

and to the purpose of punishment, which is the safeguard of public security, returning to free life men capable of work, disposed to labor and of good conduct. It is not surprising, then, that under different forms this idea has considerably extended and has modified in this way the prisons of different countries. With the exception of perhaps Belgium, where the cellular system during all the imprisonment gives good results, I believe there is not a state in Europe where isolation is exclusively adopted.

At the side of prisons of continued isolation, which are becoming more rare, we see rising everywhere prisons with a graduated system. In Italy, after some happy efforts with labor in the open air for the least dangerous among the convicts, all have adopted in the new penal codes the graduated system for long punishments. We have also introduced it in the military penal code, which is at present being studied as much as the nature of military institutions on land and sea will admit.

In extending this principle further, in some states they began to establish conditional punishments for offenses of less gravity; that is, the condemned undergoes the punishment only after a second conviction.

With regard to judicial prisons, as they are for a detention which should be brief, applied to the accused whose guilt or innocence is not determined, and during which time it is for the interest of public justice, of public safety, and human dignity, that there be no communication between those who are real criminals and those who may not be, every one agrees that the only just and rational system is that of continued cellular separation, although the need of sufficient establishments and financial difficulties prevent, in more than one state the entire and complete application of the system.

It is hardly necessary to add that when once the idea of reformation enters the penal institution, then comes the desire either to prevent crime in cutting off its sources or to hinder as far as possible the relapse of the criminal on the expiration of the sentence. Hence come the reform schools for the young and societies of patronage. Concerning these complementary institutions of prison reform, the first of which in our days has had a great development, I cannot speak now, for they furnish sufficient material for several conferences.

After this summary view of the origin and development of penitentiary reform, I request you to follow me for a short time, so that we can together grasp the essential unity of the subject. We can the more easily appreciate the good results which have been obtained, distinguish what is to be avoided and what is yet to be accomplished, so that if we cannot fully attain the object sought, we can approach it more and more.

2. THE ESSENCE OF PENITENTIARY REFORM.

I consider only those fundamental principles that are common to all systems, and I understand that the essential unity of prison reform, whatever may be the manner of its application, consists in removing whatever the ancient prisons possessed of cruelty, anti-hygiene and immorality, and to make the punishment serve for the reform of the criminal. And I ask, in pursuing this noble end, Have we not lost sight of the true object of punishment? And in applying this principle are the means employed adapted to gain the real reform of the guilty?

Observe, then, in what manner we may derive profit from the rapid review we have just made of the prison reform movement. Consider well the subject upon which I shall address you a few moments longer, if you will give me your kind attention.

The condition of ancient prisons, the treatment and nourishment of prisoners, and their idle congregation were without doubt highly contrary to the health and morality of the prisoners, and consequently to the public interests and social security.

Desiring to remedy these evils, we often fall into the opposite extreme. We have so elaborately attended to the buildings, the cells, the food and the treatment of the prisoners that many workmen who labor from morning to night to give a morsel of bread to their families, if they knew how they would be treated in certain prisons, they would perhaps prefer—in all save crime—life in the prison to that in their sorry attic.

In some places they are so occupied in perfecting their prisons by the best methods of ventilation, heating, pavements, furniture, locks, supervision and a thousand other details that the essential end of reform, the conversion of the guilty, has imperceptibly passed to a second place. On the contrary, pushing to the extreme the principle of moral reform, it is claimed that so long as the prisoner is unchanged he should remain in confinement. It would be useless, they say, to propose the release of the guilty before the reformation is complete, and the punishment would not be effective, even for public safety, if we returned to society a criminal who would commit new offenses.

In the mean time the great public, seeing these exaggerations, and not seeing much good fruit in those who go out from the prisons, noticing at the same time the increase of crime, and that crime is frequently a profession, the exercise of which is only interrupted from time to time some months of the year when the offenders are in prison, cry out, smiling, that all this is but a Utopian theory, pity for rascals to the detriment of honest people.

