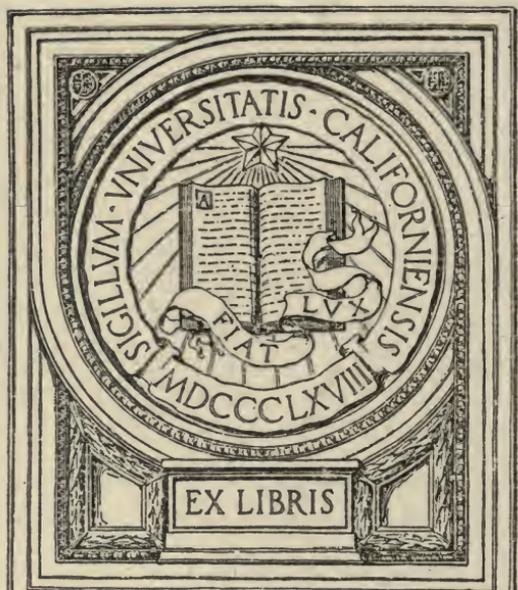


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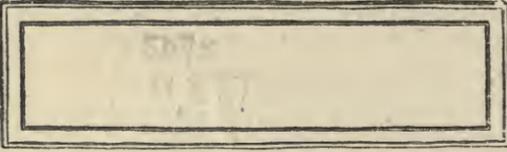
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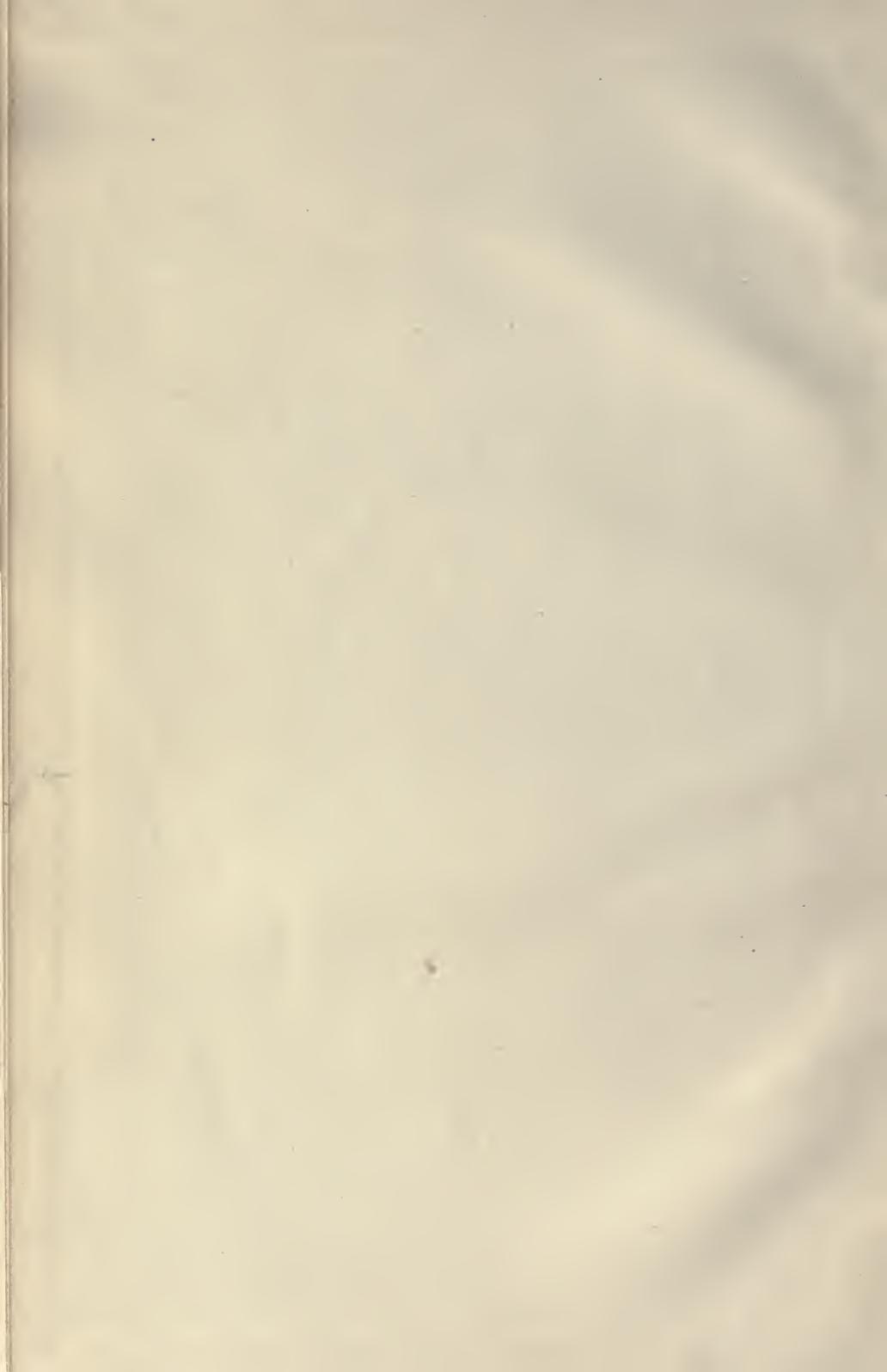
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E. J. Wickson.

