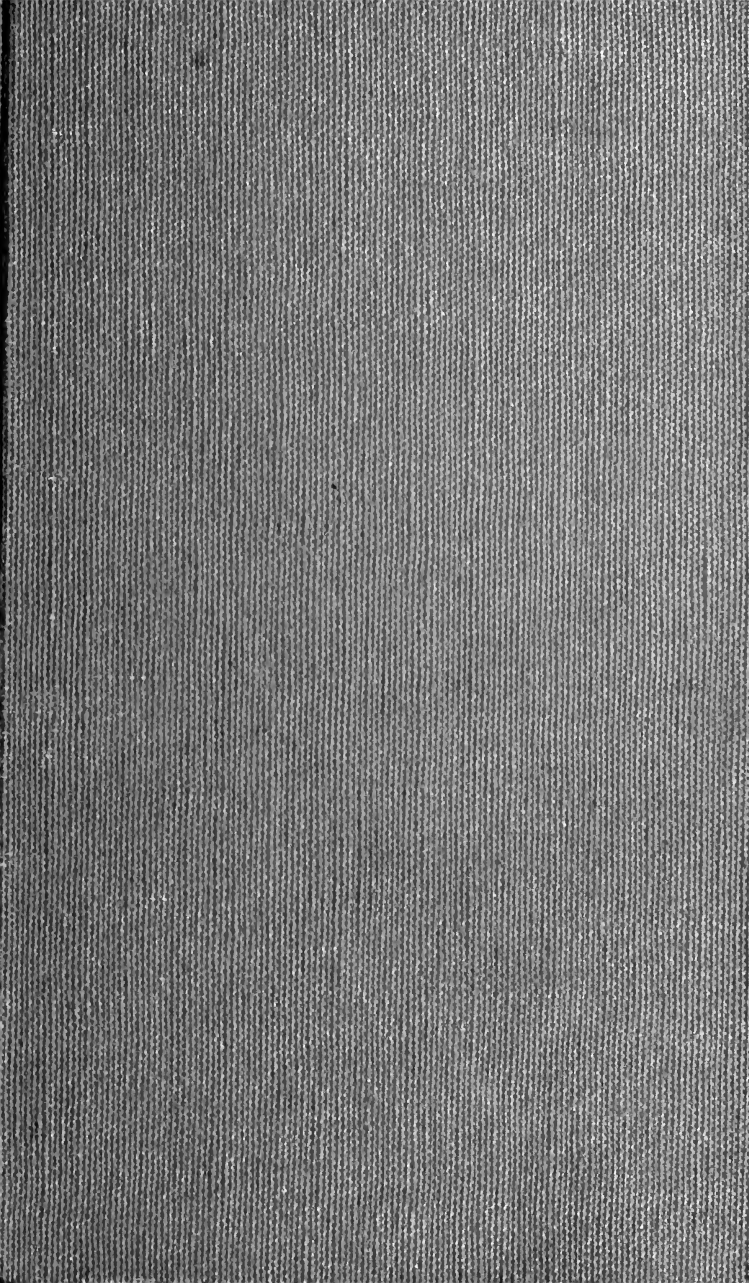

JAN 26 1972

SCC
2282

AN

ADDRESS

DELIVERED BEFORE THE

LITERARY SOCIETIES

OF

AMHERST COLLEGE.

August 25, 1835.

BY EDWARD EVERETT.

PUBLISHED BY REQUEST.

BOSTON:

RUSSELL, SHATTUCK, & WILLIAMS.

1835.

Entered according to the Act of Congress in the year 1835, by Russell, Shattuck, & Williams, in the Clerk's Office of the District Court of the District of Massachusetts.

J. D. FREEMAN, PRINTER.
No. 110 Washington Street.

ADDRESS.

The place of our meeting, the season of the year, and the occasion, which has called us together, seem to prescribe to us the general topics of our discourse. We are assembled within the precincts of a place of education. It is the season of the year, at which the seminaries of learning throughout the country are dismissing to the duties of life that class of their students, whose collegiate course is run. The immediate call, which has brought us together at this time, is the invitation of the members of the literary societies of this highly respectable and fast rising institution, who, agreeably to academical usage, on the eve of their departure from a spot endeared to them, by all the pleasant associations of collegiate life, are desirous, by one more act of literary communion, to strengthen the bond of intellectual fellowship and alleviate the regrets of separation. In the entire uncertainty of all that is before us, for good or for evil, there is nothing so nearly certain, as that we, who are here assembled to-day, shall never, in the Providence of God, be all brought together again in this world. Such an event is scarcely more within the range of probability, than that the individual drops, which, at this moment, make up the rushing stream of yonder queen of the valley, mounting in vapor to the clouds and scattered to the four winds, will, at some future period, be driven together and fall in rains upon the hills, and flow down and recompose the identical river, that is now spreading abundance and beauty, before our eyes. To say nothing of the dread summons, which comes to all when least expected, you will scarce step out of this sanctuary of your intellectual worship, before you will find how widely the paths of life di-

verge, not more so in the literal sense of the word, than in the estrangement, which results from variety of pursuit, opinion, party, and success. Influenced by the feelings, which this reflection inspires, it is natural that we should pause;—that we should give our minds up to the meditations, which belong to the place, to the occasion, and the day:—that we should inquire into the character of that general process, in which you are now taking so important a step;—that we should put our thoughts in harmony with the objects, that surround us, and thus seek from the hour as it flies, from the occasion, which once passed will never in all its accidents and qualifications return, to extract some abiding good impression, and to carry away some memorial, that will survive the moment.

The multiplication of the means of education and the general diffusion of knowledge, at the present day, are topics of universal remark. There are twelve collegiate institutions, in New England, whose commencement is observed, during the months of August and September, and which will send forth the present year, on an average estimate, about four hundred graduates. There are more than fifty other institutions of the same general character, in other parts of the United States. The greater portion of them are in the infancy of their existence and usefulness, but some of them compare advantageously with our New England institutions. Besides the colleges, there are the schools for theological, medical, and legal education, on the one hand; and on the other, the innumerable institutions for preparatory or elementary instruction, from the infant schools, to which the fond and careful mother sends her darling lisper, not yet quite able to articulate, but with the laudable purpose of getting him out of the way, up to the high schools and endowed academies, which furnish a competent education for all the active duties of life. Besides these establishments for education of various character and name,—societies for the promotion of useful knowledge, mechanics' institutes, lyceums, and voluntary courses of lectures, abound in many parts of the country, and perform a very important office, in carrying on the great work of instruction. Lastly, the press, by the cheap multiplication of books, and especially

by the circulation of periodical works of every form and description, has furnished an important auxiliary to every other instrument of education, and turned the whole community, so to say, into one great monitorial school. There is probably not a newspaper of any character published in the United States, which does not, in the course of the year, convey more useful information to its readers, than is to be found in the twenty-one folios of Albertus Magnus,—light as he was of the thirteenth century. I class all these agencies, under the general name of the means of education, because they form one grand system, by which knowledge is imparted to the mass of the community, and the mind of the age,—with the most various success according to circumstances,—is instructed, disciplined, and furnished with its materials for action and thought.

These remarks are made in reference to this country; but in some countries of Europe, all the means of education enumerated, with an exception perhaps in the number of newspapers, exist to as great an extent, as in our own. Although there are portions of Europe, where the starless midnight of the mind still covers society, with a pall as dreary and impervious, as in the middle ages, yet it may be safely said, upon the whole, that not only in America, but in the elder world, a wonderfully extensive diffusion of knowledge has taken place. In Great Britain, in France, in Germany, in Holland, in Sweden, in Denmark, the press is active, schools are numerous, higher institutions for education abound, associations for the diffusion of knowledge flourish, and literature and science, in almost every form, are daily rendered more cheap and accessible. There is in fact no country in Europe, from which the means of light are wholly shut out. There are universities in Austria and Russia, and newspapers at Madrid and Constantinople.