On the other hand, the positive school, of which the essential principle is fatalism, founded upon the conditions of a man's organization, innate or hereditary, upon his social surroundings; the locality of his birth and education; upon the impelling causes that determine his actions; sees in all these efforts for the moral reform of the prisoner only the dream of visionaries. And if, in view of public safety, we occupy ourselves with the regime of prisons for the benefit of individual convicts, they see in the criminal only an invalid or an idiot for whom the hospital rather than the prison is the more suitable home.

And, after all, on which side is the truth? I will first say that I am not one of those who despise as folly the influences exercised on the moral tendencies of man, the condition of his organization, the society where he lives, and the circumstances in which he finds himself.

So considerable a part of the human being as is the organization of the body, which is the covering and

instrument of his activity and moral actions, cannot be set aside when we must estimate the moral value and the imputability of his actions. Two horsemen equally competent in horsemanship can mount, one an excellent horse and the other a sorry jade. If I am obliged to live in an unhealthy place, no one can consider it a fault on my part if I am not as well as he who breathes with full lungs the pure air and oxygen of the mountains.

The influence even of the bad horse can be such that every progressive movement is impossible; and the influence of a sickly climate can sometimes force me to take to my bed.

Now, all this can prevent the man from acting with entire freedom, but it does not destroy liberty itself. It is only necessary to say that it will require great care to secure utility from a poor horse or to overcome, at least to some extent, the deleterious effect of certain atmospheric conditions.

Moral liberty, though narrowed in its exercise, always exists, though at times dormant, and by proper management and more vigorous efforts it can, to a certain extent, overcome these obstacles. Now, it is upon this slight liberty we must act to secure the improvement of the guilty. We tame lions; we can as well tame men.

I will say, in the second place, and I say no new thing, that the ancient prisons were frightful and unhealthy habitations, where the criminal stagnated in idleness and filth, where he was poorly fed, and was under the arbitrary power of guards and directors. Now that he has a proper prison and healthy food, obligatory labor and good discipline are not only just, but necessary, in the interest of the criminal himself and for that of the public. For, aside from the consideration of the fact that under certain circumstances the unhealthy prison can easily become a center of infection, it is evident that, if the punishment is completed, you return to society a miserable invalid, incapable of earning his bread, and in addition to the obstacles which encounter each discharged prisoner he will find the greatest yet—his inability to get work, which, nine times out of ten, will cause him to commit new crimes. Besides, a good hygienic treatment, while improving the physical condition of the prisoner, renders him less irritable and predisposes him to mental struggle to improve himself morally. But every one can see that this self-treatment is powerless to secure the complete reform of the prisoner.

Humane treatment is necessary in order not to destroy or degenerate his vitality. At the same time, we must never forget that according to the immutable law of our being, every penalty entails suffering without which man will never apply himself to the practice of virtue for which his natural inclination is so feeble. By it he will see it is for his own good interest to become good, that the suffering may cease.

Finally, it is necessary that the condemned endure suffering in order that the punishment be withdrawn. He should not be treated with cruelty, but he should feel the pain. I will say that the reformation of the guilty, considered in itself, is a thing to be regarded as sacred and the surest guarantee of public security, but it must not be forgotten that it cannot be the direct end of punishment, however desirable it may be. Society should aim, above all, to repair the injury done by crime, and for that purpose it can do nothing better than to proportion each penalty to each crime. During the execution of the sentence as much as possible should be done to reform the prisoner, but when the term is ended society no longer has the right to retain the guilty in prison until his reformation, otherwise society becomes an agent for morals and education only. Proportion between offenses and penalties would then be impossible, since even for the smaller offenses, if the delinquent is not reformed, he might be retained in prison for years and perhaps always; and, on the contrary, after some months, or even weeks, the greatest criminals could be discharged if they show by their conduct they had reformed. That some endeavor to correct delinquents during their sentence and prevent relapses is very well, but to go further would be to misunderstand the character and limits of the punishing power of society.

