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said trustees shall have power and authority from time to time, as occasion may require, to elect a president, vice-president, secretary and treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; †[and also to remove any trustee from the same corporation, when, in their judgment, he shall be rendered incapable, by age, or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and, whenever vacancies shall occur in the board of trustees, the legislature shall fill the same]: *provided*, nevertheless, that the number of members shall never be greater than fourteen, exclusive of the governor of the Commonwealth, the secretary of the board of education, the secretary of the board of agriculture, and the president of the faculty, each of whom shall be, *ex officio*, a member of said corporation.

*[*1. Amended by Chap. 223, Sec. 1, Acts of 1864.*

The corporate name of "The Trustees of the Massachusetts Agricultural College" shall hereafter be "The Massachusetts Agricultural College."

†[*2. Amended by Chap. 50, Resolves of 1884.*

* * * the power of appointment of members of said board of trustees, and the powers of removal defined in section one of chapter two hundred and twenty, of the acts of eighteen hundred and sixty-three, shall be hereafter exercised by the governor with the advice and consent of the council, instead of said board; and said board during the cur-

Hon. John Brooks of Princeton was a farmer, enthusiastic in his calling, who had long been a member of the Board of Agriculture. He died before the college was organized. Paoli Lathrop of South Hadley, was also a successful farmer who died in 1872. Allen W. Dodge of Hamilton, who died in 1878, was long connected officially with the Essex society, and was treasurer of the county. Rev.

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rent year shall, by lot, divide the elected members thereof into seven classes of two members each, of whom one class shall vacate their office January first, eighteen hundred and eighty-five, and one class on the first day of January in each year thereafter; and such action shall be certified by the board to the governor and council; and appointments to fill the vacancies so created shall be made for the term of seven years.

SEC. 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the trustees to convene at such meetings; and also, from time to time, to elect a president of said college, and such professors, tutors, instructors and other officers of said college as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities and tenures of their several offices.

And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said college; and also, to make and ordain as occasion may require, reasonable rules, orders and by-laws not repugnant to the constitution and laws of this Commonwealth, with reasonable penalties, for the good government of the said college and for the regulation of their own body, and also to determine and regulate the course of instruction in said college, and to confer such appropriate degrees as they may determine and prescribe: *provided*, nevertheless, that no corporate business shall be transacted at any meeting unless one-half, at least, of the trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal or mixed, and may prosecute the same to final judgment and execution, by the name of the Trustees of the Massachusetts Agricultural College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal: *provided*, that the clear annual income of the same shall not exceed thirty thousand dollars.

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the uses of said college in such manner as shall most effectually promote the objects declared in the first section of this act, and as may be recommended from time to time by the said corporation, they conforming to the will of any donor or donors, in the application of any estate which may be given, devised or bequeathed, for any particular object connected with the college.

SEC. 5. The legislature of this Commonwealth may grant any further powers to, or alter, limit, annul or restrain, any of the powers vested by this act in the said corporation, as shall be found necessary to promote the best interests of the said college; and more especially may appoint and establish overseers or visitors of the said college, with all necessary powers for the better aid, preservation and government thereof. *[The said corporation shall make an annual report of its condition, financial and otherwise, to the legislature at the commencement of its session].

*[*1. Amended by Chap. 378, Acts of 1871.*

"The college shall furnish to the governor and council a copy of the annual report of its operations."

SEC. 6. The board of trustees shall determine the location of said college in some suitable place within the limits of this Commonwealth, and shall purchase, or obtain, by gift, grant, or otherwise, in connection therewith, a tract of land containing at least one hun-

Charles C. Sewall was also a farmer. Hon. George Marston, District Attorney of the South Eastern District, and afterwards Attorney General, took great interest in the college. He resigned in 1878, and has since deceased. Dr. Nathan Durfee was an extensive farmer, and from 1864 to 1876 treasurer of the college. All these and the lamented Governor Andrew, out of the original board of trustees, are no longer among the living. Henry Colt of Pittsfield, a manufacturer, and Phineas Stedman of Chicopee, an enterprising farmer, are the only surviving members who remain upon the board, whilst the terms of Charles G. Davis of Plymouth, and Prof. Henry L. Whiting have expired by limitation of law under the Resolve of 1884. Of the other original members Mr. Southworth of Lowell resigned in 1864, and has since died, and was succeeded by Hon. Henry F. French. Gov. Wm. B. Washburn resigned in 1878, and was succeeded by Hon. James S. Grinnell of Greenfield. Dr. John B. King never accepted the trust, and is still living at Nantucket. Charles L. Flint resigned in 1880, and was followed by Hon. John E. Russell, as Secretary of the Board of Agriculture.

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dred acres, to be used as an experimental farm, or otherwise, so as best to promote the objects of the institution; and in establishing the by-laws and regulations of said college, they shall make such provision for the manual labor of the students on said farm as they may deem just and reasonable. The location, plan of organization, government and course of study prescribed for the college shall be subject to the approval of the *[legislature].

*[*1. Amended by Chap. 223, Sec. 2, Acts of 1864.*

"governor and council."

SEC. 7. One-tenth part of all the moneys which may be received by the state treasurer from the sale of land-scrip, by virtue of the provisions of the one hundred and thirtieth chapter of the acts of the thirty-seventh congress, at the second session thereof, approved July second, eighteen hundred and sixty-two, and of the laws of this Commonwealth, shall be paid to said college, and appropriated towards the purchase of said site or farm; *provided*, nevertheless, that the said college shall first secure by valid subscriptions or otherwise, the further sum of seventy-five thousand dollars, for the purpose of erecting suitable buildings thereon; and upon satisfactory evidence that this proviso has been complied with, the governor is authorized, from time to time, to draw his warrants therefor.

