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Agricultural Department.

ADDRESS

Delivered before the Agricultural Society of Somerset County, at its Annual Exhibition, OCTOBER 6, 1854, by

HON. JEREMIAH S. BLACK,
Chief Justice of Pennsylvania.

Gentlemen of the Agricultural Society:

Of course I am not expected to give you any instructions in the details of practical agriculture. If I were competent to such a task, this is not the occasion to execute it. An essay on the breeds of cattle, or the genealogy of horses—on the process of making butter, the composition of manures, or the cultivation of particular crops—would, at present, be out of place and out of time. My purpose is broader, if not better, and more general if not more useful. The duty assigned to me will be done if I lay before you a few of the facts and reasons which tend to establish one important truth, namely: that the art that you profess is in a condition which needs, and will most amply repay, a vigorous effort to improve it.

When those who belong to a particular profession hear themselves addressed by one whose life has been devoted to a different pursuit, they take his advice reluctantly, or not at all. They believe as far as they please. It is so much easier to talk than to do, that an outsider can never speak as one having authority. But I do not know why you should not take a suggestion, or listen to a remonstrance, let it come from whom it may. There is nothing at all suspicious in the fact, that a merchant or mechanic, a physician, minister, lawyer or judge, takes a deep interest in your business. It is their misfortune, that they do not follow it; for most of them would if they could. The taste for agricultural employments and rural scenery is almost universal. The cultivation of the earth is the only trade which God ever commanded any man to exercise; and it seems to have been a part of the divine economy to surround it with attractions. Our natural organization is fitted for the country, and not for the town. The human eye is so formed, that it rests with pleasure on green and blue, and cannot endure any other color for a long time without injury. Our sense of sight is never so much delighted, because never employed in a manner so congenial to the nature of its organ, as when we look upward into the clear blue of the heavens, or abroad upon the green earth. When man was entirely blessed he was placed in a garden—not merely a patch for cabbage and potatoes, three perches square and closed in by a paling fence—but comprehending grounds of vast extent and boundless magnificence, adorned with flowers and enriched with fruits. Hill and dale, forest and fountain, verdant meadows and sunny slopes, rich fields and shady nooks, with four great rivers rolling through them, made a landscape, such as no eye has ever seen since the fall. It was here, that heaven and all happy constellations shed their softest influence on the marriage of our first parents. Imagination has never painted a scene of perfect happiness without similar surroundings. Scenes of idyllic beauty form the principal feature in the heaven of every religion, whether true or false. The Elysian Fields of Greek mythology, and the Paradise of Mahomet, are ready examples. The land which flowed with milk and honey was to the Jew, a type of that better country, to which he should go after his journey through the wilderness of life was closed. And many a Christian, when his soul recoiled from the dark stream of death, has felt his courage revived by the assurance, that

"Sweet fields beyond the swelling flood
Stand dress'd in living green."

Other occupations are followed for the wealth and fame they produce, but agriculture is crowded with amateurs, who pursue it for its own sake; and thousands feel the same desire, whose narrow means forbid them to indulge their wishes. When Cincinnati abandoned the leadership of the mightiest empire in the world, to hurry home and finish his ploughing before it got too late in the season, and when Washington retired from the Presidency, to cultivate his farm, they both yielded to an inclination as common as it was natural. The praise they have received for it, is a thousand times greater than they deserved. The passion for fame, for wealth, or for power, does undoubtedly predominate in some persons; but love for the simple pleasures of a country life is seldom extinguished in any sane man's mind.

These natural tastes, however, do not account for all the solitude, which is felt for the prosperity of agriculture. Our interest in it is marvelously quenched by the fact that our bread depends on it. It is the art preservative of all arts. Its success lies at the foundation of the general welfare. The fruits of the farmer's labor supports the industry of all other classes. The ultimate reward for every species of toil must come directly or indirectly from the earth, that common mother,

"Whose womb immeasurable, and infinite breast,
Teems and feeds all."