But even in thus placing penitentiary reform upon a true basis and within true limits, a grave and final question remains to be answered. With all this help, can we reach the reform of the criminal?

A man, although a criminal, does not cease to be a man. He is then subject, as well as the man generally regarded as honest, to the proper laws of human nature. I recall with tender emotion what was said to me some years ago at Christiania by an excellent director of the prison, loved by all who knew him—Mr. Petersen. "They speak to me of criminals," said he. "I am a criminal myself; for if I sound the depths of my soul, I see there, in germ, the same crimes which are punishable in prisons. Only education, religion, the love of good, the struggle against self, have prevented the germs from developing and producing bad fruit." What Mr. Petersen said, each of us, if he is sincere with himself, is obliged to say. Then the treatment to apply to the reform of the prisoner is at the bottom the same as for the moral amendment of the free man, but there it is necessary to apply it more rigorously and with energy, on account of the greater obstacles arising from vicious tendencies and inveterate habits.

For the efficient treatment of every malady three things are necessary. First, that there be a remedy having intrinsic curative powers. It then follows that there should be a qualified physician who can apply the remedy to the individual case, and finally that the sick should accept the remedy. Without these conditions no cure is possible.

Now the same thing occurs in the case of the morally diseased. For the criminal the first efficient remedy is to arouse the conscience. In this he is aided by the recollection of his offense and made to feel how repulsive is crime and how beautiful is a virtuous life. This aids him to eradicate those vicious tendencies that result in crime, and to approach the ideal of a better life. In this movement is the essence of the remedy and secret of reform. Then follows improvement of the morals, which is best promoted by religion, of which all men who know little or much of prisons and prisoners know the beneficial influence. The physician is, above all, the director of the prison, and he ought to be. Entering with a loving and devoted

spirit the place of each convict, seeking to possess his confidence, laboring with each according to his disposition; better than any one else he can contribute to the awakening of the conscience. The pivot of prison reform is a good personal direction. But the most essential and difficult thing is that the diseased—that is to say, the prisoner—shall consent to take the remedy. If he will not take it, the fault will not be in the remedy nor in the physician, but in the patient himself. We build prisons, but what is most difficult is to introduce in them the spirit of penitence. For in the spirit of man—above all, of the man thoroughly degenerate—there is such a strength of resistance to reformatory influences that the best efforts fall as upon granite.

Whatever, then, may be the perfections of any prison system that can be conceived, it is impossible to say in an absolute manner that it will secure the reform of the prisoner, because there must be a responsive action in his own nature for which a good prison system prepares the ground, but no human power can of itself work the cure.

Now as a good general, having met great resistance from the height of the fortress he has attacked, seeks to enter by a more accessible passage, this inward resistance which is met in consummate criminals has in these days aroused concentrated efforts for the reformation of the young, it being more easy to arrest vice before it has become crime. In this generation there has been an evolution in penal science analogous to that in medicine. Formerly the physicians treated only the exterior morbid phenomena and applied the remedy to the surface, not preventing the reappearance of the disease. Then began the study into its causes and sources, and the search for suitable remedies. But in time it was noticed that the source of the disease was often from within, and the consequence of habitual ill treatment of the organization in defiance of its natural laws and sickly tendencies, hereditary or acquired. They then occupied themselves in devising a more rational regime to maintain or establish the normal and just equilibrium of each force, of each faculty, and of each organ. Medicine thus gravitates now to hygienic principles. The same evolution applies to the idea of reform as connected with the punishment of the guilty. At first only the gravity of the injurious results of crime was considered, and they inflicted corresponding material punishments, cutting off the hand of the robber or decapitating the murderer. Passing later to consider in each case the circumstances of the crime and the degree of guilt chargeable to the criminal, they began to proportion the severity of the punishment to each case and to each individual. They thought finally to occupy the time of imprisonment for the moral reform of the prisoner; and hence arose penitentiary reform. At present, seeing the difficulty of the reform of adults, they strive to correct the vicious youth before they become offenders. Thence comes the development of progress in these later days in houses of reform. Behold thus hygiene in penology, which tends to render the employment of remedies less necessary.