RURAL IMPROVEMENT.

BY

B. G. NORTHROP,

SECRETARY OF CONNECTICUT BOARD OF EDUCATION.



NEW HAVEN:
TUTTLE, MOREHOUSE & TAYLOR.
1880.

Edward T. Wickson.

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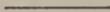
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Public interest in home and rural adornment is rapidly increasing. A little foresight will show that no rural community can afford to continue without some organized efforts for this purpose, such as have done great good in promoting public health, cultivating public spirit, quickening social and intellectual life, building up and beautifying towns, and thus enhancing the value of real estate. I shall be happy to cooperate with public-spirited citizens who are moving in this matter, and will lecture on this subject, without charge either for services or expenses, in any town in Connecticut. In this reprint from an official Report, a few local allusions are retained to show the original aim of the writer and the application of kindred plans and principles to other fields.



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RURAL IMPROVEMENT ASSOCIATIONS.

When, over ten years ago, an effort was begun to improve and build up our country towns,* it encountered, as I then predicted, some misapprehension and ridicule. During this period of quiet work, my faith in the final result has never faltered. But sooner than I expected, this Rural Improvement movement has assumed such large proportions as to silence cavil, and command the respect and coöperation of the wisest and best men of our State. There are now over fifty of these associations in Connecticut which speak for themselves. Their objects are manifold, of which the following are the more important:

1. To cultivate public spirit and foster town pride, is an object which should enlist the sympathies of all our citizens. Our youth should be trained in their homes and schools to be jealous of the good name of their town and State. Hence the history of our towns and our State should be generally taught in order to develop a just town and State pride. We are prone to underrate the great value of this feeling. The love of home and the love of one's town and State are akin. This sentiment formed in early life should grow with our years and attainments. The want of it indicates a serious defect of character. I believe with Dr. Bushnell that "the man who does not wish to love and honor the town and State in which he and his children were born has no heart in his bosom. We are too little aware of our noble history as a State, a history of such transcendent beauty, freshened by so many heroic incidents, having so great a wealth of character and achievement. This early history of Connecticut is really the most beautiful that was ever permitted to any people in the world." This cannot justly be called a partial but unfounded laudation of one's State. The Histo-

* "How to beautify and build up our country towns" was the title of an article in my Report for 1869.

rian, Bancroft, a citizen of Massachusetts, biased by no Connecticut predilections says, in language as striking as that of Dr. Bushnell, "There is no State in the Union, and I know not any in the world, in whose early history, if I were a citizen, I could find more of which to be proud and less that I should wish to blot."

The sentiment that honors and cherishes one's birth-place is noble and ennobling. I am aware that a popular prejudice associates weakness and effeminacy with such taste and refinement. But this sentiment has ever characterized the greatest and best of men and is a prime element of true manhood. The cold and selfish soul is sterile in heroic virtues. There is an American railway king, now a millionaire, who seldom visits his native town, takes no interest in it, does nothing for it, and leaves even the old homestead and grounds, though still owned by him, neglected and forlorn. This fact alone naturally suggests a selfish, soulless character. Indeed such examples are too common. On the other hand, the greatest grandeur of intellect accords with fervor of filial feeling, with fondest home attachments and with refinement and delicacy of taste. It is perfectly in keeping with the intellectual greatness of Daniel Webster to find him fondly cherishing and beautifying the old homestead, enriching and improving the paternal acres and eloquently discoursing on the sacred associations of home, the transcendent sweets of domestic life, the happiness of kindred, and parents and children. Washington was as delicate, courteous and affectionate in his domestic relations and attachments as he was wise in council and courageous in war. A beautiful trait in Bryant's character was evinced by his devotion to the old homestead and the little secluded town of Cummington among the Hampshire hills, hallowed to him by the memories of father and mother, and the sacred associations of childhood. To that little town which he did so much to adorn and enrich and educate, he ever deemed it a privilege to make an annual visit—a summer visit with his household, often prolonged for weeks and months. That the early associations might remain, raising the old house, he built beneath and around it a stately mansion, so that the paternal rooms remained intact.