It is the impulse of the liberal mind to rejoice in this manifest progress of improvement, and we are daily exchanging congratulations with each other, on the multiplication throughout the world of the means of education. There are not wanting, however, those, who find a dark side even to such an object as this. We ought not therefore either to leave a matter so important exposed to vague prejudicial surmises, on

the one hand; nor on the other, should we rest merely in the impulses of liberal feeling and unreflecting enthusiasm. We should fortify ourselves, in a case of such magnitude, in an enlightened conviction. We should seek to reduce to an exact analysis the great doctrine, that the extension of the means of education and the general diffusion of knowledge are beneficial to society. It is the object of the present address to touch briefly,—and in the somewhat desultory manner required on such an occasion,—on some of the prominent points, involved in this great subject; and to endeavor to show that the diffusion of knowledge, of which we have spoken, is favorable to liberty, to science, and virtue;—to social, intellectual, and spiritual improvement; the only three things which deserve a name below.

I. Although liberty, strictly speaking, is only one of the objects, for which men have united themselves in civil societies, it is so intimately connected with all the others, and every thing else is so sunk in value, when liberty is taken away, that its preservation may be considered, humanly speaking, the great object of life in civilized communities. It is so essential to the prosperous existence of nations, that even where the theory of the government, as in many absolute monarchies, seems to subvert its very principle, by making it depend on the will of the ruler, yet usage, prescription, and a kind of beneficent instinct of the body politic, secure to the people some portion of practical liberty. Where political interests and passions do not interfere, (which they rarely do, in respect to the private rights of the mass of the community,) the subjects of the absolute monarchies of the north and east of Europe enjoy almost as large a share of liberty, as under some of what are called the constitutional governments, in their neighborhood. Where this is not the case, where a despotic theory of the government is carried out into a despotic administration; and life, rights, and property are habitually sacrificed to the caprice and passions of men in power, as in all the despotisms which stretch across Asia, from the Euxine to the Pacific, there the population is kept permanently degenerate, barbarous, and wretched.

Whenever we speak of liberty, in this connexion, we comprehend under it legal security for life, personal freedom, and property. As these are equally dear to all men; as all feel, with equal keenness and bitterness, the pang which extinguishes existence, the chain which binds the body, the coercion which makes one toil for another's benefit, it follows, as a necessary consequence, that all governments, which are hostile to liberty, are founded on force; that all despotisms are, what some by emphasis are occasionally called, *military despotisms*. The degree of force required to hold a population in subjection, other things being equal, is in inverse ratio to its intelligence and skill; its acquaintance with the arts of life; its sense of the worth of existence; in fine, to its spirit and character. There is a point indeed beyond which, the most thoroughly organized military despotism cannot be extended over the least intellectual race of subjects, serfs, or slaves. History presents us with the record of numerous servile wars and peasants wars, from the days of Spartacus to those of Tupac-Amaru and Pugatschef; in which, at the first outbreak, all the advantages of authority, arms, concert, discipline, skill, have availed the oppressor nothing, against humanity's last refuge, the counsel of madness, and the resources of despair.

There are two ways, in which liberty is promoted by the general diffusion of knowledge. The first is by disabusing the minds of men of the theoretical frauds, by which arbitrary governments are upheld. It is a remark almost, if not quite, without exception, that all governments unfriendly to well-regulated liberty are founded on the basis of some religious imposture; the arm of military violence is clothed with the enervating terrors of superstition. The Oriental nations, as far back as our accounts run, worshipped their despots as divinities, and taught this monstrous adulation to the successors of Alexander. The Roman emperors, from the time of Julius Cæsar, were deified; and the thrones of modern European absolutism rest on a basis a little more refined, but not more rational. The divine right of Henry VIII. or of Charles V. was no better, in the eye of an intelligent Christian, than that of their contemporary, Solyman the magnificent,—the Turkish Sultan.

Superstitions like these, resting, like all other superstitions,

on ignorance, vanish with the diffusion of knowledge, like the morning mists on yonder river before the rising sun; and governments are brought down to their only safe and just basis, the welfare and will of the governed. The entire cause of modern political reform has started in the establishment of this principle, and no example is more conspicuous than that which, for the magnitude of the revolution and the immensity of its consequences is called *The Reformation;* and which, on account of the temporal usurpations of the Church of Rome, the intrusion of its power into the affairs of foreign countries, and the right claimed by the Pope to command the obedience of subject and sovereign,—was not less a political than a religious revolution. Throughout this great work, the course and conduct of Luther present a most illustrious example of the efficacy of a diffusion of knowledge,—of an appeal to the popular mind,—in breaking the yoke of the oppressor and establishing a rational freedom. When he commenced the great enterprise, he stood alone. The governments acknowledged the supremacy of the Roman pontiff. The teachers of the universities and schools were, for the most part, regular priests, bound not only by the common tie of spiritual allegiance, but by the rules of the monastic orders to which they belonged. The books of authority were exclusively those of the schoolmen, implicitly devoted to the church, filled with fantastical abstractions, with a meagre and unprofitable logic, and written in a dead language. In this state of things, says Lord Bacon, "Martin Luther, conducted, no doubt, by a higher Providence, but in a discourse of reason, finding what a province he had undertaken against the bishop of Rome and the degenerate traditions of the church, and finding his own solitude, being no ways aided by the opinions of his own time, was enforced to awake all antiquity, and to call former times to his succor, to make a party against the present time. So that the ancient authors, both in divinity and humanity, which had long time slept in libraries, began generally to be read and revolved. This by consequence did draw on a necessity of a more exquisite travel in the languages original, wherein those authors did write, for a better understanding of those authors, and the better advantages of pressing and applying their words. And thereof grew again a delight in their

manner and style of phrase, and an admiration of that kind of writing; which was much furthered and precipitated by the enmity and opposition, that the propounders of those primitive, but seeming new, opinions had against the schoolmen, who were generally of the contrary part, and whose writings were altogether in a different style and form, taking liberty to coin and frame new terms of art to express their own sense, and to avoid circuit of speech, without regard to the pureness, pleasantness, and as I may call it, lawfulness of the phrase or word. And again, because the great labor then was with the people, of whom the Pharisees were wont to say, *execrabilis ista turba, quæ non novit legem;* for the winning and persuading them, there grew of necessity in chief price and request eloquence and variety of discourse, as the fittest and forciblest access into the capacity of the vulgar sort."*

With the greatest deference to the authority of Lord Bacon, I would say, that he seems to me to have mistaken the relative importance of the great instruments of the reformation. In the solemn loneliness, in which Luther found himself, he called around him not so much the masters of the Greek and Latin wisdom, through the study of the ancient languages, as he did the mass of his own countrymen, by his translation of the Bible. It would have been a matter of tardy impression and remote efficacy, had he done no more than awake from the dusty alcoves of the libraries the venerable shades of the classic teachers. He roused up a population of living sentient men, his countrymen, his brethren. He might have written and preached in Latin to his dying day, and the elegant Italian scholars, champions of the church, would have answered him in Latin better than his own;—and with the mass of the people, the whole affair would have been a contest between angry and loquacious priests. "Awake all antiquity from the sleep of the libraries?" He awoke all Germany, and half Europe from the scholastic sleep of an ignorance worse than death. He took into his hands not the oaten pipe of the classic muse; he moved to his great work, not

———— to the Dorian mood
Of flutes and soft recorders:—

* Lord Bacon's Works, Vol. I. p. 14, quarto ed.