But though it be true that agriculture is the most useful, as well as the most attractive, of all pursuits, it is equally undeniable, that it has advanced more slowly than any other towards the perfection of which it is believed to be capable. Speaking comparatively, it can scarcely be said to have advanced at all. In every thing that aids commerce and manufactures, improvements

are made, which have changed the whole face of human society. Those interests are projected forward into the future, with a force which overleaps centuries, while agriculture creeps on with the slow pace of the hours. In other departments ingenuity and skill have supplied the place of labor, but the hard toil of the husbandman has not been perceptibly lessened, nor his profits in any striking manner increased. Even the useful improvements that have been invented are slowly and suspiciously accepted. No class of people in the world, except lawyers, are more reluctant, than farmers, to change an old mode of procedure for a better one.

This has been seen and felt, as a great misfortune, by those who are determined to mend it if they can. They do not believe, that there is any inherent difficulty in the nature of the subject, which should make the progress of agriculture less, than that of other branches of industry. Scientific men and practical men—men who think, and men who work—are every where giving their attention to this, as the greatest of human concerns. If the effort be successful, those who aid in it will earn a title to public gratitude, such as no conqueror ever won with his sword.

One of the forms which this movement has taken is that of *Industrial Exhibitions*. The great shows at the Crystal Palaces of New York and London may have done some good. It is certain that the *State Fairs* have been exceedingly beneficial. But *County Exhibitions* when they become general will be fairly worth all others put together; because their effect and influence come directly home to the business and bosoms of the very persons, by whom alone the cause must be carried through. It is on the local societies, that the chief reliance is placed. I trust, that the day when an Agriculture Society was formed here, will be an era, on which your memories, and those of your children, will love to linger.

To make the society useful, it is necessary that we should be as nearly unanimous as possible. We must disarm hostility wherever we find it, and rouse the indifferent to active exertion.—We may reasonably hope, that what we see and hear on this occasion, will contribute something to that end.

I do not see how any man can withhold his assistance from you—much less how any one can oppose you—unless he belongs to one or other of the four classes, which I am about to enumerate. 1. There are men who think that Agriculture is wholly incapable of any improvement whatsoever. With them farming is farming, and nothing more; knowledge cannot do it better, nor ignorance worse; the business is now, and was when Adam left the garden of Eden, in as perfect a condition, as it ever can be. 2. Others believe, that though much more might be known, it is not best that they should know too much, especially about their own business. In their opinion the tree of knowledge continues to bear a forbidden fruit, and no man can make himself a perfect fool except in one way, and that is being wiser than his father. 3. Those who belong to the third class assert, that agricultural societies are not fit and proper means of spreading among the people the knowledge which they admit might, and ought to be, communicated in some way. 4. The fourth set are almost too contemptible to be mentioned. They bear to the country the relation that hardened sinners do the church.—They don't care. You may convince them, that this cause is a good one, and still its success would give them pleasure, its failure no pain.—Such people never regard anything beyond their own most immediate and most selfish interests.

It would be an insult to this assembly to suppose that it contains a single person of the description last mentioned. I do not believe it does. It will be sufficient, therefore, for all present purposes to show, that great and very desirable improvements may be made in agriculture by means of *Agricultural Societies*.

Improvement—what do we mean by that word? An art is improved simply by the use of more science in the practice of it. I know very well that the mention of scientific farming suggests to many minds the idea of a *model farm*, conducted on fanciful principles, by some soft-handed gentlemen, with plenty of money and not much common sense—a place pleasant enough to look upon, but very expensive—absorbing annually from other sources of the owner's income, three or four times as much as it produces. But this is not what I mean. The improvements I speak of, are those which will lighten labor and swell the profits; improvements which can be measured by the increased value of your land, and the additional number of dollars in your purse at the end of each year.