SEC. 8. When the said college shall have been duly organized, located and established, as and for the purposes specified in this act, there shall be appropriated and paid to its treasurer each year, on the warrant of the governor, two-thirds of the annual interest or income, which may be received from the fund created under and by virtue of the act of congress named in the seventh section of this act, and the laws of this Commonwealth, accepting the provisions thereof, and relating to the same.

SEC. 9. In the event of a dissolution of said corporation, by its voluntary act at any time, the real and personal property belonging to the corporation shall revert and belong to the Commonwealth, to be held by the same, and be disposed of as it may see fit in the advancement of education in agriculture and the mechanic arts. The legislature shall have authority at any time to withhold the portion of the interest or income from said fund provided in this act, whenever the corporation shall cease or fail to maintain a college within the provisions and spirit of this act and the before-mentioned act of congress, or for any cause which they deem sufficient.

Approved April 29, 1863.

I have thus sketched the birth of the college, and the labors of parturition. Like all children, it must now be tried by the ills and chances that flesh is heir to; its period of dentition, and want of nourishment, by perils nearly unto death, trials by fire, trials by poverty, threats of abandonment, orphanage, and of baby farming.

The corporation was organized November 18, 1863, with his Excellency John A. Andrew as President, Allen W. Dodge as Vice-President, and Charles L. Flint Secretary. The magnanimity of Gov. Andrew is shown from the fact that after the report of the legislative committee he not only yielded all opposition, but entered into a most zealous coöperation with the trustees in carrying out the work assigned them. In the midst of duties and cares before unexampled, during the anxieties and turmoils of a great civil war, he found time to attend their meetings and joined with their executive committee, consisting of Messrs. French, Colt and Davis, in visiting Amherst in June, 1864 to examine their location.

On the 17th of March, 1864, a letter was received from Dr. Thomas Hill, President of Harvard College, making suggestions in favor of the Bussey estate, but it was known to the trustees that the views of Dr. Hill and Prof. Agassiz were not generally supported at Cambridge. In April and early in May the trustees viewed the adjoining premises of Mr. Phineas Stedman, and of Chester W. Chapin near Springfield, the Kemp farm in West Springfield and the Luddington farm; in Northampton, the farm of Dr. Denniston; the Fairbanks farm; that of Mr. Clark, near Florence; the Day farm, and that of Dr. Prince, near the Northampton Lunatic Hospital, of which Dr. Prince was then superintendent; the farms of Cowles, Cobb and others, here in Amherst; at Lexington, the farm of Mrs. Cary; and at West Newton, the Winchester farm then owned by T. P. Chandler. But the towns of Lexington, Springfield, Northampton and Amherst only, "offered to secure by valid subscription or otherwise, the sum of seventy-five thousand dollars, for the purpose of erecting suitable buildings thereon." On the 25th of April the trustees decided to locate in Amherst by a vote of

For Amherst 8,
Springfield 3,
Lexington 1,
Northampton 1.

At this time the trustees were further instructed by an elaborate

report of their secretary upon the agricultural schools of Europe, which he had visited in the summer of 1863.*

At a meeting on the 4th of May, 1864, Hon. Henry F. French, then of Cambridge, became a member of the board of trustees, was at once elected vice-president, and soon after appointed by the governor and council, agent of the state to sell the land scrip, which no state could locate in another state or territory. Mr. French came to the board with the reputation of one largely interested in farming pursuits, who had published a book on "Drainage," been a prolific contributor to agricultural journals and to the agricultural report at Washington, was a vice-president of the United States Agricultural Society, and had recently become widely known in Massachusetts by his familiar and enthusiastic lectures for two years before the Legislative Agricultural Society, on drainage, plows and plowing, and the husbandry of England, which he had recently visited. Mr. French entered upon his duties as agent with vigor, but his work was an embarrassing one. So much land scrip was thrown upon the market at once by the different states, that its market value was greatly decreased, so that he was able to realize fifty cents an acre only, whilst it is said that Mr. Cornell, a rich capitalist, generously took the New York scrip and reserved it for the benefit of the college, whilst he could realize at his leisure.† Mr. French was criticised in some quarters for his acts in this regard, but I know he was much troubled, took the best advice, and did the best he could do.

On the 2nd of November, 1864, he was elected president of the college, by a vote of eight out of twelve. There was in fact, at the time, no other candidate before the board, who was desirous of an election, but the vote indicated doubts of the propriety or expediency of his election, as there were two blank votes, and one for Hon. Geo. B. Loring, and one for Chas. L. Flint, neither of whom desired the position.

On the 1st of February, 1865, President French, Hon. Joseph White, then secretary of the Board of Education, and *ex-officio* trustee of the college, and Mr. Henry L. Whiting, who was a professional engineer of the Coast Survey, and now engaged in a topographical survey of the state, were appointed a committee to consid-

*See Massachusetts Agricultural Report for year 1863.

†New York was entitled to about a million of acres under the law, for which more than $5,000,000 has been received, and much more would have been realized, had Mr. Cornell been able to carry out his own projects.

er location and plan of buildings, a plan of organization and course of study. There was a delay in the report of the committee, and on the 3rd of August, six months after, Wm. B. Washburn, afterwards governor, and Henry F. Hills of Amherst, were added to the committee.