He grasped the iron trumpet of his mother tongue,—(the good old Saxon from which our own is descended, the language of noble thought and high resolve,) and blew a blast that shook the nations, from Rome to the Orkneys. Sovereign, citizen, and peasant, started at the sound; and in a few short years, the poor monk, who had begged his bread, for a pious canticle, in the streets of Eisenach,*—no longer friendless, no longer solitary,—was sustained by victorious armies, countenanced by princes, and what is a thousand times more precious than the brightest crown in Christendom, revered as a sage, a benefactor, and a spiritual parent, at the firesides of millions of his humble and grateful countrymen.

Nor do we less plainly see in this, as in numerous other examples in the modern history of liberty, the more general operation of the influences, by which the diffusion of knowledge promotes rational freedom. Simply to overturn the theoretical sophisms upon which any particular form of despotism may rest, is but to achieve a temporary work. While the mass of the people remain ignorant,—to undermine the system of oppression, political or ecclesiastical, under which at any time they may labor, is but to stagger darkling from one tyranny to another. It is for this reason,—a truth too sadly exemplified in the history of the world for the last fifty years,—that countries, in which the majority of the people have grown up without knowledge, stung to madness by intolerable oppression, may make a series of plunges, through scenes of successive revolution and anarchy, and come out at last drenched in blood, and loaded with chains.

We must therefore trace the cause of political slavery beyond the force which is the immediate instrument;—beyond the superstition which is its puissant ally;—beyond the habit and usage, the second nature of governments as of men,—and we shall find it in that fatal inequality, which results from hereditary ignorance. This is the ultimate, the broad, the solid foundation of despotism. A few are wise, skilful, learned, wealthy; millions are uninformed and consequently unconscious of their rights. For a few are concentrated the delights, the honors, and the excitements of life;—for all the

* Luther's Werke, Th. x. 524.

rest remains a heritage of unenlightened subjection and unrewarded toil.

Such is the division of the human race in all the oriental despotisms, at the present day. Such it was in all Europe, in the middle ages. Such in some parts of Europe it still is: such it naturally must be every where, under institutions which keep the mass of the people ignorant. A nation is numerically reckoned at its millions of souls. But they are not souls; the greater part are but bodies. God has given them souls, but man has done all but annihilate the immortal principle:—its life-spring, its vigor, its conscious power are broken down, and the people lie buried in subjection, till through the medium of the understanding, a new creation takes place. The physical creation began with light; the intellectual and moral creation begins with light also. Chosen servants of Providence are raised up to speak the word; power is given to political or religious reformers to pronounce the decree; it spreads like the elemental beam, by the thousand channels of intelligence, from mind to mind, and a new race is created. Let there be light; let those rational intellects begin to think. Let them but look in upon themselves and see that they are men, and look upon their oppressors and see if they are more. Let them look round upon Nature;—'it is my father's domain, shall not my patient labor be rewarded with its share?' Let them look up to the heavens;—'has He that upholds their glorious orbs, and who has given me the capacity to trace and comprehend their motions, designed me to grovel, without redemption, in the dust beneath my feet, and exhaust my life for a fellow-man no better than myself?'

These are the truths, which in all ages shoot through the understandings to the hearts of men: they are what our revolutionary fathers called "first principles;" and they prepared the way for the revolution. All that was good in the French revolution was built upon them. They are the corner-stone of modern English liberty; they emancipated the Netherlands and the Swiss Cantons; and they gave to republican Greece and Rome that all but miraculous influence in human affairs,—which succeeding ages of civil discord, of abuse, and degeneracy have not yet been able to countervail. They redress the

inequalities of society. When penetrated with these great conceptions, the people assert their native worth and inherent rights, it is wonderful to behold how the petty badges of social inequality, the emblems of rank and of wealth, are contemned. Cincinnatus, who saved Rome from the Æqui and Volsci, was found ploughing his own land, a farm of four acres, when created dictator; and Epaminondas, who rescued his country from the domination of Sparta, and was implored by the emissaries of the king of Persia to do their master the honor to take his bribes, possessed no other property, when he fell gloriously at Mantinæa, than the humble utensils for cooking his daily food. A single bold word, heroic exploit, or generous sacrifice, at the fortunate crisis, kindles the latent faculties of a whole population, turns them from beasts of burden into men; excites to intense action and sympathetic counsel millions of awakened minds, and leads them forth to the contest. When such a development of mental energy has fairly taken place, the battle is fought and won. It may be long and deadly, it may be brief and bloodless. Freedom may come quickly in robes of peace, or after ages of conflict and war; but come it will, and abide it will, so long as the principles by which it was acquired are held sacred.

Nor let us forget, that the dangers to which liberty is exposed are not all, on the side of arbitrary power. That popular intelligence, by which the acquisition of rational freedom is to be made, is still more necessary to protect it against anarchy. Here is the great test of a people, who deserve their freedom. Under a parental despotism, the order of the state is preserved, and life and property are protected, by the strong arm of the government. A measure of liberty,—that is, safety from irregular violence,—is secured by the constant presence of that military power, which is the great engine of subjection. But beneath a free government, there is nothing but the intelligence of the people to keep the people's peace. Order must be preserved, not by a military police or regiments of horse-guards; but by the spontaneous concert of a well-informed population, resolved that the rights, which have been rescued from despotism, shall not be subverted by anarchy. As the disorder of a delicate system, and the degeneracy of

a noble nature are spectacles more grievous than the corruption of meaner things, so if we permit the principle of our government to be subverted, havoc, terror, and destruction, beyond the measure of ordinary political catastrophes will be our lot. This is a subject of intense interest to the people of the United States at the present time. To no people since the world began, was such an amount of blessings and privileges ever given in trust. No people was ever so eminently made the guardians of their own rights ; and if this great experiment of rational liberty should here be permitted to fail, I know not where or when among the sons of Adam, it will ever be resumed.

II. But it is more than time to proceed to the second point, which I proposed briefly to illustrate,—the favorable influence of the extension of the means of education and the diffusion of knowledge, on the progress of sound science. It is a pretty common suggestion, that while the more abundant means of popular education, existing at the present day, may have occasioned the diffusion of a considerable amount of superficial knowledge, the effect has been unfavorable to the growth of profound science. I am inclined to think this view of the subject entirely erroneous :—an inference by no means warranted by the premises from which it is drawn. It is no doubt true, that, in consequence of the increased facilities for education, the number of students of all descriptions, both readers and writers, is almost indefinitely multiplied, and with this increase in the entire number of persons who have enjoyed, in a greater or less degree, advantages for improving their minds, the number of half-taught and superficial pretenders has become proportionably greater. Education, which, at some periods of the world, has been a very rare accomplishment of a highly gifted and fortunate few ; at other times, an attainment attended with considerable difficulty, and almost confined to professed scholars ; has become, in this country at least, one of the public birthrights of freemen, and like every other birthright, is subject to be abused. In this state of things, those, who habitually look at the dark side of affairs,—often witnessing the arrogant displays of superficial learning,—books

of great pretension and little value, multiplied and circulated, by all the arts and machinery of an enterprising and prosperous age, and in all things much forwardness and show, often unaccompanied by worth and substance, are apt to infer a decline of sound learning, and look back, with a sigh, to what they imagine to have been the more solid erudition of former days. But I deem this opinion without real foundation, in truth.