The earth is a machine, with certain powers, which are in constant motion, during the summer season, carrying on the process of vegetation. Like other machines, it is liable to get out of order. It also resembles other machines in the fact, that the value of its products depend mainly on the skill and care of those who attend it. Badly managed, it turns out bad work, in small quantities, and its powers are speedily exhausted. With more skill, it will yield larger and better products, with less labor and expense, while its capabilities will become greater by use. The knowledge, necessary to keep this grain and fruit-making machine running to the best advantage, is agricultural science.

If you relied for a living on a water mill or a steam engine, you would not be content, without knowing as much about its structure, and the laws of its motion, as would enable you to get the most out of it with the least wear and tear. This would be mechanical science.

Science is the handmaid of art. The latter cannot exist, even in a rude state, without the former. I do not say, that every artisan is taken to comprehend the whole theory of his trade. But he should know—or, at least, he should not refuse to know—the practical results of other peoples' experience, as well as his own. Very little is done in this world by mere force. Blind labor swells its muscles, and strains its nerves, to no purpose. The miner digs in vain,

until geology tells him the position of the treasure he seeks. The dyer cannot make his colors adhere, unless chemistry furnishes him a mordant. Optics must teach the painter the law of perspective, before his picture will stand out on the canvass. The vessel of the mariner will float at random, until he learns from natural philosophy, that the magnetic needle points to the pole.

It is thus that Science aids us in the commonest business of life, and scarcely claims the work as her own. Star-eyed and glorious as she is, she disdains not the humblest employments.—She comes to you, with benevolence and truth beaming from her face, and offers her service, not only to decorate your houses and train the flowers in your garden plots, but to fashion your implements, to compound your manures, to sow and gather your crops—to relieve you, in short, from a world of drudgery, and to scatter plenty all over the smiling land. She will put time and space under your command, and pour out uncounted heaps of treasure at your feet. It was of her that Solon spoke, when he said: "Her merchandise is richer than the merchandise of silver, and the gain thereof greater than fine gold. She is more precious than rubies, and all thou canst desire is not to be compared unto her. Length of days is in her right hand, and in her left hand riches and honor."

Without Science, man the ruler of this world, would be the most helpless of all animated beings. His Creator made him the monarch of the earth, and gave him dominion over it, to govern and control it; to levy unlimited contributions upon it, and convert everything in it to his own use. But he found himself at the head of a revolted empire. All his physical forces were in a state of insurrection against his lawful authority. The inferior animals were his enemies. The storms poured their fury on his unsheltered head. He was terrified by the roar of the thunder, and the lightning seared his eye balls. He was parched under the hot sun of summer, and in winter he was pierced by the cold. The soil, cursed for his sakes, produced thorns and thistles. The food that might sustain his life grew beside the poison that would destroy it, and he knew not how to distinguish the one from the other. The earth hid her minerals deep in her bosom, and guarded them with a rampart of thick ribbed rocks. The rivers obstructed his passage; the mountains frowned their defiance upon him; and the forest spread its gloom around him, breathing a browner horror upon the dangers that beset his way. If he left the dry land and trusted himself to the ocean, the waves yawned to engulf him, and the tempest came howling on his track. He seemed an exile and an outcast in the world of which he was made to be the sovereign.

But Science comes to rescue the powerless king from his misery and degradation.—Gradually he learns from her the laws of his empire, and the means by which his rebel subjects may be conquered. From age to age he accumulates the knowledge, that clothes him with power, and fills his courage. Step after step he mounts upward to the throne which God commissioned him to fill. He holds his barren sceptre in his hand no longer. Creation bends to do him homage. The subjugated elements own him for their lord, yield him their faith, and become the servants of his will.—The mine surrenders its treasures; the wilderness blooms around him like a new Eden; the rivers and the sea bear his wealth upon their bosom; the winds waft his navies round the globe; steam, the joint product of fire and water, becomes his obedient and powerful slave; the lightning is trained to do his bidding; the sunbeams leap away to carry his messages; and the earth works with ceaseless activity to bring forth whatever can minister to his gratification. But the whole of his empire has not yet been entirely subdued. The richest portion of it—the agricultural region has been much neglected, and there he has won but a partial supremacy. Science is organizing an army of occupation to march into it—to take complete possession—to tame the rebellion of Nature—and to bring all her powers under the absolute sway of man, their imperial master. You will volunteer for the war, when you think how much has been effected in other departments by similar expeditions. The fight is not to be dangerous nor the result doubtful. At the worst, you will only be annoyed for a while by ignorance and error, those savage, but not very formidable bush-fighters, who will hang upon your flank and rear. The victor, which must come, will crown you with laurels, bloodless, but green with an everlasting verdure, and load you with spoils to enrich you and your children in all coming generations.