The tendency of modern legislation toward the mitigation of punishments requires more energetic action for prevention. In reform schools lies the hope for the moral reform of the dangerous classes. I dare hope that prison reform, if it shall produce no other benefits, will do immense good by leading many eminent men to direct their efforts to the reformation of criminal youth.

In the meantime we should not neglect to do all that may be to reform the guilty whose sentence has expired. Whatever importance is attributed to hygiene, the physician who does not aim to prevent disease, and who does not wish to treat the sick, however incurable the disease, is not a good physician.

First, the means employed to reform the criminal do not always fail. There are some prisoners who reform themselves, and there are sick who heal themselves.

Besides, should we renounce all efforts for reform when we cannot always succeed? As long as there is life there is hope, and this hope should never be renounced. Moral improvement is ordinarily very slow, but the true aim of all progress is not to reach the end at once, but consists in a constant advance. The regenerating inspiration which has made suffering an instrument of moral redemption is born of love. And love is never discouraged. When we succeed in producing with a few only of the hardened criminals a real abhorrence of evil and love for the good, do you believe it would be time lost?

It is no small matter to impress on the most degraded of society this principle, superior to all differences of nationality, customs and opinions, to which all hearts aspire: the moral redemption of man and of humanity.

But this moral redemption began in the world by a power from on high. We should then have faith that a day will come when evil will be vanquished, when truth, justice and love shall reign here below for the consolation of this poor earth.

ACTION OF NITRIC OXIDE UPON THE METALLIC OXIDES.

By MM. PAUL SABATIER and J. B. SENDRENS.

In a former communication the authors have shown the action of nitric oxide upon metals and upon the lower oxides capable of being peroxidized. These results, completely different from those produced by oxygen, or by the air, show that nitric oxide has a peculiar oxidizing power. The study of its action upon the peroxides shows that it may also act as a reducing agent. The reduction of chromic acid begins at the ordinary temperature. Silver oxide is not resolved into its elements if heated below 200°, but nitric oxide reduces it at 170° and upward. Lead peroxide, PbO₂, if heated alone, is perfectly stable below 450°. Its decomposition takes place only at a red heat, and it then yields orange minium, which, on prolonged ignition, is converted into yellow litharge. In nitric oxide the reduction commences about 315° and proceeds regularly at this temperature, yielding at once white litharge, perfectly homogeneous. Manganese dioxide, which evolves oxygen only at a red heat, acts upon nitric oxide at 400° and is converted into brown sesquioxide. Nitric oxide may be utilized in the production

of nitriles. The oxide to be experimented upon was suspended at first in deaerated water by means of washers, traversed at first by a current of hydrogen. Nitric oxide absolutely free from nitrous vapor is then directed upon it, when there is an exclusive formation of nitriles.—*Chem. News.*

HIRAM SIBLEY.*

THE world honors men who have inaugurated great enterprises; it doubly honors men who have made great beginnings of grand social movements. Hiram Sibley was one of those who first and most effectively aided Ezra Cornell in his great beginning of a grand educational evolution. Hiram Sibley shares with Ezra Cornell and his coadjutors and successors that honor which is perpetuated and symbolized by the material part of Cornell University, and it is fitting that he should be given a monument in its chapel, in presence of that erected to the memory of the founder. This would be true had he done no more than promote so well the general welfare of the University in which he came to take so great an interest; but the man who helped make the fortune which the founder so greatly imperiled later in the effort to sustain his splendid enterprise; the man who aided so efficiently in making it possible that Cornell University should be founded; who stood hand in hand, shoulder to shoulder, with the founder during his life, and who, after his death, still more effectively promoted the noble work so well begun—this man had his own peculiar and noble work to do.