It is an age, I grant, of cheap fame. A sort of literary machinery exists, of which the patent paper-mill, the power-press, the newspapers, magazines and reviews; the reading clubs and circulating libraries are some of the principal springs and levers, by means of which almost any thing, in the shape of a book, is thrown into a sort of notoriety, miscalled reputation. The weakest distillation of soft sentiment from the poet's corner flows round a larger circle of admirers, than Paradise Lost, when first ushered to the world; and the most narcotic infliction of the quarterly critical press, (*absit invidia verbo*), no doubt far excels the *Novum Organum* in the number of its contemporary readers. But nothing is to be inferred from this state of things, in disparagement of the learning and scholarship of the age. All that it proves is, that with a vast diffusion of useful knowledge,—with an astonishing multiplication of the means of education, and, as I firmly believe, with a prodigious growth of true science, there has sprung up, by natural association, a host of triflers and pretenders, like a growth of rank weeds, with a rich crop, on a fertile soil.

But there were surely always pretenders in science and literature, in every age of the world; nor must we suppose, because their works and their names have perished, that they existed in a smaller proportion formerly than now. Solomon intimates a complaint of the number of books in his day, which he probably would not have done, if they had been all good books. The sophists in Greece were sworn pretenders and dealers in words,—the most completely organized body of learned quacks that ever existed. Bavius and Mævius were certainly not the only worthless poets in Rome; and from the age of the grammarians and critics of the Alexandrian school, through that of the monkish chroniclers and the schoolmen of

the middle ages, and the mystics of the sixteenth and seventeenth centuries, the kingdom of learned dulness and empty profession has been kept up, under an unbroken succession of leaden or brazen potentates. If the subjects at the present day seem more numerous than formerly, it is only in proportion to the increase in the entire numbers of the reading and writing world; and because the sagacious hand of time brushes away the false pretensions of former days, leaving real talent and sound learning the more conspicuous for standing alone.

But, as in elder days, notwithstanding this unbroken sway of false lore and vain philosophy, the line of the truly wise and soundly learned was also preserved entire; as the lights of the world have in all former ages successively risen, illuminating the deep darkness, and outshining the delusive meteors; so, at the present day, I am firmly convinced that there is more patient learning, true philosophy, fruitful science, and various knowledge, than at any former time. By the side of the hosts of superficial, arrogant, and often unprincipled pretenders, in every department, there is a multitude innumerable of the devoted lovers of truth, whom no labor can exhaust, no obstacles can discourage, no height of attainment dazzle; and who, in every branch of knowledge, sacred and profane, moral, physical, exact, and critical, have carried and are carrying the glorious banner of true science, into regions of investigation wholly unexplored in elder times. Let me not be mistaken. I mean not arrogantly to detract from the fame of the few great masters of the mind,—the gifted few, who, from age to age, after long centuries have intervened, have appeared; and have risen, as all are ready to allow, above all rivalry. Aftertime alone can pronounce whether this age has produced minds worthy to be classed in their select circle. But this aside,—I cannot comprehend the philosophy by which we assume as probable, nor do I see the state of facts, by which we must admit as actually existing, an intellectual degeneracy at the present day, either in Europe or in this country. I see not why the multiplication of popular guides to partial attainments, —why the facilities, that abound for the acquisition of superficial scholarship, should, in the natural operation of things, either diminish the number of powerful and original minds, or

satisfy their ardent thirst for acquisition, by a limited progress. There is no doubt that many of these improvements in the methods of learning,—many of the aids to the acquisition of knowledge, which are the product of the present time, are, in their very nature, calculated to help the early studies even of minds of the highest order. It is a familiar anecdote of James Otis, that, when he first obtained a copy of Blackstone's Commentaries, he observed with emphasis, that if he had possessed that book when commencing his studies of the law, it would have saved him seven years' labor. Would those seven years have borne no fruit to a mind like that of James Otis? Though the use of elementary treatises of this kind may have the effect to make many superficial jurists, who would otherwise have been no jurists at all, I deem it mere popular prejudice to suppose, that the march of original genius to the heights of learning has been impeded, by the possession of these modern facilities to aid its progress. To maintain this seems to be little else than to condemn as worthless the wisdom of the ages, which have gone before us. It is surely absurd to suppose that we can do no more with the assistance of our predecessors, than without it; that the teachings of one generation, instead of enlightening, confound and stupify that which succeeds; and that "when we stand on the shoulders of our ancestors, we cannot see so far as from the ground." On the contrary, it is unquestionably one of the happiest laws of intellectual progress, that the judicious labors, the profound reasonings, the sublime discoveries, the generous sentiments of great intellects, rapidly work their way into the common channel of public opinion, find access to the general mind, raise the universal standard of attainment, correct popular errors, promote arts of daily application, and come home at last to the fireside, in the shape of increased intelligence, skill, comfort and virtue; which, in their turn, by an instantaneous reaction, multiply the numbers and facilitate the efforts of those who engage in the farther investigation and discovery of truth. In this way, a constant circulation, like that of the life-blood, takes place in the intellectual world. Truth travels down from the heights of philosophy to the humblest walks of life, and up from the simplest perceptions of an awakened intellect to the discoveries, which

almost change the face of the world. At every stage of its progress it is genial, luminous, creative. When first struck out by some distinguished and fortunate genius, it may address itself only to a few minds of kindred power. It exists then only in the highest forms of science; it corrects former systems, and authorizes new generalizations. Discussion, controversy begins; more truth is elicited, more errors exploded, more doubts cleared up, more phenomena drawn into the circle, unexpected connexions of kindred sciences are traced, and in each step of the progress, the number rapidly grows of those who are prepared to comprehend and carry on some branches of the investigation,—till, in the lapse of time, every order of intellect has been kindled, from that of the sublime discoverer to the practical machinist; and every department of knowledge been enlarged, from the most abstruse and transcendental theory to the daily arts of life.

I presume it would not be difficult to deduce, from the discovery and demonstration of the law of gravity, attainments in useful knowledge, which come home every day to the business and bosoms of men; enlightening the mass of the community, who have received a common education, on points, concerning which the greatest philosophers of former times were at fault. Bold as the remark sounds, there is not a young man who will tomorrow receive his degree on this stage, who could not correct Lord Bacon in many a grave point of natural science. His lordship questioned the rotation of the earth on its axis, after it had been affirmed by Copernicus, Kepler, and Galileo. He states positively, that he judges the work of making gold possible,* and even goes so far, after condemning the procedure of the alchemists, as to propound his own. Finally, he says, it "is not impossible, and I have heard it verified, that upon cutting down of an old timber tree, the stub hath put out sometimes a tree of another kind, as that beech hath put forth birch:" "which, if it be true," the immortal chancellor discreetly adds, "the cause may be, for that

* "The world hath been much abused by the opinion of making gold. The work itself I judge to be possible, but the means hitherto propounded to effect it are in the practice full of error and imposture, and in the theory full of unsound imaginations." Lord Bacon's Works, Vol. 1. p. 204.

the old stub is too scanty of juice to put forth the former tree, and therefore putteth forth a tree of a smaller kind, that needeth less nourishment."* Surely no man can doubt that the cause of true science has been promoted by such a diffusion of knowledge, as has eradicated even from the common mind such enormous errors as these, from which, notwithstanding their enormity, the greatest minds of other times could not emancipate themselves. It is extremely difficult even for the boldest intellects to work themselves free of all those popular errors, which form a part as it were of the intellectual atmosphere, in which they have passed their lives. Copernicus was one of the boldest theorists that ever lived, but was so enslaved by the existing popular errors, as even while proposing his own simple and magnificently beautiful theory of the heavens, to retain some of the most absurd and complicated contrivances of the Ptolemaic scheme.† Kepler was one of the most sagacious and original of philosophers, and the laws which bear his name have been declared on respectable authority "the foundations of the whole theory of Newton;" but he believed that the planets were monstrous animals, swimming in the ethereal fluid, and speaks of storms and tempests as the pulmonary heavings of the great Leviathan, the earth, breathing out hurricanes from its secret spiracles, in the valleys and among the hills. It may raise our admiration of this extraordinary man, that with notions so confused and irrational, he should, by a life of indefatigable research, discover some of the sublimest laws of nature; but no one can so superstitiously reverence the past,—no one so blindly undervalue the utility of the diffusion of knowledge,—as not to feel that these absurdities must have hung like a millstone about the necks of the strongest minds of former ages, and dragged them in the midst of their boldest flights to the dust. When I behold minds like these, fitted to range, with the boldest step, in the paths of investigation, bound down by subjection to gross prevailing errors; but at length, by a happy effort of native sense or successful study, grasping at the discovery of

* Lord Bacon's Works, Vol. I. p. 241.