Ex-Governor Hubbard well says, "this work of Village Improvement* will not fail, I trust, to awaken public attention and provoke imitation throughout our State, and excite and even shame our own people into a larger public spirit and better efforts to redeem from negligence our rural homes and villages. Nearly all our towns are full of objects of natural beauty easy of development, and very many of them rich in legendary and historical associations. What is greatly wanted is something more of rural art and adornment. Something which shall beautify our country villages, educate public taste, make the homes of the fathers dearer to their sons and the local associations of childhood dearer to old age, and thus turn back, in part at least, the tide of migration from the rural towns, and make the city seek the country life and make it what it used to be in our own State, and what it still is in the oldest and most cultivated nations of the world."

In our declining towns especially, local pride and public spirit should be fostered. Discouragement, if not self-disparagement, has been their danger and a source of increasing weakness. Instead of the despair that says "it is of no use, the fates are against us, we are doomed to decline more and more," true courage and patriotism would face the facts, inquire into their causes, and, if possible, find a remedy. The lack of public spirit has contributed to the decline of many towns. The evidence of this is sometimes seen in dilapidated school-houses, poor roads, absence of sidewalks, and neglected common, cemetery or church. Remembering that what any people can be depends largely on what they have been, the history of our towns should kindle within us a just pride for the past and a new inspiration for the future. To this end, each town needs to be distinctly conscious of itself, jealous of its good name, liberal in supporting its schools and churches, adorning its park or "Village Green," cemetery and streets, and in every practicable way guarding its honor, and ambitious of its prosperity.

In New England, the township is the unit, but in the Southern and in many of the Western States the "parish" or the county is the unit, while the township organization is wanting or is

* Referring to the example set in Haddam.

comparatively insignificant. The maintenance of schools and roads and bridges, the support of the poor and many kindred matters which in New England are town affairs, are there managed countywise. The town organizations with the town meetings where every citizen is the peer of any other, have been one of the prime factors in developing the sterling traits of New England character. They have fostered that self-reliance, independence and energy which have given strength and vitality to our northern civilization and effectively aided in the maintenance of our free institutions. The influence and importance of the towns of New England was early and ably set forth by Samuel Adams. It was a sound motto of old John Adams, that "the ownership of land is essential to individual self-respect and thrift and to national dignity and prosperity." It is not the landless, but farmers, who have been foremost as defenders of liberty because they have been thus defenders of home. The free land tenure, the system of small farms grouped into townships from the early settlement of New England fostered the free, liberty-loving spirit of our fathers, without which the Revolutionary war would have been impossible, for these "little democratic republics" nurtured that capacity for self government to which was due the achievement of our independence.

Says Professor Joel Parker: "It was through these organizations that an industrious yeomanry, while following the plow, and the diligent tenants of workshops while handling their tools, were converted into an armed soldiery on the first news that the British left the limits of Boston and were marching into the country. The dragons' teeth that produced that harvest were sown in the shape of farmers and mechanics, who, holding themselves in readiness as minute men, required but the heat of warlike intelligence to burst into full life and vigor as a patriotic army. It was through these town organizations, and not through a want of patriotism elsewhere, that the support of the Declaration of Independence was more effectual in New England than in any other of the colonies."

Nothing analogous to our town system prevails in the Southern States or in England. The influence of these town organizations and town meetings, where all meet on a level without distinction of race or party or sect, has largely caused

the contrast in the civilization of the North and the South, from our early history till to-day. In the language of Senator Dawes, "With the township here, its vital force unimpaired, New England can never become South Carolina or Mississippi, and without the educating influence that comes of the town, neither South Carolina nor Mississippi will ever become New England in the enjoyment of liberty regulated by law. They are the very corner-stone of republican institutions among us, and they or their equivalent must take the place of that unorganized parish system by which Southern plantation society is loosely linked together, before a representative republic, in anything else than name, can be maintained among them. The town is not therefore to fade, but is to continue to be the nursery of intelligent, untrammled, thinking freemen, the source, the supply of the government they themselves have instituted on this continent." My sympathies and efforts have long been enlisted in behalf of the declining towns which most need help and encouragement.