He was to make the real beginning of the new and special "liberal and practical" education, for the privilege of promoting which Cornell paid his half million dollars and founded his university. He was to enjoy the privilege of inaugurating an important branch of that education of the "industrial classes" which this University was founded especially to promote, and which it has become famous for having so well illustrated in its short life of a quarter of a century. It is this which constitutes the great beginning of a great work and which gives Hiram Sibley claim to highest honor. He began, and began well, a noble enterprise for which the world had long been waiting, and which, once inaugurated, was certain, in such a location and under such circumstances, to grow in magnitude and usefulness as long as the fundamental purpose and the aspirations of the founders of the University should be remembered. The bust in the chapel of Cornell University is unveiled as a testimonial of the respect and affection of his colleagues and of the authorities of the University. It will stand unchanged through the centuries, and through all the long years will remind coming generations of students and teachers of their benefactor, and give strangers some idea of the sturdy form and rugged features of the man who gained fame and honor as the organizer of a great telegraphic system, but a fame eclipsed by the brighter glory of the builder of a college for the education of the sons of the people. After all, the real monument is not bust of bronze or limned portrait; nor is it buildings and apparatus of scientific research or of practical work that will most permanently give this man his fame. It is the commencement of the work that constitutes the claim; it will be the constantly growing and never-ending good that comes of it that will raise a monument of constantly increasing magnitude and never-ceasing utility, beside which portrait, bust, or grandest structure will be of little worth.

Aristotle founded a philosophy which is to-day of the past; but the founder is honored by the greatest minds of modern times as a beginner. A great man saw his opportunity to make a beginning; smaller men complete his work. Herodotus wrote a history; it was a simply told story; but it was the beginning of history, and Herodotus still lives. Copernicus, in his knowledge of astronomy, was a child beside the student of the stars in our time; but he is immortal as the beginner of a true exposition. Newton began the development of the science of mechanics; his "*Principia*" is no longer known in the schools; but no more brilliant fame illuminates our modern time than that of the man who gathered these pebbles on the shore of the ocean of truth. Gilbert began a science of physics and Lavoisier a chemistry, innocent, both, of a knowledge of principles and facts familiar to every intelligent college lad; their names are forever famous. Linnaeus and Buffon and Lyell cleared the way to merely the portals of the paths of modern natural science. We honor them to-day. They will be honored so long as humanity shall move onward and upward. Watt built a first rude steam engine; Stephenson constructed the beginning of the railway; Morse employed Cornell to lay the first telegraph wire beneath the ground and built the first overhead line, roughly and crudely; but the flash of that first beautiful message, "What hath God wrought!" will be remembered longer than bronze or granite shall endure; Stephenson will never be forgotten and Watt will never need artificial buttress for his intangible monument.

Columbus discovered America; but his glory is not bounded by the narrow limits of Watling Island, nor is his memory lost in four centuries. Columbus discovered a world, gave foundation to a nation, made a history possible to peoples who, through all time, will remember him for his share in the beginning of such mighty possibilities. The voyages of Thorstein and of Eric were more hazardous than those of Columbus; the conquests of Cortez and of Pizarro were grander in themselves than the strifes of Columbus; the growth of the American nation is a more wonderful spectacle than the annexation of Mexico or of Peru to Spain; but the fame of the discoverer and the beginner of all that four hundred years have seen on this continent, and that the coming ages are to see, looms up out of the historical past in grander and grander proportions as the centuries go by. And thus it is with all famous men. Their fame is measured, not by the greatness of their exertions or of the work performed by them in their own time and by their own strength; but by the magnitude of the movement which they have begun, and of the results which follow in the years and the cen-

turies which profit by their foresight and wisdom and self-sacrifice.