† Dr. Small's Account of the Astronomical Discoveries of Kepler, chap. III. and VIII.

some noble truth, it brings to my mind Milton's somewhat fantastical description of the creation of the animals, in which the great beasts of the forest, not wholly formed, are striving to be released from their native earth,

> now half appeared
> The tawny lion, struggling to get free
> His hinder parts, then springs, as burst from bonds,
> And rampant shakes his brinded mane.

In short, when we consider the laws of the human mind, and the path, by which the understanding marches to the discovery of truth, we must see that it is the necessary consequence of the general diffusion of knowledge, that it should promote the progress of science. Since the time of Lord Bacon, it has been more and more generally admitted, that the only path to true knowledge is the study and observation of nature, either in the phenomena of the external creation, or in the powers and operations of the human mind. This does not exclude the judicious use of books, which record the observations and the discoveries of others, and are of inestimable value in guiding the mind in its own independent researches. They are, in fact, not its necessary, but its most usual instruments ; and as the book of nature is never so well perused, as with the assistance of the learned and prudent, who have studied it before us, so the true and profitable use of books is to furnish materials, on which other minds can act, and to facilitate their observation of nature.

I know not where I could find a better illustration of their value, and of their peculiar aptitude to further the progress of knowledge, than in the admirable report on the geology of Massachusetts, which has recently emanated from this place.* Under the enlightened patronage of the commonwealth, a member of the faculty of this institution has set before the citizens of the state, such a survey of its territory,—such an inventory of its natural wealth,—such a catalogue of its productions in the animal, the vegetable, and still more in the mineral world, as cannot be contemplated without gratification and pride. By one noble effort of learned industry and

* Report on the geology, mineralogy, botany, and zoology of Massachusetts, by Prof. Hitchcock.

vigorous intellectual labor, the whole science of geology, one of the great mental creations of modern times, has been brought home and applied to the illustration of our native state. There is not a citizen, who has learned to read, in the humblest village of Massachusetts, from the hills of Berkshire to the sands of Nantucket, who has not now placed within his reach, the means of beholding with a well-informed eye, either in his immediate neighborhood, or in any part of the State to which he may turn his attention, the hills and the vales, the rocks and the rivers, the soil and the quarries that lie beneath it. Who can doubt that out of the hundreds,—the thousands,—of liberal minds, in every part of the Commonwealth, which must thus be awakened to the intelligent observation of nature, thus helped over the elementary difficulties of the science, not a few will be effectually put upon the track of independent inquiries and original attainments in science!

We are confirmed in the conclusion that the popular diffusion of knowledge is favorable to the growth of science, by the reflection, that vast as the domain of learning is, and extraordinary as is the progress, which has been made in almost every branch, it may be assumed as certain, I will not say that we are in its infancy, but, as truth is as various as nature, and as boundless as creation, that the discoveries already made, wonderful as they are, bear but a small proportion to those that will hereafter be effected. In the yet unexplored wonders and yet unascertained laws of the heavens; in the affinities of the natural properties of bodies,—in magnetism, galvanism, and electricity,—in light and heat,—in the combination and application of the mechanical powers,—the use of steam, the analysis of mineral products, of liquid and äeriform fluids,—in the application of the arts and sciences to improvements in husbandry, to manufactures, to navigation, to letters, and to education;—in the great department of the philosophy of the mind, and the realm of morals;—and in short, to every thing that belongs to the improvement of man, there is yet a field of investigation broad enough to satisfy the most eager thirst for knowledge, and diversified enough to suit every variety of taste, order of intellect, or degree of qualification. For the

peaceful victories of the mind, that unknown and unconquered world, for which Alexander wept, is forever near at hand; hidden indeed as yet behind the veil, with which nature shrouds her undiscovered mysteries, but stretching all along the confines of the domain of knowledge, sometimes nearest when least suspected.—The foot has not yet pressed, nor the eye beheld it; but the mind, in its deepest musings, in its widest excursions, will sometimes catch a glimpse of the hidden realm—a gleam of light from the Hesperian island—a fresh and fragrant breeze from off the undiscovered land,

Sabæan odors from the spicy shore,

which happier voyagers in aftertimes, shall approach, explore, and inhabit. Who has not felt when, with his very soul concentred in his eyes, while the world around him is wrapped in sleep, he gazes into the holy depths of the midnight heavens, or wanders in contemplation among the worlds and systems, that sweep through the immensity of space,—who has not felt as if their mystery must yet more fully yield to the ardent, unwearied, imploring research of patient science? Who does not, in those choice and blessed moments, in which the world and its interests are forgotten, and the spirit retires into the inmost sanctuary of its own meditations, and there, unconscious of every thing but itself and the infinite Perfection, of which it is the earthly type, and kindling the flame of thought on the altar of prayer, who does not feel in moments like these, as if it must at last be given to man, to fathom the great secret of his own being; to solve the mighty problem

Of providence, foreknowledge, will, and fate?

When I think in what slight elements the great discoveries, that have changed the condition of the world, have oftentimes originated; on the entire revolution in political and social affairs, which has resulted from the use of the magnetic needle; on the world of wonders, teeming with the most important scientific discoveries, which has been opened by the telescope; on the all-controlling influence of so simple an invention as that of movable metallic types,—on the effects of the invention of gunpowder, no doubt the casual result of some idle experiment in alchemy; on the consequences that have resulted and are likely to result from the application of the vapor of boiling

water to the manufacturing arts, to navigation, and transportation by land; on the results of a single sublime conception in the mind of Newton, on which he erected, as on a foundation, the glorious temple of the system of the heavens;—in fine, when I consider how, from the great master-principle of the philosophy of Bacon,—the induction of Truth from the observation of Fact,—has flowed, as from a living fountain, the fresh and still swelling stream of modern science, I am almost oppressed with the idea of the probable connexion of the truths already known, with great principles which remain undiscovered;—of the proximity, in which we may unconsciously stand, to the most astonishing though yet unrevealed mysteries of the material and intellectual world.