Every one knows this is an age of progress. No one is so ignorant as to know, that in modern times, the laws of nature have been revealed with a fulness, and defined with a precision, unparalleled at any former period. It is equally well known, that these discoveries have been used, with prodigious effect, in all the arts, except agriculture, to which they are applicable. The facts and figures, which mark some of the capital points of this progress, will not be inappropriate; for I repeat, that science stands ready to do for you all that she has done and is doing for others.

A single steam engine now carries at the rate of five hundred miles a day, the same quantity of goods which, forty years ago, it required seven hundred and fifty horses to haul at the rate of fifteen miles a day.

In the business of weaving, one man now does with ease, what it taxed the hard labor of twelve hundred to perform before the invention of the power loom.

All sorts of manufactures are carried on in ways so much superior to those which were used, even one generation ago, that goods of every description are furnished to the consumer very much cheaper, and many of them at less than one tenth of their former price; and this, although the demand has been enormously increased, and the profits of the manufacture are much greater than ever.

Macaulay says that in the reign of C. II.—not farther back than twice the length of an old man's life—a letter sent by mail from London to one of the midland counties of England, where it would go now, in four or five hours, was as long in reaching its destination as it would be at this day in going from London to the interior of Kentucky.

A man may start from here, cross the Atlantic, visit every capital city in Europe, and return home again, in less time than used to be required for a trip to St. Louis.

The means by which those who "go down to the great sea in ships," have brought their art to its present state, is an illustration, as striking as any that could be given, of the practical use which has been made of scientific discoveries. It is an old tradition, that the first idea of navigation was suggested to the mind of an ingenious savage, by seeing a hollow reed, which had been split longitudinally, floating on the water. He took the hint and made himself what, in western phrase, would be called a "dingy out." In process of time cars were added. Then came a more complicated vessel, with sails to move, and a rudder to guide her. In this, a bold navigator would venture from headland to headland, keeping one eye carefully on the shore and the other on the clouds. At length they learned, from the old Chaldean shepherds, how to steer by the stars. With this little knowledge of astronomy they went far away from land, though it became wholly useless just at the time it was most needed—when the skies were over-clouded and the tempest came out on the deep. Navigation stood still at that point for thousands of years, because it was believed (as some farmers now believe of their art) that it was already too perfect to be improved. But see what modern discoveries have brought it to. The mariner now leaves the port of his departure, with a serene and steady confidence in his resources. Astronomy, natural philosophy, optics, magnetism—the whole circle of the physical sciences—and numerous instruments, contrived with the most exquisite mechanical skill, are all at his command. He can measure the rate of sailing exactly, and knows the course he is on with absolute certainty. When he is a thousand miles out, if he doubts the accuracy of his reckoning, he is able to correct it. He lifts to his eye a tube, fitted with glasses, through which he can see far out into illimitable space—many millions of miles beyond the reach of his unaided vision. He ascertains the relative position of some awfully distant world; and thence, with the help of his chronometer and his nautical almanac, he calculates his longitude. Another observation with a different instrument upon another celestial body gives him the means of finding his distance from the equator. Combining these two results, he puts his finger upon a spot in the chart, and says, with undoubting confidence, "I am precisely there." Geography tells him where to steer his vessel for the port of his destination, and how to avoid all dangers that lie between. He holds his head to the true course, and fearlessly stretches away over the dark blue waters, and they bear him onward like the horse that knoweth his rider. When to this is added the power of steam to propel him, it may well be said that has conquered both wind and wave. Fire may consume his vessel, or an iceberg may shatter it; but the ordinary perils of the sea are reduced almost to nothing.