On the 13th of October, 1865, a special meeting was held at the request of Davis, Durfee, Lathrop and Stedman, when Davis offered a vote that the committee be instructed to locate the college buildings on the plain near the center of the farm upon what is known as chestnut tree ridge. The five members of the committee with Mr. Colt voted in the negative, and the other six trustees present voted in the affirmative. It was understood at the time that several of these gentlemen having discovered that the president was persistent in his views, voted with him to avoid a break upon the very first question which came before them. The other trustees thought the question important, and they might well be condemned by good farmers in placing buildings, farm buildings and all, on a hill in the southeast corner of a large farm. Up to this time Col. Wilder was prevented by ill health from attending the meetings of the board. November 1, 1865 the trustees voted to employ an architect to report as to location, and Dec. 27, Mr. Vaux, the architect, made a report, and the meeting was adjourned to Jan. 2, 1866, when Mr. Davis renewed his motion. The President was so persistent in his opposition to the vote that he would not put the question; when after several hours of discussion Mr. Davis put the vote himself, which was carried nine to six, Messrs. Hills and Whiting of the committee having changed their votes, and being no longer willing to sustain the President. President French refused to consider this vote decisive, and, without authority, commenced excavations in the hill for building. The location was further discussed August 1st, and again on the 16th, when the motion was once more carried. This was the second *final* vote. Mr. French still refusing to "commend the ingredients of the poisoned chalice to his own lips," called a special meeting to let Amherst people present their views as to location of buildings, at which Hon. Edward Dickinson, Treasurer of Amherst College, came down to Boston and lectured us like children, "unpacked his heart with words, and fell to scolding." Thereupon Prof. Clark presented a remonstrance of over three hundred citizens of Amherst against interference with the discretion or action of the trustees. This meeting was held Sept. 19, 1866.

Here closeth the dentition period of our college, before it had begun to walk alone, in which the stomach as well as the head was largely disturbed. Our first President threw up his commission and took "French leave"!* During his presidency, in May, 1865, the legislature authorized the town of Amherst to raise $50,000 by taxation for the college, and in the same month granted $10,000 to aid in the establishment of the college.

Prof. Paul A. Chadbourne was elected President Nov. 7, 1866, but by reason of ill health, was obliged to resign the June following. The course of study which he marked out has been substantially followed ever since. Prof. Chadbourne was a wonderful man, as versatile as any one we can name; a scholar, a philosopher, a scientist, a Christian minister, and a teacher, he possessed qualities which are rarely combined in one man; the shrewdness and economics of a Yankee, practical familiarity with details, decision of character, great administrative power, the faculty of separating what is practical from what is merely theoretical, great activity and energy, united with method and system. He was therefore the man of all others for the college during its formative period. He entered upon his duties with every encouragement. The Governor and Council had in September, 1864 approved the location. The legislature had further approved it by granting power to the town of Amherst to raise $50,000 by taxation for college buildings, and by the grant of $10,000, and the citizens of Amherst had thus also shown their continued interest in the college, though delay had been occasioned by the suit brought by a few of its citizens to dispute the constitutionality of the Act. A citizen of an adjoining town had been unanimously chosen superintendent of the farm, and instructor in agriculture. I refer to Hon. Levi Stockbridge, who has ever since been so faithful, respected and popular an officer of the college. President Chadbourne had also laid his plans for a small body of professors, and commenced the south dormitory, laboratory and south boarding house, which were completed in 1867. Dr. Durfee, Leonard M. and Henry F. Hills had given $20,000 for the establishment of a plant house and

*Meanwhile May 26, 1866, the Board of Agriculture, which was one of the first Boards of Agriculture created in any state, was constituted a board of overseers "with powers and duties to be defined and fixed by the governor and council," but "no powers granted to control the action of the trustees of said college, or to negative their powers and duties." The board was also "authorized to locate the state agricultural cabinet and library, and to hold its meetings in said college," and the president of the college was constituted a member *ex officio* of the Board of Agriculture. [Chap. 263, Acts of 1866.

botanic garden, and all was promise when the college met with this first great loss.

On the 7th of August, prior to the opening of the college, Prof. Clark was elected president, Henry H. Goodell professor of modern languages, and Ebenezer S. Snell of mathematics. On the 2d of October following, the college was opened to students, of whom forty-seven were admitted before the close of the term. The college was at last fairly launched, and the prayers of the trustees, who since their incorporation had held thirty-five meetings on as many days, were about to be answered. President Clark was peculiarly fitted after these great discouragements, by his energy, enthusiasm and hopefulness, to encourage his fellow laborers, and to excite enthusiasm in others. He was the man of all others to start a college, if not to run one. I shall not dwell upon his character or his work, inasmuch as at the last dinner of the alumni a year ago a full and eloquent eulogy was presented by President Goodell, which is still fresh in the minds of those who heard or read it; as also the tribute to his memory in the last report of the college. During his administration in 1867 the Washington Irving Literary Society was founded. Mr. Wilder gave 1300 specimens of choice plants to the plant house. In 1868 the Legislature authorized the governor to issue arms and equipments to the college, and Congress had passed the act annexed.*

In 1868 the Legislature allowed $50,000 for the further erection of buildings. In 1868 President Clark also procured a meeting of the New England Agricultural Society for a trial of plows on the farm, and a country meeting of the State Board of Agriculture; the north dormitory, north boarding house, botanic museum and Durfee plant house were completed. The same year Charles A. Goessmann, the modest, industrious, learned and faithful professor of chemistry was

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*OFFICERS DETAILED FOR COLLEGES.