If after thus considering the seemingly obvious sources from which the most important discoveries and improvements have sprung, we inquire into the extent of the field, in which farther discoveries are to be made, which is no other and no less than the entire natural and spiritual creation of God,—a grand and lovely system, even as we imperfectly apprehend it; but no doubt most grand, lovely and harmonious, beyond all that we now conceive or imagine;—when we reflect that the most insulated, seemingly disconnected, and even contradictory parts of the system are, no doubt, bound together as portions of one stupendous whole;—and that those, which are at present the least explicable, and which most completely defy the penetration hitherto bestowed upon them, are as intelligible in reality, as that which seems most plain and clear; that as every atom in the universe attracts every other atom and is attracted by it, so every truth stands in harmonious connexion with every other truth;—we are brought directly to the conclusion, that every portion of knowledge now possessed, every observed fact, every demonstrated principle is a clew, which we hold by one end in the hand, and which is capable of guiding the faithful inquirer farther and farther into the inmost recesses of the labyrinth of nature. Ages on ages *may* elapse, before it conduct the patient intellect to the wonders of science, to which it will eventually lead him; and perhaps with the next step he takes, he will reach the goal, and principles, destined to affect the condition of millions beam in characters of light upon his understanding. What was at once more unexpected and more

obvious, than Newton's discovery of the nature of light? Every living being, since the creation of the world, had gazed on the rainbow; to none had the beautiful mystery revealed itself. And even the great philosopher himself, while dissecting the solar beam, while actually untwisting the golden and silver threads that compose the ray of light,—laid open but half its wonders. And who shall say that to us, to whom, as we think, modern science has disclosed the residue, truths more wonderful than those now known, will not yet be revealed?

It is therefore by no means to be inferred, because the human mind has seemed to linger for a long time around certain results,—as ultimate principles,—that they and the principles closely connected with them are not likely to be pushed much farther; nor on the other hand, does the intellect always require much time to bring its noblest fruits to seeming perfection. It was, I suppose, two thousand years from the time when the peculiar properties of the magnet were first observed, before it became, through the means of those qualities, the pilot which guided Columbus to the American continent. Before the invention of the compass could take full effect, it was necessary that some navigator should practically and boldly grasp the idea, that the globe is round. The two truths are apparently without connexion; but in their application to practice, they are intimately associated. Hobbes says that Dr. Harvey, the illustrious discoverer of the circulation of the blood, is the only author of a great discovery, who ever lived to see it universally adopted. To the honor of subsequent science, this remark could not now, with equal truth, be made. Nor was Harvey himself without some painful experience of the obstacles, arising from popular ignorance, against which truth sometimes forces its way to general acceptance. When he first proposed the beautiful doctrine, his practice fell off; people would not continue to trust their lives in the hands of such a dreamer. When it was firmly established and generally received, one of his opponents published a tract *de circulo sanguinis Salomoneo*, and proved from the twelfth chapter of Ecclesiastes, that the circulation of the blood was no secret in the time of Solomon. The whole doctrine of the Reformation may be found in the writings of Wiclif; but

neither he nor his age felt the importance of his principles, nor the consequences to which they led. Huss had studied the writings of Wiclif in manuscript, and was in no degree behind him, in the boldness with which he denounced the papal usurpations. But his voice was not heard beyond the mountains of Bohemia;—and he expired in agony at the stake, and his ashes were scattered upon the Rhine. A hundred years passed away. Luther, like an avenging angel, burst upon the world, and denounced the corruptions of the church, and rallied the host of the faithful, with a voice which might almost call up those ashes from their watery grave, and form and kindle them again into a living witness to the truth.

Thus Providence, which has ends innumerable to answer, in the conduct of the physical and intellectual, and as of the moral world, sometimes permits the great discoverers fully to enjoy their fame; sometimes to catch but a glimpse of the extent of their achievements; and sometimes sends them dejected and heart-broken to the grave, unconscious of the importance of their own discoveries, and not merely undervalued by their contemporaries but by themselves. It is plain that Copernicus, like his great contemporary, Columbus, though fully conscious of the boldness and the novelty of his doctrine, saw but a part of the changes it was to effect in science. After harboring in his bosom for long, long years that pernicious heresy,—the solar system,—he died on the day of the appearance of his book from the press. The closing scene of his life, with a little help from the imagination, would furnish a noble subject for an artist. For thirty-five years he has revolved and matured in his mind, his system of the heavens. A natural mildness of disposition bordering on timidity, a reluctance to encounter controversy, and a dread of persecution, have led him to withhold his work from the press; and to make known his system but to a few confidential disciples and friends. At length he draws near his end; he is seventy-three years of age, and he yields his work on "the Revolutions of the heavenly orbs" to his friends for publication. The day at last has come, on which it is to be ushered into the world. It is the twenty-fourth of May, 1543. On that day,—the effect no doubt of the intense excitement of his mind, operating upon an ex-

hausted frame,—an effusion of blood brings him to the gates of the grave. His last hour has come; he lies stretched upon the couch, from which he will never rise, in his apartment at the Canonry at Frauenberg, East Prussia. The beams of the setting sun glance through the gothic windows of his chamber; near his bed-side is the armillary sphere, which he has contrived to represent his theory of the heavens,—his picture painted by himself, the amusement of his earlier years, hangs before him; beneath it his Astrolabe and other imperfect astronomical instruments; and around him are gathered his sorrowing disciples. The door of the apartment opens;—the eye of the departing sage is turned to see who enters: it is a friend, who brings him the first printed copy of his immortal treatise. He knows that in that book, he contradicts all that had ever been distinctly taught by former philosophers:—he knows that he has rebelled against the sway of Ptolemy, which the scientific world had acknowledged for a thousand years;—he knows that the popular mind will be shocked by his innovations;—he knows that the attempt will be made to press even religion into the service against him; but he knows that his book is true. He is dying, but he leaves a glorious truth, as his dying bequest to the world. He bids the friend, who has brought it, place himself between the window and his bed-side, that the sun's rays may fall upon the precious volume, and he may behold it once, before his eye grows dim. He looks upon it, takes it in his hands, presses it to his breast, and expires. But no, he is not wholly gone! A smile lights up his dying countenance; a beam of returning intelligence kindles in his eye;—his lips move;—and the friend, who leans over him, can hear him faintly murmur the beautiful sentiments, which the Christian lyrist, of a later age, has so finely expressed in verse;—

> Ye golden lamps of heaven! farewell, with all your feeble light,
> Farewell, thou ever-changing moon, pale empress of the night!
> And thou, refulgent orb of day, in brighter flames arrayed,
> My soul, which springs beyond thy sphere, no more demands thy aid.
> Ye stars, are but the shining dust of my divine abode,
> The pavement of those heavenly courts, where I shall reign with God.

So died the great Columbus of the heavens. His doctrine, at first, for want of a general diffusion of knowledge, forced its

way with difficulty against the deep-rooted prejudices of the age. Tycho Brake attempted to restore the absurdities of the Ptolemaic system; but Kepler, with a sagacity, which more than atones for all his strange fancies, laid hold of the theory of Copernicus, with a grasp of iron, and dragged it into repute. Galileo turned his telescope to the heavens, and observed the phases of Venus, which Copernicus boldly predicted must be discovered, as his theory required their appearance; and lastly Newton arose, like a glorious sun, scattering the mists of doubt and opposition, and ascended the heavens full-orbed and cloudless, establishing at once his own renown and that of his predecessors, and crowned with the applauses of the world; but declaring, with that angelic modesty which marked his character, "I do not know what I may appear to the world; but to myself I seem to have been only like a boy, playing on the sea-shore, and diverting myself in finding now and then a pebble, or a prettier shell than ordinary, while the great ocean of truth lay all undiscovered before me."*

But whether the progress of any particular discovery toward a general reception be prompt or tardy, it is one of the laws of intellectual influence, as it is one of the great principles, on which we maintain, that the general diffusion of knowledge is favorable to the growth of science, that whatsoever be the fortune of inventors and discoverers, the invention and discovery are immortal,—the teacher dies in honor or neglect, but his doctrine survives. Faggots may consume his frame, but the truths he taught, like the spirit it enclosed, can never die. Partial and erroneous views may even retard his own mind, in the pursuit of a fruitful thought;—but the errors of one age are the guides of the next; and the failure of one great mind but puts its successor on a different track, and teaches him to approach the object from a new point of observation.