Thus is it here; and we honor Hiram Sibley to-day; not because he gave to Cornell University of his troublesome superfluity of wealth; not that he erected structures that his own State should have raised as her share of the great work inaugurated by the general government; not that he made it possible for the nation and the State and Cornell University to make good a promise to the people that neither the State would or the University otherwise could have at the time fulfilled, though the State had contracted with the general government to do so, and the University was ready to do all rightfully asked of it and that lay within its power. He did all this and more; but it is not all this that entitles him to our respect and these tributes. Contributing to Cornell University large sums of money; making it possible for her to place those buildings on her beautiful campus which were needed for the work to which she was pledged; giving opportunity to the sons of the farmers and of the mechanics of the State to secure the most practical and liberal education of the time; distributing libraries among colleges, giving schools to the South and the West; aiding the worthy poor in a thousand ways unknown to any one but himself; all these are admirable and beautiful deeds of righteousness; but while entitling the giver to love and honor, they are nevertheless not, in themselves alone, works which confer highest or most durable fame. We honor Hiram Sibley because, besides all this, he exhibited a foresight and a grasp in his plan which insured a future and continued growth of his beginning into mighty works for future days and generations. The world had just reached a point at which it was prepared to begin that newer development, in education of the people for the people's needs, anticipated by the wisest men from the earliest days, by Plato, by Aristotle, by Milton, by the Marquis of Worcester, by Comenius, by Richter, by John Scott



HIRAM SIBLEY.

Russell, and by Van Rensselaer, and Lawrence, and Sheffield.

When Ezra Cornell called his old antagonist in business, become his best friend, into the board of trustees of Cornell University, Hiram Sibley saw his opportunity and promptly seized upon it. He took as his share of the work the foundation of the Sibley College of mechanical engineering and the mechanic arts. He stepped into the place of honor and accepted those duties which the State had failed to perform; and Sibley College became the root and the sustaining trunk of an enterprise of such importance and of such possibilities as even the wise man who founded it probably little realized, even though before his death he had the pleasure of witnessing its first great expansion. In this splendid work Hiram Sibley had an earnest coadjutor in John L. Morris and his colleagues. He gave the seed, directed its planting, and provided for its cultivation; they did work which fell to them to do, and that beginning was thus made for which we here and now praise and honor the wisdom and liberality of the man who made it all possible at that time and in this place. He was happy in his opportunity, wise in his recognition of it, prompt and forceful in his seizure of it, liberal in his development of it. We are, even now, but beginning to see what that noble work may, if carefully and wisely promoted by his successors and theirs, become. It may easily be made to give to Cornell University the high privilege of becoming the center, for the United States, at least, of all educational work in these latest departments of a "complete and liberal" education; it may yet bring her the distinction, the highest of modern and coming times, of here becoming the mainspring of advances in applied science, the source and the support of the grandest developments of modern life.

Hiram Sibley lived to see this seed take root, to see the germination of the plant, and to witness a growth far beyond the limits which had been anticipated by him as possible within his lifetime. He saw it become a sturdy sapling; we have seen it within these few years grow to the altitude and the amplitude of a healthy young tree, splitting its bark in its rapid development

of new leaves and fresh twigs and wide-spreading branches and swelling trunk. But not the foresight of the founder himself, not the best judgment of his wisest successor, shall say where or when its growth shall cease, if well cared for. Give the young tree room for growth, a wholesome soil, and a healthy atmosphere in which to expand, and its best friends shall be astonished by its continued rise and spread, and its most earnest detractors shall be converted to admiration and to helpful sympathy by its good fruits and healthful influence.

Its roots and its branches already need more room, the soil is good and the atmosphere better than is usual; but more space, further enriching of the soil, more room for the branches, and a still more healthful atmosphere are to be hoped for. These given, the value and the magnitude of Hiram Sibley's gift to Cornell University, to his State, to the nation, and to the world, will never cease to impress more and more every friend of technical and liberal education with its usefulness, its importance, and its growth in all that constitutes a real basis for the fame of its founder.