SEC. 1225. The President may, upon the application of any established college or university within the United States, having capacity to educate, at the same time, not less than one hundred and fifty male students, detail an officer of the Army to act as president, superintendent, or professor thereof; but the number of officers so detailed shall not exceed thirty at any time, and they shall be apportioned throughout the United States, as nearly as may be practicable, according to population. Officers so detailed shall be governed by general rules prescribed from time to time by the President. The Secretary of War is authorized to issue at his discretion and under proper regulations to be prescribed by him, out of any small arms or pieces of field artillery belonging to the Government and which can be spared for that purpose, such number of the same as may appear to be required for military instruction and practice by the students of any college or university under the provisions of this section; and the Secretary shall require a bond in each case, in double the value of the property, for the care and safe keeping thereof, and for the return of the same when required.

appointed, and Samuel F. Miller was elected professor of mathematics, physics, and civil engineering. He died much lamented, Oct. 28, 1870. In 1869, $50,000 was appropriated by the state for the further erection of buildings. Henry E. Alvord, U. S. Army, now professor of agriculture, was detailed for duty as professor of military science and tactics; the college hall, farm house and barns were built; Hon. William Knowlton, of Upton, afterwards in 1870 elected trustee, and who was otherwise a frequent donor to the college, and who died last year, gave $2000 for the purchase of the herbarium collected by W. W. Denslow; and in the same year the first *Index*, a college paper, was issued. In 1870 the state further appropriated $25,000 for the payment of debts. In 1870 also the first serious attack upon the integrity of the college, as a state college, was made by the passage of a resolve "That the Secretary of the Board of Education, and the Secretary of the Board of Agriculture be *directed* to devise a plan, if practicable, by which the college may, without expense to the Commonwealth, be recognized as an independent institution in analogy with other colleges in the Commonwealth, and that they inquire whether the term of study in said college should not be reduced, and report to the next General Court." Rev. Henry W. Parker was chosen professor of mental, moral and social science, and college preacher. In 1871 a legislative resolve allowed $50,000 for payment of debts and current expenses; added $141.535.35 to the perpetual fund of the college; and ordered 10,000 extra copies of the college report to be printed. The first class numbering 27 was graduated this year on the 19th of July, and two days after, the Agricultural College crew, "the Aggies" won in the intercollegiate regatta in 16 min. 46 1-2 sec. Selim H. Peabody was elected professor of mathematics, physics, and civil engineering. Henry J. Clark was elected professor of comparative anatomy and veterinary science, and died July 1, 1873. Miss Mary Robinson presented $1000 for the endowment of a scholarship. In 1872 Prof. Stockbridge was elected full professor of agriculture. Abner H. Merrill. U. S. A., was detailed professor of military science and tactics in place of Prof. Alvord. In 1873 Noah Cressy was elected professor of veterinary science. Isaac D. Farnsworth donated rhetorical prizes. Hon. William Claflin gave an agricultural prize fund, known as the Grinnell agricultural prizes. The Hills botanical prizes, and Prof. Peabody's entomological prize, were given. In 1874 the legislature granted $10,000. Prof. Peabody resigned. Samuel T. Maynard was elected gardener and assistant

professor of horticulture, and William B. Graves professor of mathematics, physics, and civil engineering. In 1874 also, three years after the first class was graduated, the "Associate Alumni of the Massachusetts Agricultural College" were organized, an early and striking proof of the interest maintained in the college by its graduates, which from your numbers here to-day you bid fair to retain. In 1875, the college entered into an agreement to represent the agricultural department of Boston University. Charles A. L. Totten was detailed as professor of military science and tactics, and Prof. Charles S. Sargent made a gift of trees, shrubs and herbaceous plants.

In April, 1876, Dr. Nathan Durfee, treasurer, died and the state appropriated $5000 for current expenses. Prof. Cressy resigned. A military prize and diploma were first given by Prof. Totten. In 1877, the state appropriated $5000, one-half for payment of manual labor by students from within the state. Hon. William Knowlton built a new green-house.

On the 20th of May, 1876, President Clark left the country to organize an agricultural college in Japan, leaving Prof. Stockbridge in charge; but returned the next year, and resumed his duties to which he devoted himself until May 1, 1879, when he resigned.

In 1879, the legislature granted $32,000 to pay the indebtedness of the college, and provided that "the expenses of the institution shall be kept within the income to which it is legally entitled, and the board of trustees shall be personally liable for any debt contracted for any purpose in excess of the annual income of the college, or for the payment of which money has not been previously provided." The state perpetual fund of the college was $350,000. The trustees offered in 1880, one hundred and fifty free scholarships, and Whiting Street, Esq made a bequest of $1000 to the general funds of the college. Prof. Levi Stockbridge gave $1000 for experimental purposes. Chas. A. Morris, U. S. A. was detailed as professor of military science and tactics.

Charles L. Flint, who had been since the organization of the Board of Agriculture in 1852, secretary of that board, and since the organization of the college, clerk of the corporation, as well as *ex-officio* trustee, to whom the college has ever been largely indebted for advice and services, and who has shown his interest in the college by a subscription of $1000 towards a library fund, consented to temporarily fill the breach occasioned by the resignation of President Clark, and held office till March, 1880. During his term of office, Prof. Parker

resigned, and Prof. Maynard was elected full professor of botany and horticulture. Prof. Stockbridge was elected president in April. In January, 1882, President Chadbourne's health had so far improved, that Mr. Stockbridge resigned, and President Chadbourne at once resumed the office. During President Stockbridge's term, Prof. Graves resigned in Aug., 1881; Charles L. Harrington was appointed professor of mathematics, physics, and civil engineering, and Victor H. Bridgman was detailed as military professor. In 1882, under the presidency of Mr. Chadbourne, $9000 was appropriated for a drill hall and repairs. An act was passed May 12th establishing the Massachusetts State Agricultural Experiment Station. Prof. Harrington resigned, and Austin B. Bassett was elected professor in his place. In January, 1883, the Durfee plant house was destroyed by fire, and on the 23d of February the college met with the final loss of President Chadbourne by death. Prof. Goodell acted as president until September, when James C. Greenough, elected in July, assumed the duties of the office. Mr. Greenough had not consented to become a candidate, but was elected by a unanimous vote, and continued president until September, 1886.