Our all-wise Creator has endowed us with no faculty in vain. He permits us to discover no useless truth. Some, which appeared the most unpromising and barren, have borne the richest fruit. A nameless philosopher, somewhat more than three thousand years ago, was handling a piece of amber, called in his language *electron*. He saw, that when it was briskly rubbed, it had the power of attracting and holding to it certain light substances. He thought it was enlivened with some kind of animal life. This satisfied him, and no better explanation of the marvel was given for several centuries. Yet here was the germ of that science, out of which arose the Voltaic pile, and the Galvanic battery, whose powerful interrogations of nature have compelled her to yield up to the most important secrets of chemistry. Still no one dreamed of the identity of lightning and electricity; and Franklin's letter, suggesting it, was read in the Royal Society at London amid roars of laughter. Neither philosophers nor unlearned men could believe that the crackling noise, produced by rubbing a cat's back, was caused by the same agent which splits the unweildable and girdled oak." But Franklin quietly drew it from the cloud along the string of his kite, and he knew that his name was linked for ever with the grandest discovery of the age. It was immediately turned to practical account. In every part of the civilized world iron rods arose above the houses, and pointed towards the heavens, to catch the lightning and lead it away. Franklin had accomplished for all timid people, what Macbeth desired for himself, when he wished, that he might

—tell pale hearted fear it lies,
And sleep in spite of thunder.

But the end was not yet. The great triumph of the amber science was still to be achieved.—You see it now in the vast system of electric wires distributed all through the country, along which the sulphurous and thought-executing fires, go flashing with intelligence, wherever they are sent by the will that controls them—bearing the news of life and death over mountain, and lake, river, and valley—clearing thousands of miles at a single bound. By means of this amazing instrument, the eloquence of the statesman thrills in the nerves of the people at each extremity of the nation, almost as soon as it is uttered at the capital; the friend at one side of the continent takes counsel with his friend at the other, as if they stood face to face; and the greeting of the far-off husbands leaps in an instant to the heart of his wife, and makes the fire-side of his distant home glad with the knowledge of his safety.

Science has extended her dominion even over regions which seemed to be entirely ruled by

the fickle sceptre of Chance. Life is proverbially uncertain; yet nothing can be truer than the life tables of an Insurance Company, when its officers desire to make them so. The destiny of each human individual is hid in deep obscurity—shadows, clouds, and darkness rest upon it, and conceal it from every eye except the all-seeing One. But disease and mortality do their work on large communities by general laws. The average duration of life, and the average amount of sickness, in a nation, can be counted before hand with perfect accuracy.—Thus, while the individual man is a mystery to be solved by Omnipotence alone, man in the aggregate is reduced by his brother man to a mathematical problem.

We dare not boast of much improvement in law or politics. Indeed, they seem to be growing worse. While other things are rising, they have a fatal proclivity for the downward track. They darken with error in the full blaze of surrounding truth. But medicine has advanced with magnificent strides. Life is much longer, and health far better, than it used to be. When the cholera came to London in a form so frightful that every one was appalled by the report of its ravages, the mortality was not greater than it had been at the healthiest times a hundred and fifty years earlier. Truly did Solon say, that wisdom has length of days in her right hand.