In estimating the effect of a popular system of education upon the growth of science, it is necessary to bear in mind a circumstance, in which the present age and that which preceded it, are strongly discriminated from former periods; and that is the vastly greater extent, to which science exists among men, who do not desire to be known to the world as authors.

* Brewster's Life of Sir Isaac Newton, p. 301.

Since the dawn of civilization on Egypt and Asia Minor, there never have been wanting individuals, sometimes many flourishing at the same time,—who have made the most distinguished attainments in knowledge. Such, however, has been the condition of the world, that they formed a class by themselves. Their knowledge was transmitted in schools, often under strict injunctions of secrecy; or if recorded in books,—for want of the press and owing to the constitution of society,—it made but little impression on the mass of the community and the business of life. As far as there is any striking exception to this remark, it is in the *free states* of antiquity, in which through the medium of the popular organization of the governments, and the necessity of constant appeals to the people, the cultivated intellect was brought into close association with the understandings of the majority of men. This fact may perhaps go far to explain the astonishing energy and enduring power of the Grecian civilization, which remains to this day, after all that has been said to explain it, one of the most extraordinary facts in the history of the human mind. But from the period of the downfall of the Roman republic, and more especially after the establishment of the feudal system, the division of the community into four *castes*, viz. the landed aristocracy, or nobles and gentry; the spiritual aristocracy or priesthood; the inhabitants of the cities; and the peasantry; (a division, which has in modern Europe been considerably modified,—in some countries more, and in some less,—but in none wholly obliterated,)—the action and manifestation of knowledge were, till a comparatively recent period, almost monopolized by the two higher classes; and in their hands it assumed in a great degree a literary, by which I mean, a book form. Such, of course, must ever, with reasonable qualifications, continue to be the case; and books will ever be, in a great degree, the vehicle, by which knowledge is to be communicated, preserved and transmitted.

But it is impossible to overlook the fact,—it is one of the most characteristic features of the civilization of the age, that this is far less *exclusively* the case, than at any former period. The community is filled with an incalculable amount of unwritten knowledge, of science which never will be committed to paper by the active men who possess it, and which has been

acquired on the basis of a good education, by observation, experience, and the action of the mind itself. A hundred and fifty years ago, it is doubtful whether, out of the observatories and universities, there were ten men in Europe who could ascertain the longitude by lunar observation. At the present day, scarce a vessel sails to foreign lands, in the public or mercantile service, in which the process is not understood. In like manner, in our manufacturing establishments, in the construction and direction of railroads and canals, on the improved farms throughout the country, there is possessed, embodied, and brought into action, a vast deal of useful knowledge, of which its possessors will never make a literary use, for the composition of a book, but which is daily employed to the signal advantage of the country. Much of it is directly derived from a study of the great book of nature, whose pages are written by the hand of God; and in no part of the civilized world, has it been more faithfully or profitably studied than in New England. The intelligent population of the country, furnished with the keys of knowledge at our institutions of education, have addressed themselves to the further acquisition of useful science,—to its acquisition at once and application,—with a vigor, a diligence, a versatility, and a success, which are the admiration of the world.

Let it not be supposed, that I wish to disconnect this diffusive science, from that which is recorded and propagated in books; to do this would be to reverse the error of former ages. It is the signal improvement of the present day, that the action and reaction of book-learning and general intelligence are so prompt, intense, and all-pervading. The moment a discovery is made, a principle demonstrated, a proposition advanced through the medium of the press, in any part of the world, it finds immediately a host, numberless as the sands of the sea, prepared to take it up, to canvass, confirm, refute, or pursue it. At every waterfall, on the line of every canal and railroad, in the counting-room of every factory and mercantile establishment, on the quarter-deck of every ship which navigates the high seas, on the farm of every intelligent husbandman, in the workshop of every skilful mechanic, at the desk of the schoolmaster, in the office of the lawyer, the study of the physician

and clergyman, at the fireside of every man, who has had the elements of a good education, not less than in the professed retreats of learning, there is an intellect to seize, to weigh, and appropriate the suggestion, whether it belong to the world of science, of taste, or of morals.

In some countries there may be more and in some less of this *latent* intellectual power;—latent I call it, in reference not to its action on life, but to its display in books. In some countries, the books are in advance of the people, in others greatly behind them. In Europe, as compared with America, the advantage is in favor of the books. The restraint imposed upon the mind, in reference to all political questions, has had the effect of driving more than a proportion of the intellect of that part of the world into the cultivation of science and literature, as a profession; and if we were to judge merely from the character of a few great works published at the expense of the Government, and the attainments of a few individuals, Italy and Austria would stand on a level with Great Britain and France. The great difference between nation and nation, in reference to knowledge, is in fact, in no small degree, in this very distinction. In reference to the attainments of scholars and men of science by profession, of which some few are found in every civilized country, all nations may be considered as forming one intellectual republic, but in reference to the diffusion of knowledge among the people; its action on the character of nations; its fruitful influence on society,—the most important differences exist between different countries.

III. There remains to be discussed the last topic of our Address, the influence of a general diffusion of knowledge on morals, a point which, if it were debatable, would raise a question of portentous import;—for if the diffusion of knowledge is unfriendly to goodness, shall we take refuge in the reign of ignorance? What is the precise question on which, in this connexion, rational scruples may be started, deserving a serious answer?

The merits of the case may, I believe, be stated somewhat as follows:—that there seems, in individuals, no fixed proportion between intellectual and moral growth. Eminent talent

and distinguished attainment are sometimes connected with obliquity of character. Of those, who have reached the heights of speculative science, not all are entitled to the commendation bestowed on Sir William Jones,—that he was "learned, without pride; and not too wise to pray;" and one entire class of men of letters and science, the French philosophers of the last century, were, as a body,—though by no means without honorable exceptions,—notorious for a disbelief of revealed religion; an insensibility to the delicacies of moral restraint; a want of that purity of feeling and character, which we would gladly consider the inseparable attendant of intellectual cultivation. It is a question of deep interest, whether, from these facts, and others like them, any thing can be fairly deduced, unfavorable to the moral influence of a diffusion of knowledge.

No country in Europe had retained more of the feudal divisions than France before the Revolution. A partition of the orders of society, but little less rigid than the oriental economy of *castes*, was kept up. Causes, which time would fail us to develope, had rendered the court and capital of France signally corrupt, during the last century. It is doubtful whether, in a civilized state, the foundations of social morality were ever so totally subverted. It was by no means one of the least active causes of this corruption, that all connexion between the court and capital, and the higher ranks in general, on the one hand, and the people on the other, was cut off by the constitution of society, and the hopeless depression, degradation, and ignorance of the mass of the people. Under these influences, the school of the encyclopedists was trained. They did not make, they found the corruption. They were reared in it. They grew up in the presence and under the patronage of a most dissolute court, surrounded by the atmosphere of an abandoned metropolis, without the constraint, the corrective, or the check of a wholesome public sentiment, emanating from an intelligent and virtuous population. The great monitors of society were hushed. The pulpit, not over active at that time as a moral teacher in the Catholic church in Europe, was struck dumb, for some of the highest dignitaries were stained with all the vices of the rest of their order, that of the nobility; and

some of the most virtuous and eloquent of the prelates had been obliged to exhaust their talents in panegyrics of the frail but royal dead. The press was mute on every thing which touched the vices of the time. It was not then the diffusion of knowledge, from the philosophical circles of Paris, that corrupted France; it was the gross darkness of the provinces, and the deep degradation every where of the majority of the people, which left unrebuked the depravity of the capital. It was precisely a diffusion of knowledge that was wanted. And if, as I doubt not, France at this time is more virtuous, (notwithstanding the demoralizing effects of the Revolution and its wars) than at any former period, it is owing to the diffusion of knowledge, which has followed the subversion of feudalism, and the regeneration of the provinces. Paris has ceased to be France. A dissolute court has ceased to give the tone of feeling to the entire kingdom, for an intelligent class of independent citizens and husbandmen has sprung up on the ruins of a decayed landed aristocracy; and the reformation of France is rapidly going on, in the elevation of the intellectual, and with it the political, social, and moral character of the people.