In June, 1883, the legislature allowed $10,000 annually for four years (and afterwards annually), and established eighty free scholarships, two for each senatorial district, to be recommended by the senator of the district.* Manly Miles was elected professor of agriculture, the drill hall was completed, and Leander Wetherell of Boston presented 1410 bound volumes to the library. In 1884, a resolve allowed $36,000 for the erection of a chapel and library building, for the completion of the president's house, and for the repair of north college.

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*CONDITIONS OF AWARDING FREE SCHOLARSHIPS.

(Resolves of 1883. Chap. 46).

The eighty free scholarships * to be given by appointment to persons in this Commonwealth, after a competitive examination, under rules prescribed by the president of the college, at such time and place as the senator then in office, from each district, shall designate; and the said scholarships shall be assigned equally to each senatorial district; but if there shall be less than two successful applicants for scholarships from any senatorial district, such scholarships may be distributed by the president of the college equally among the other districts, as nearly as possible; but no applicant shall be entitled to a scholarship unless he shall pass an examination in accordance with the rules to be established as hereinbefore provided.

Approved Jan. 2, 1883.

Resolved, That there shall be paid annually from the treasury of the Commonwealth to the treasurer of the Massachusetts agricultural college, at Amherst, the sum of ten thousand dollars, to enable the trustees of said college to provide for the students of said insti-

In 1884, Prof. Bassett resigned, and Clarence D. Warner was elected in his place. Horace E. Stockbridge was elected associate professor of chemistry. On the 4th of February, 1885, the south dormitory was destroyed by fire, and in June following, $45,000 was appropriated for rebuilding the dormitory, erecting a tower on the chapel and purchasing scientific apparatus. Prof. H. E. Stockbridge resigned, and Charles Wellington was elected associate professor in his stead. George E. Sage, U. S. A., was detailed as professor of military science and tactics. Ex-President French died Nov. 29, and Ex-President Clark on the 9th of March, 1886. In the same year the Henry James Clark prize of natural history was first given; Mr. Wilder presented several hundred volumes to the library, and $7000 for repairs and other needs of the college was granted by the state.

Mr. Greenough's presidency is marked by the changes and additions made in the college buildings. The boarding house built in 1867 was remodeled, repaired and painted; the interior of the original chapel building remodeled; the original north dormitory renovated, and the president's house planned and built. The south dormitory was rebuilt on a much larger scale, with accommodations for the agricultural department, at a cost of about $33,000. To President Greenough also, the college is indebted for his valuable services and oversight, in the erection of this beautiful stone chapel and library building, constructed of stone (from a granite quarry in Pelham purchased by the college in 1867), built and furnished at a cost of a little over $31,000. Mr. Greenough also obtained a subscription of between seven and eight thousand dollars for a permanent library fund.

At the period of the college commencement in June, 1886, Henry H. Goodell, who had been a professor in the college since the summer of 1867, and prior to the admission of its first class, and who had also held various other positions of all grades up to that of acting president, was elected president of the college, and is holding the position to the general acceptance and gratification of the trustees, the faculty, the students, and the community. The state has

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tution the theoretical and practical education required by its charter and the law of the United States relating thereto.

(Resolves of 1886. Chap. 34).

Resolved, That annually the scholarships established by chapter forty-six of the Resolves of the year eighteen hundred eighty-three be given and continued in accordance with the provisions of said chapter.

Approved April 16, 1886.

just appropriated $7000 for barn, sheds, ice-house, concrete sidewalks, fire apparatus, and heating appliances for the drill hall; in April accepted the act of Congress concerning experiment stations, and has also appropriated $6500 for a laboratory building at the Massachusetts State Agricultural Experiment Station at Amherst.

At the accession of President Goodell, Charles Henry Fernald was elected professor of comparative anatomy and veterinary science, and Charles Swan Walker professor of moral and social science. And Henry E. Alvord, formerly detailed as professor of military science, returned to the college which he loved, as professor of agriculture.

And now, gentlemen, at the end of a quarter of a century since the passage of the beneficent law we celebrate, with its author on our grounds, whom we were so glad to welcome yesterday,* let us remember that it is not quite twenty years since the college was opened, but we have time enough to review the past, to ask what mistakes we have made, what trials we have survived, and to see whether we have encouragement for the future.

One crisis of the college was in 1870, when an attempt was made by resolve, to disown the college, to renounce and discard it like an abandoned child thrown upon its own resources. There is a law human as well as divine, that parents shall support their offspring at least during helplessness. Let it never be forgotten, and I pray you to urge the consideration always, that this college is the child of the state, which is bound by the highest obligations of honor, by avowals, before all the world, in consideration of the gift by Congress of 390,000 acres of land, to "support and maintain at least one college where the leading object shall be * * to teach such branches of learning as are related to agriculture and the mechanic arts." This grant was made on a *condition*, and the state accepted the act with that condition. The state therefore cannot discard the child. It has agreed to "support and maintain" it. It is the *state's* college, "the *Massachusetts* Agricultural College." The land is the property of the state. The trustees are merely agents of the state, and therefore like any agents entirely subject to the orders of their principal. It is for that reason, if there were no others, that the State Board of Agriculture are properly made the overseers of the college; for this reason the state very properly should appoint the trustees, limit their powers, and render them liable for wilful excess of expenditure.

*Mr. Morrill was called by telegram to Washington by the severe illness of his son.

The proposed legislative infanticide was averted, and the child remained alive with its parents. The legislature became satisfied that it could not be accomplished honorably, nor legally.