What the trade of the Mississippi and the Hudson was before the steamboats—what the manufacture of cotton before the days of Arkwright or Whitney—what ocean navigation was before the invention of the compass—what land travelling was before railroads—what medicine was when a patient was steamed for the small pox—such is agriculture in the present stage of its progress. It will not have its due until it is up, at least, to their present condition. There is a certain amount of skill and science applied, every day, to the working of this machine, which we call the earth. It would be as wise to forget all that, as to learn no more. He, who has a race to run, is not sterner of losing the prize, when he turns upon his tracks, than when he stands still in the midst of his career. To look back, over the ground already traversed, will be an incentive into the work, which is yet to be accomplished. If something has been done in the dark time, that is long since passed, what are we not hope for with the sun-light of modern civilization beaming on our path? It may startle some of you, and sound in your ears like a slander, to tell you, that you are all scientific farmers. It is true, nevertheless. That knowledge, whether it be much or little, which comes from experience, remembered and arranged so as to be ready for use when wanted, is science. There was a time when it did not exist at all, in any degree. When we reflect how high we are placed by the little we have, above those who had none, and what a struggle it must have cost somebody, to introduce it at the beginning, we shall appreciate its value, and perhaps, make an effort to get more.

Let your imaginations carry you back to the time when agriculture was in its infancy—before the earliest dawn of Greek civilization.—In those days men depended principally upon the chase for a living. They ate the flesh, and clothed themselves with the skins, of wild beasts. Fruits and other vegetables of spontaneous growth added to their luxuries, in summer.—They were not long in discovering one fundamental law in nature, namely: that seeds deposited in the ground would grow, and produce similar seeds in larger quantities. But they knew nothing of the difference between one soil and another. They preferred the poorest, because it was easiest cleared, and lying higher up on the ridges, it need not drain. Here they made holes in the ground with sticks, and dropped the seeds a few inches below the surface. The rest was left to nature. If such cultivation gave them a two or three fold crop, they were lucky. It happened much oftener that their growth was choked with weeds, or that it met with some other evil chance, by which the green corn perished ere his youth attained a beard.

The planting and gathering were left to women and children; the men despised such work, as being inconsistent with their honor and dignity. Hunting and fighting were the employments, in which they found pleasure and glory, as well as food and clothing. But there was one man among them more thoughtful and observant than all the rest. He had watched the unfolding vegetation, from the sprouting of the seed to the maturity of the fruit, with a keen perception of the whole marvellous and beautiful process, and he devoted his attention to the rearing of useful grains, with a pleasure, which he had never felt in the excitement of the chase. He discovered the proper season for planting; he noticed that weeds were unfriendly to the growth of his crops; he found that mixing certain substances, such as ashes and decomposed leaves, with the soil, would increase its productiveness; he learned that stirring the ground about the roots of a plant would make it thrive more rapidly; he even got himself a kind of hoe made, by some cunning worker in iron.—Here was a philosopher, whose intellectual stature rose high above that of his fellows. Being a patriot also, and willing to do good for his countrymen, he conceived the thought of persuading them to quit hunting and win a surer living from the earth. At his request, they assembled under the spreading oaks, to hear his plans; and this was the first agricultural meeting—I will not say, the first on record, for I do not know that it is recorded—but certainly the earliest you ever heard of. The sage unfolded his new science to them, proving it, as he went along, by the facts of his own experience. The chase, he said, was a precarious business at best, while agriculture would be a sure and steadfast moderate labor of his own hands, had gained in a single season, what would sustain life longer and better, than all the spoils taken, during the same time, by the best ten of their hunters.—This, he asserted, was true of an ordinary sea-

son, but sometimes the game disappeared entirely. His voice grew deeper, and its tones had a melancholy impressiveness, as he described the sufferings endured by them all, when they, the strong sons of the wilderness, with their wives and children, became the prey of gaunt famine and wide wasting pestilence. He concluded by promising, that long lives of wealth and contentment should repay them for a general devotion of their labor to the cultivation of the earth.