Sibley College began twenty years ago as the germ of a struggling school of the mechanic arts, a higher sort of manual training school appended to a mixed course of instruction, neither an educational course nor a technical course in the full sense of the modern terms. Its students, half educated, half trained professionally, went out into a world less educated, less well trained, and made their several marks with force and decision, and began effectively to build up the reputation of their teachers and their alma mater. Seven years ago its progress was such as to justify its organization into a technical college of the highest type, and in three years more it had outgrown its boundaries, and its founder had the satisfaction of seeing it necessary to limit the entering classes while awaiting enlargement of its buildings. This done, he saw, before his death, in the following year, a renewed growth of unprecedented rapidity. The course had, meantime, been made a professional one, with work, at least a year above that ordinarily given in such courses, and such that graduates of technical schools in good standing find a full year often necessary for satisfactory prosecution of their work for the first degree.

To-day, this memorial of our friend, of the founder of Sibley College, is placed in presence of a hundred young men prepared to graduate from among five hundred beneficiaries of his noble work. The buildings erected by him, extensive as they are, are more than crowded with students, and double their capacity would be none too much for the coming years of this decade.

They are filled to overflowing with the most extensive equipment of its kind in the world, given by Hiram Sibley, by a hundred friends of his enterprise, and by his appreciative successors; yet double this unique outfit could well be utilized to-day, and no one can say what opportunity may come for still larger extension. A hundred farmers' sons, a hundred sons of mechanics, hundreds of the most ambitious of the young men of the day, are flocking to share this bounty. Hiram Sibley has indeed made a grand beginning, and it now remains for the nation, the State, and all the friends of this the greatest of the great social movements of our time to fittingly supplement his work.

This great work has another aspect still, which makes it a source of higher honor to Sibley and to his coadjutors than even that which we have just viewed so briefly. When the young senator of the State of New York accepted the first presidency of Cornell University, he came, not to do the routine work of the college president of a long established and slowly changing institution of classic learning, great and honorable as that grand work unquestionably is. He sought not the opportunity of promoting "the liberal and practical education" of the "industrial classes" alone; novel and mighty and attractive as such work must have been to every statesman and every thinking man of his time. He came to aid Ezra Cornell in organizing a "people's university," in the sense that it was to be a real, an all-embracing university, offering all the elements of complete and perfect education to all classes of people. He came to perform his splendid part in the erection of a true university; the like of which had been dreamed of, in misty and undefined form, by many a great soul in earlier days, but which had never before become concrete. This was work for a president of a great university that might well attract any patriotic, wise, and far-seeing man from even a greater work than that of making laws for the State or even for the nation.

When Henry W. Sage built the Sage College for Women, he added another element which brought Cornell University more nearly into perfect and complete form, which gave more nearly perfect symmetry of organization than had been attained by any earlier structure of this sort in the history of the world. When the same strong hand aided the university in its upbuilding by the erection of the Sage School of Philosophy, it was but another and grander approximation to that perfection and completeness. When the same hand, so often before working with White and Sibley and McGraw, in a common and glorious task, erected the library which stands, as a magnificent memorial of good, sought to be done, in the midst of these great buildings and on the edge of our beautiful campus, he gave a great and radiant center to the complete system which was gradually becoming evolved from the earlier educational chaos.

The enlarged departments, and the growth of the material and visible university, under the skillful guiding hands of the newly adjusted administration, promoted by the unprecedented labors of a still too small faculty, came forward with astonishing rapidity to give example to the world of that Miltonian education which the blind poet dreamed of as "complete and perfect."

How great the work here so well begun may be inferred when it is said that, to educate the existing body of American youth, as well as portions of the world are already prepared to educate their coming men, there should be founded, in the United States, to-day, no less than twenty technical universities, fifty trade schools, and two thousand high schools, including manual training and the "shop" systems in their curricula and preparation; while two thousand professors, with twenty-five thousand students, twenty

* An address delivered by R. H. Thurston, Director of Sibley College, Cornell University, June 15, 1892, on the occasion of the unveiling of a bust of the founder of that institution, in the chapel of Cornell University.