I do not deem it necessary to argue, at length, against any general inference from individual cases, in which intellectual eminence has been associated with moral depravity. The question concerns general influences and natural tendencies, and must be considered mainly in reference to the comparative effects of ignorance and knowledge on communities, nations, and ages. In this reference, nothing is more certain than that the diffusion of knowledge is friendly to the benign influence of religion and morals. The illustrations of this great truth are so abundant, that I know not where to begin nor where to end with them. Knowledge is the faithful ally both of natural and revealed religion. Natural religion is one grand deduction made by the enlightened understanding, from a faithful study of the great book of nature; and the record of revealed religion, contained in the Bible, is not merely confirmed by the harmony which the mind delights to trace between it and the "elder scripture writ by God's own hand;" but Revelation, in all ages, has called to its aid the meditations and researches of pious and learned men; and most assuredly, at every period,

for one man of learning, superficial or profound, who has turned the weapons of science against religion or morals, hundreds have consecrated their labors to their defence. Christianity is revealed to the mind of man, in a peculiar sense. To what are its hopes, its sanctions, its precepts addressed ; to the physical or the intellectual portion of his nature ; to the perishing or the immortal element ? Is it on ignorance or on knowledge, that its evidences repose ? Is it by ignorance or knowledge, that its sacred records are translated from the original tongues, into the thousands of languages, spoken in the world ?—and if, by perverted knowledge, it has sometimes been attacked, is it by ignorance or knowledge that it has been and must be defended ? What but knowledge is to prevent us, in short, from being borne down and carried away, by the overwhelming tide of fanaticism and delusion, put in motion by the moon-struck impostors of the day ? Before we permit ourselves to be agitated with painful doubts as to the connexion of a diffusion of knowledge with religion and morals, let us remember that, in proportion to the ignorance of a community, is the ease with which their belief can be shaken and their assent attained to the last specious delusion of the day,—till you may get down at last, to a degree of ignorance, on which reason and scripture are alike lost ; which is ready to receive Joe Smith as an inspired prophet, and Matthias as —— but shame and horror forbid me to complete the sentence.

But this topic must be treated in a higher strain. The diffusion of knowledge is not merely favorable to religion and morals, but, in the last and highest analysis, they cannot be separated from each other. In the great prototype of our feeble ideas of perfection, the wise and the good are so blended together, that the absence of one would enfeeble and impair the other. There can be no real knowledge of truth, which does not tend to purify and elevate the affections. A little knowledge,—much knowledge,—may not, in individual cases, subdue the passions of a cold, corrupt, and selfish heart. But if knowledge will not do it, can it be done by the want of knowledge ?

What is human knowledge? It is the cultivation and improvement of the spiritual principle in man. We are com-

posed of two elements; the one a little dust, caught up from the earth, to which we shall soon return, the other a spark of that divine intelligence, in which and through which, we bear the image of the great Creator. By knowledge, the wings of the intellect are spread;—by ignorance they are closed and palsied; and the physical passions are left to gain the ascendancy. Knowledge opens all the senses to the wonders of creation; ignorance seals them up, and leaves the animal propensities unbalanced by reflection, enthusiasm, and taste. To the ignorant man, the glorious pomp of day, the sparkling mysteries of night, the majestic ocean, the rushing storm, the plenty-bearing river, the salubrious breeze, the fertile field, the docile animal tribes,—the broad, the various, the unexhausted domain of nature are a mere outward pageant, poorly understood in their character and harmony; and prized only so far as they minister to the supply of sensual wants. How different the scene to the man, whose mind is stored with knowledge! For him the mystery is unfolded, the veils lifted up, as one after another he turns the leaves of that great volume of creation, which is filled in every page with the characters of wisdom, power, and love; with lessons of truth the most exalted; with images of unspeakable loveliness and wonder; arguments of Providence; food for meditation; themes of praise. One noble science sends him to the barren hills, and teaches him to survey their broken precipices. Where ignorance beholds nothing but a rough inorganic mass; instruction discerns the intelligible record of the primal convulsions of the world; the secrets of ages before man was; the landmarks of the elemental struggles and throes of what is now the terraqueous globe. Buried monsters, of which the races are now extinct, are dragged out of deep strata, dug out of eternal rocks, and brought almost to life, to bear witness to the power that created them. Before the admiring student of nature has realized all the wonders of the elder world, thus as it were re-created by science, another delightful instructress, with her microscope in her hand, bids him sit down and learn at last to know the universe, in which he lives; and contemplate the limbs, the motions, the circulations of races of animals, disporting in *their* tempestuous ocean,—a drop of wa-

ter. Then while his whole soul is penetrated with admiration of the power which has filled with life and motion and sense these all but non-existent atoms, oh, then let the divinest of the muses, let Astronomy approach, and take him by the hand; let her

> Come but keep her wonted state,
> With even step, and musing gate,
> And looks commercing with the skies,
> Her rapt soul sitting in her eyes;—

Let her lead him to the mount of vision; let her turn her heaven-piercing tube to the sparkling vault; through that, let him observe the serene star of evening, and see it transformed into a cloud-encompassed orb, a world of rugged mountains and stormy deeps; or behold the pale beams of Saturn, lost to the untaught observer amidst myriads of brighter stars, and see them expand into the broad disk of a noble planet,—the seven attendant worlds,—the wonderous rings,—a mighty system in itself, borne at the rate of twenty-two thousand miles an hour, on its broad pathway through the heavens; and then let him reflect that our great solar system, of which Saturn and his stupendous retinue is but a small part, fills itself, in the general structure of the universe, but the space of one fixed star; and that the power, which filled the drop of water with millions of living beings, is present and active, throughout this illimitable creation!—Yes, yes,

> The undevout astronomer *is* mad!

But it is time to quit these sublime contemplations, and bring this address to a close. I may seem to have undertaken a superfluous labor, in pleading the cause of education. This institution, consecrated to learning and piety; these academic festivities; this favoring audience, which bestows its countenance on our literary exercises; the presence of so many young men, embarking on the ocean of life, devoted to the great interests of the rational mind and immortal soul, bear witness for me, that the cause of education stands not here in need of champions. Let it be our pride, that it has never needed them, among the descendants of the pilgrims; let it be our vow, that, by the blessing of Providence, it never shall need them, so long as there is a descendant of the pilgrims to

plead its worth. Yes, let the pride of military glory belong to foreign regions; let the refined corruptions of the older world attract the traveller to its splendid capitals; let a fervid sun ripen, for other states, the luxuries of a tropical clime. Let it be ours to boast that we inherit a land of liberty and light;—let the schoolhouse and the church continue to be the landmarks of the New England village; let the son of New England, whithersoever he may wander, leave that behind him, which shall make him homesick for his native land; let freedom and knowledge and morals and religion, as they are our birthright, be the birthright of our children to the end of time!

ERRATUM.—Page 7, line 11, for *inverse* read *direct*.