Notwithstanding the result of the movement above described, again in 1879, and 1880, an attempt encouraged by Gov. Talbot and recommended by Gov. Long was made to annex the Agricultural College to another college. The resolve "requested Gov. Talbot and council to examine the affairs of the college, and report some plan for its permanent continuance with its relations to the *state definitely fixed*, or some plan for its discontinuance; but with the provision in any event, that its finances shall from this time be finally separated from the treasury of the Commonwealth." This meant life, "permanent continuance," with an arranged or defined stipend, or abandonment, being cut off with a shilling. Gov. Talbot's council were puzzled. There could be no contract or arrangement made with the college, because the college was the state's own minor child, and belonged to the state. I am informed by a surviving member of the council that no report was ever made, and certainly no message, nor report upon the subject appears in the Blue Book. Gov. Long in his first inaugural message in 1880, speaks of what is recommended in the report of the retiring governor and council as follows: "The course which is recommended in the report of the retiring governor and council is its union with Amherst College, if that can be effected, with provisions, of course, for fulfilling the trusts heretofore involved in the acceptance of funds from the town of Amherst and from the national government. Such a union, without destroying the integrity of this institution, would certainly separate it from the state treasury. It would save it from the annual attack that impairs its steadiness and accomplishment. It would graft a living branch upon a strong and growing college, which, adopting this new and independent department of practical instruction, would, I am sure, even though with the same income, increase its efficiency, and enable it still, in the interest of agriculture and not subordinate to any other, to better achieve the worthy purposes of its foundation. I trust you will adopt such a course—and the one recommended in the above-named report is there suggested with that view—as will make this institution most valuable in promoting the great interest for which it stands." Gov. Long wanted to make the college a "living branch" upon another college; but with what provisions he would fulfil the trust involved with the town of Amherst, and the national govern-

ment except with their express consent, he failed to suggest. Gov. Long was too fast, whilst Gov. Talbot's council hesitated and felt that the project was impracticable and unworthy of Massachusetts. For if the state cannot discard, how can it annex, and let the Agricultural College, in the words of Gov. Long, become "a branch of another college"? I have never been able to see how the state could "support and maintain" a college if it is made an annex to another college. How can the state send its Board of Agriculture as overseers to another corporation? "At least one college." If an agricultural college, so called, is located in the vicinity of another college, it still cannot be another college, unless it rests upon a separate foundation, with independent and distinct professors throughout; and if so, there can be no saving of expense, by any such conjunction as can be made under the law. I understand that the various colleges under Oxford and Cambridge Universities, each rest on distinct foundations, each with a master answering to the president of our colleges, each with a full set of professors and tutors throughout, and a chancellor over all. *E pluribus unum.* These considerations apply with peculiar force to an agricultural college with a farm attached. How annex to Oxford or Cambridge a farm of four hundred acres, with a college upon it, without keeping that college upon an essentially independent foundation? Nothing resulted from either of these projects, and the college is still the child of the state, to be supported by the state.

All the governors of the Commonwealth but two, have been friendly to the life of the college, and in 1883, when Gov. Butler took the gubernatorial chair, he thought it better to feed and nourish it than to put it out to nurse, or send it to some legislative Tewkesbury, and did what he could to revive confidence in its success.

It cannot be denied that in the minds of many friends there have been some disadvantages in the location at Amherst, because of its proximity to a classical college; because it has been somewhat difficult of access, (a trouble which will soon be remedied); and because it has not attracted the beneficent grants and bequests, which it might have received if in the neighborhood of a great city.

As to the first consideration, it is due to Amherst College to state that the suggestion is made solely as to the relations, real or supposed, between the two classes of students. Amherst college, on the contrary, has not only scrupulously adhered to pledges made by its president, Dr. Stearns, when the location of the Agricultural College

was under consideration, that the elder college would urge or countenance no movement for annexation or absorption, but would do what it could to accommodate the Agricultural College, but it has offered accommodations at times, and granted the agricultural students access to its library, etc.

Nor do I think the college has suffered much from the last consideration. Although a large number of retired gentlemen, such as formed the Massachusetts Society, have shown great interest in the advancement of our agriculture, the active mercantile and manufacturing interests of Boston have never taken interest in the origin or success of the college, whilst the metropolitan press has almost universally and constantly depreciated and disparaged the institution. President John Adams, who was in 1805, president of the Massachusetts Society, nevertheless in 1812, wrote as follows: "We say and say truly that agriculture and commerce are sisters, and their interests mutual and consistent; but the misfortune is that individuals and masses of both orders of men do not always understand the existence of both interests, and instead of endeavoring to reconcile them, employ all their policy and influence to counteract each other. The merchants in all the seaports discouraged the growth of wheat in the state. Why? Because they supply us with flour from New York &c. and the article constitutes an important link in the chain of commerce. Agricultural patriotism is one thing, and mercantile patriotism another in our dearly beloved Massachusetts; both equally sincere, both equally *bona fide*. You will get no aid from Boston. Commerce, literature, science, theology, are against you;—nay, medicine, history, university, and universal politics might be added." I do not adopt this extravagant statement of Mr. Adams as strictly applicable at present, but quote it as a curious coincidence with the fact I was stating.