No cheers followed the speech, but on the contrary, hoarse murmurs of disapprobation came up from the multitude, swelling by degrees into loud opposition. The new measure was attacked by all those shallow sophistries—those miserable fallacies so hollow and truthless—with which conservatism arms her ignorant votaries. That solitary defender of truth was overwhelmed by the sort of arguments which are sometimes reproduced in modern political meetings and legislative bodies. Some accused him of a deep design upon their liberties. Some declared that he had opposed the nation in its last quarrel, and was, in fact, no better than a traitor. One set knew him to be unsound in his religious faith, and brought all the prejudices of superstition into the field against him. Others charged down upon him with a whole army of "illustrious ancestors," whose opinions, they said, were not like his. Others still there were, who could see no objection to the man or the measure, but this was not the proper occasion—the time was out of joint. A portion of the crowd saw, in their much wisdom, that to quit hunting would enervate their frames and make them a race of cowards. Most powerful of all, and most profoundly wise in the eyes of the assembly, was the party who declared, that they would never consent to the "enervation" of property required by such an innovation. They had invested a large capital in bows and arrows, and spears, and traps, and knives; and these would all be useless if their future occupation was to consist in tilling the ground. There was one mighty man there: a blacksmith, who had gained great consequence, and earned innumerable skins, by making the weapons which were used in killing the beasts of the forest. He thought his craft was in danger, and he objected to Agriculture, for the same reason that Demetrius, the silversmith, afterwards opposed Christianity. He put an end to all discussion, by uttering a catchword, with just enough of no meaning in it to make his friends unanimous. He lifted up his big voice, and cried out, "Great is Diana the Goddess of the bow, and the Patroness of hunters." The whole assembly in full chorus echoed the cry—and there was a great uproar. They would have stoned their prophet: for the sight of his meek countenance and the recollection of his blameless life exasperated their wrath; but no one proposed it, and he was suffered to escape.

This primitive apostle of agricultural science was defeated. He died in the melancholy belief, that his people were destined to remain forever in barbarism. But not so. A truth had been spoken; and truth can never die. It had gone down in the shock of the first encounter with falsehood, but it was not crushed. Agriculture found an efficient champion where such a thing could least have been expected. At the great meeting under the trees, there was a little girl, whose parents had both died of starvation, and her two brothers had perished in the pestilence, which followed the famine. Hunger and its concomitants had carried away every relative she ever had. She was gifted by nature with a quick intellect and a kind heart; and her lonely condition had made her thoughtful and wise above her years. She listened to the words of the sage with beaming eye, and flushed cheek, and lips parted in breathless interest. When she heard a proposal to furnish bread in abundance—bread at all times—bread that would always stay the ravages of famine, whether game was plenty or scarce—it roused every faculty of her mind. She knew the whole subject by heart, as soon as she heard it explained. Henceforth she had neither eye nor ear for anything else. She gave herself up entirely to the one great task of spreading agricultural science. Every day added to her own knowledge, and to the irresistible power with which she impressed it on other minds. She grew up with a lustrous beauty, which seemed more than mortal. Her education, though gentle and persuasive, had all the vigor which springs from enthusiasm. She swayed those rude men with an influence they had never felt before. One after the other, her countrymen threw away their bows and spears, and with bows in their hands, came and placed themselves under her tutelage. What she was unable to teach, they learned from their own experiences mutually communicated. Soon all the hill sides were covered with rich crops of waving grain, and the heavy timber began to disappear from the bottom lands. Stately houses took the place of the mean hovels, which the hunters had occupied. All the beasts of the forest, which could be made useful to man, were domesticated. The wild bear was captured and tamed for the sake of his flesh; the sheep submitted to the shearer; the ox bowed his shoulder to the yoke; and the mouth of the horse became acquainted with the bridle bit. The wild fruits were transplanted into gardens and orchards, and were totally changed under the influence of a careful culture. The sour grape became a great luxury; the useless crab grew to be an apple; the sloe expanded into a delicious plum; and a nameless fruit, resembling the bitter almond, swelled out into a peach, with surpassing richness of flavor. New implements of husbandry were successively invented. The plough, the harrow, the sickle, and the scythe, each had its share in making the general prosperity greater.

Agriculture once established, became the parent of other arts. Navigation, commerce and manufactures added to their wealth. Cities rose up, filled with a refined population. The nation grew strong and powerful, and spread its