Neither am I discouraged by any indications of a want of interest in the college, or in the number of its students, but only in the want of funds to sustain a college as it should be. The Commonwealth cannot do for this college what it pledged itself to do, without money.* But students will come as fast as we can accommodate them, and do

*It ought to be known that among the numerous inquiries by letter during the last year over ninety poor young men sought admission to the college provided they could earn their way by work upon the farm and by other means. Manual labor of students is not, of course, profitable in itself. No one could do more good in the educational direction than by donating in whole or in part to a fund of $100,000, to be known as the "Manual Labor Fund."

them justice. I have too much faith in the progress of the age, to suppose for a moment that any effort to develop an accurate science and knowledge of gathering succor from our mother earth will be a failure. Why, in 1805, I read that Mr. Morrill's own University of Vermont had thirty students, and one professor, and he was the president. I had just entered Harvard in 1836, when she celebrated her second centennial, and heard Oliver Wendell Holmes recite his verse:

> "Who was on the catalogue
> When college was begun?
> Two nephews of the president,
> And the professor's son.
> They turned a little Indian b'y
> As brown as any bun.
> Lord! how the Seniors knocked about
> The freshman class of *one*."*

Neither am I discouraged by any want of success of the college either in its instruction, or in its experimental work. Under the circumstances it has far exceeded any reasonable expectations. It is remarked by friends who have most closely watched its graduates, that they were better prepared for the actual work of life than those of the classical colleges. I purposely avoid any discussion of the philosophy of an agricultural education, and of the scope and sphere of this college. My province is confined to a relation of facts of the past. But it is proper that I should remind you that Agassiz declared that the experiments on the circulation of sap in plants, and their expansive power during growth are worth all the college had cost the Commonwealth. I append a summary, which it would be irksome now to read, of the experimental and other scientific work conducted at the college.

On the use and effect of common salt on grain and root crops. 1869. *Goessmann.*

The construction and repair of highways. 1869. *Miller.*

The establishment of true meridian lines as the basis of all surveys. 1870. *Miller.*

Report on the management of stock. 1871. *Dillon.*

Stassfurt-salines as a potash resource in agriculture. 1871–72. *Goessmann.*

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*Turn to the Harvard catalogue and you will find: In 1643 4 graduates, in 1640 and 1641 none, in 1644 7, in 1645 7, in 1646 4, in 1647 7, in 1648 5, in 1652 1, in 1654 1, in 1655 2, in 1656 4, in 1672 none, in 1673 4, in 1674 3, and so on, whilst the class of 1685, consisting of 14, was the largest class which had graduated during the fifty years since "the college was begun," and twenty-two was the largest number of any class prior to 1719.

The growing of sugar-beets, the manufacture of sugar from them, and trial of their value for cattle food. 1871–76. *Goessmann.*

Report on sugar-beets raised on the college farm. 1872. *Goessmann.*

Fertilization of farm lands with reference to commercial fertilizers. 1872–73. *Goessmann.*

The circulation of sap in plants and their expansive power during growth. 1873. *Clark.*

Practical trials of new implements and farm machinery. 1873. *Dillon.*

The sources of supply and the quantity and quality of our manurial agents. 1873. *Goessmann.*

Investigations of the quality and composition of commercial fertilizers offered for sale, and the protection of the community from fraud by legal control and inspection. 1873–86. *Goessmann.*

Observations on the phenomena of plant life. 1874. *Clark.*

Experiments with compound commercial fertilizers to test their comparative agricultural value and their value as compared with single elements. 1874. *Stockbridge.*

Experiments to determine what elements will make practically a complete manure on our average soils. 1874. *Stockbridge.*

Laboratory and physical examinations of the South Carolina phosphates; trial of their agricultural value in the raw state and after treatment with acids. 1874. *Goessmann.*

Examinations of varieties of sugar-beets raised throughout the State of New York, Lower Canada, and the Connecticut River Valley. 1874. *Goessmann.*

The chemical and physical condition of the salt marshes of the state, and the devising of methods by which they can be made available for agricultural purposes. 1874–77. *Goessmann.*

To determine, in feeding substances, the proportions of different elements of nutrition required to save needless expense, and to produce the most certain results. 1874-75. *Stockbridge.*

Experiments on the continuous growth of crops on the same soil with chemical fertilizers alone. 1874-75. *Stockbridge.*

On the dentition of domestic animals. 1875. *Cressy.*

Experiments with different varieties of potatoes. 1875. *Maynard.*

Investigation of dairy products—oleomargarine, Jersey, and skim-milk cheese. 1876. *Goessmann.*

Examinations of animal secretions; variety of urinary calculi, etc. 1876. *Goessmann.*

Investigations on the effect of girdling fruit-trees and plants to hasten the time of ripening and to improve the quality of the fruits. 1876. *Goessmann and Maynard.*

Experiments with fertilizers upon sugar-cane carried on in Louisiana. 1876-78. *Goessmann.*

Examinations of various vegetables and fruits. 1876-86. *Goessmann.*

Examinations and trials to test the comparative value of different methods of setting and treating milk in the butter-dairy. 1876-77. *Southwick.*

Notes on compensating-powder; being a brief consideration of a new mechanico-chemical explosive, for heavy artillery purposes. 1877. *Totten.*

The comparative study of milk of different breeds of cows under the same treatment. 1877. *Goessmann.*

Contribution to the chemistry of American wild and cultivated varieties of grape vines. 1878. *Goessmann.*

Investigations on temperature of soil and air, and on deposition of dew on the soil and plant. 1878. *Stockbridge.*

Investigations in relation to the evaporation and percolation of water from the soil. 1878. *Stockbridge.*

The tilling of soils of different characteristics as affecting the loss of water by evaporation. 1878. *Stockbridge.*

Investigations in relation to the comparative temperature of the soil and air by day and by night. 1878. *Stockbridge.*

Investigations concerning the saccharine qualities of several varieties of corn and melons. 1879. *Goessmann.*

The growing of early amber cane, and the manufacture of sugar from its juice. 1879. *Goessmann.*

Investigations of the comparative nutritive and feeding value of Northern, Southern and Western varieties of Indian corn. 1879. *Goessmann.*

The determination of the elements of plant nutrition lost from the soil by leaching, and of those it retains. 1879. *Stockbridge and Goessmann.*

Report on lysimetre. 1879. *Stockbridge.*

The effect of chemical salts on the carbo-hydrate contents of plants and the quality of the fruits. 1880. *Goessmann.*

Experiments regarding diseased peach trees (yellows, etc.). 1880-81. *Goessmann.*

Experiments regarding the influence of special manures on fruits, etc. 1881. *Goessmann.*

The system of preserving green food in silos. 1881. *Goessmann.*

Investigations in relation to unconscious bias in walking. 1884. *Miles.*

Investigations in reference to bilateral asymmetry of form and function. 1884. *Tuckerman.*

Experiments with new varieties of fruit. 1887. *Maynard.*

Nor should this college at this hour, and especially in this presence, forget to present its congratulations, and send its God-speed to its twin sister, the Massachusetts Institute of Technology, both sired, in equine phrase, by "Uncle *Sam*" out of "Massa-chusetts."

In the land of old Laconia
Where the Muses still abide,
Alpheus fair and young Eurotas
Flowed adown the mountain side.

They were twin-born lovely children,
Free as air, and fair as free,
From the selfsame fountain springing
Life to them a jubilee.

Not alone on far off hill-sides
Twin-born gifts of God do come;
Joyfully we hear their voices
Near our Athens here at home.

It is also our joy to learn that the legislature has just presented her with a conditional dowry of $100.000.

I shall never forget the pleasure with which a year ago I attended a dinner of the "Associate Alumni." I felt somewhat like Simeon of old, and could not well realize that here within twenty years was this full bloom and fruit of a college, a college with an association of graduates indeed. I can therefore imagine with what riper pleasure you, Mr. President, who have known, and taught, and guided and advised, from the day the first student was admitted here, and with what pride and satisfaction Mr. Morrill, came to this celebration. These are his jewels. These are the beginning only of those long processions, which from every state and territory, I trust to the end of time, will come and go, rejoicing in the lamp of knowledge which he will have presented them, and recognizing him as their father, even as the Jews said "we have Abraham for our father." We

alone are leading the procession with more than 350, besides those who have dropped out by the way.* Yes, they

> "are coming, Father Abraham,
> Five hundred thousand strong"!

The future graduates of these 38, nay 50, 60 colleges, more numerous than the seed of Abraham, tracing their lineage from no myths, like those of Greek or Roman story, seeing clearly that they were conceived and born of no unholy passions, suckled by no wolfish or beastly natures, will thank God that it was from the far-seeing brain of a wise statesmanship, that these colleges, like Minerva, from the brain, and not the lust of power, sprang into life. This morning from every English fireside, with million voices, have rolled the notes of the national anthem, for a woman who during fifty years, as maid, and wife and widow, with feminine dignity, and the respect of all men, has sat upon the British throne. But Victoria herself has accomplished little as a ruler, or law-giver. Have we not greater reason on this year of the twenty-fifth anniversary of the passage of the bill which gave us life, and which put Agriculture on the throne to which she is rightfully entitled, to exclaim "God save the Senior Senator of Vermont! To him be the honor to the world's end!"

And before we shall have lain down from our labors here, I look forward to the time when the college hall will be decked with the painted images of those who have been the creators or benefactors of this institution. I would have *here* Morrill, the statesman and

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	Living.	Dead.	Total.		Living.	Dead.	Total.
Bachelors of Science,	260	8	268	Non-graduates,	372	34	406

DEGREES.

	Alumni.	Non-Grad.	Total.		Alumni.	Non-Grad.	Total.
M. D.,	14	11	25	Ph. D.,	2	1	3
Jur. D.,		1	1	B. D.,	1		1
LL. B.,	7	1	8	D. D. S.,	1	1	2
D. V. S.,	5	1	6	B. A.,	2		2
B. Sc. (Boston Univ.)	127		127	C. E.,		1	1
B. Sc. (elsewhere)	1	5	6	E. M.,		1	1
V. S.,	1	1	2				

OCCUPATIONS.

	Alumni.	Non-Grad.	Total.		Alumni	Non-Grad.	Total.
Ordained Clergymen,	4	1	5	Lawyers,	9	7	16
Physicians,	11	11	22	Dentists,	1	1	2
Veterinary Surgeons,	6	1	7	Teachers,	17	10	27
Journalists,	8	3	11	Engineers,	18	9	27
Chemists,	17	4	21	Architects,	1		1
Agricultural pursuits,	84	105	189	Business pursuits,	70	155	225
Army,	1	2	3	Navy,		1	1
Miscellaneous,	10	37	47	Unknown,	3	25	28

lawgiver; *there*, the venerableness, gentlemanliness, energy, and proud beauty which shone in the countenance of Wilder; and over against him, the earnest face, the eager eye and nervous vigor of Clark, the young man, enthusiastic for the future; *there*, the scholarly, professorial portrait of Chadbourne; *here*, the frankness, honesty, guilelessness, common-sense, and friendliness which so mark the face of Stockbridge; and I would not fail to find a picture of benevolence, generosity, modesty, and sadness lit by a heavenly smile, which were illustrated in the person of William Knowlton. My gallery would include still others among the living as well as the dead.

And when in after time the long list of the faithful and devoted servants of the college shall be scanned, one will be found who from 1867 was professor of modern languages and English Literature; from 1867 to 1869, instructor in gymnastics and military science; in 1869 lecturer in entomology; in 1869 and 1870 instructor in zoölogy; from 1869 to 1871 instructor in anatomy and physiology; in 1872 and 1873 instructor in history; in 1885 and 1886 librarian, and finally in 1886 president of the college, Goodell's name "will lead all the rest."