This is one source of my interest in the work of Rural Improvement, now so widely diffused through the State. Connecticut cannot afford to allow any of these old towns to die out. Many of them have a noble history, and if we of the present generation do our duty, they are to have a grand future. A most encouraging history would be that fitly recording the achievements of those who have gone out from these rural districts which are thus continually enriching the great centers of population and wealth.

2. To quicken the intellectual life of the people is an important aim of these associations. Besides the liberal support of schools, the founding of libraries is an important help in this direction which should be encouraged in all our towns. Their value cannot be over-estimated. The supply of good books increases the demand. A taste for books has been awakened in many towns by a well-selected library where the improvement has been as marked in the quality as in the quantity of the books read. Such a library naturally becomes the pride and treasure of a town, rendering it a more desirable place of residence, adding attractions to every intelligent home within its limits, and helping both

teachers and pupils in the schools. With books at hand, the teacher may be continually progressing. Without them he is in danger of getting into the ruts. The mind that ceases to progress soon retrogrades; unless himself eager for improvement, the teacher can impart no inspiration or love of knowledge to his pupils. While libraries educate the whole people, I have been especially gratified to observe how diligently their volumes are used by the school boys and girls who would otherwise have only the dime novel or papers more objectionable. Once give a boy a taste for good books and access to a choice library, and then place him where you will, let his calling be what it may, he will find time for study and will devote the intervals of labor to reading. Multitudes of men, thus self-educated, owe their eminence and success to an early taste for reading and access to libraries. Their example should show our youth that their evenings need not be idled away because the days must be occupied with business or labor.

3. The promotion of good fellowship is another aim. The charm of country life, so dependent on the interchange of neighborly courtesies and the maintenance of friendly relations, is often marred by needless strifes and alienations. The social life of a town is thus sadly embittered. A Rural Improvement Association tends to fraternize the people of a town by leading all classes to meet on common ground and *work* together for a common object. Thus differences of rank, or sect or party are forgotten, while as fellow-citizens they carry out plans of equal interest to all, and effectively combine to promote the general good. In some towns, good fellowship as well as intellectual improvement has been promoted by organizing reading circles. Selections in prose and poetry, often a play of Shakespeare, the several parts having been previously assigned, are the subject of careful private study and drill. These weekly circles make a profitable evening school. Their social influence is still more extended by an occasional "rehearsal" of a more public character. Divided as the residents of our rural districts and villages too often are by prejudice or neighborhood difficulties, every association where social amenities are cultivated should be encouraged. The support of a Village Reading Room, well supplied with

the leading journals of the day—daily, weekly, monthly or quarterly—is a movement in the same direction. A course of Lyceum Lectures is sustained by many Rural Improvement Associations, the profits of which are their “benefit” while the social opportunities thus opened are clear gain.

An annual festival under the direction of the Rural Improvement Association tends to deepen and sustain public interest in its work. In some towns literary exercises, addresses, a poem, and music, fill the programme; in others a collation becomes another bond of union and fellowship. In the rigid, and sometimes frigid, state of rural life, too often found in New England, we need to cultivate the social amenities and learn the art of “turning work into play.” The supposed monotony and dullness of country life drive many to the city. It is wise to multiply occasions for social enjoyment. The arbor-day festival may help to counteract the tendency of rural life to isolation and seclusion, lifting out of the ruts of a dull plodding monotony, promoting neighborly feeling, and strengthening social ties. The rural laborers in Switzerland and Germany socialize far more than American farmers. Their festive spirit is a strongly-marked feature of their character. It is manifested in the family, in neighborhood greetings and meetings, in schools, in rifle feasts, in processions and various social gatherings. They have a passion for nature, and love to frequent their beautiful groves and gardens, for parks or woods abound in or near their cities and towns. This genial spirit is everywhere fostered by music—both vocal and instrumental. As a result, there is an inexpressible something in the German character that carries mirthful and happy childhood into old age, giving an added charm to social life, and lightness and cheer to sober work.

4. Another aim of these associations is the promotion of public health by securing better hygienic conditions in the homes of the people and in their surroundings. Some of our country towns, naturally favorable to health and longevity, have suffered fearfully from the ravages of diseases, evidently caused by neglect of hygienic laws. In many towns much has lately been done in the matter of drainage, removal of waste and guarding wells and water supplies from impurities.

5. The improvement of road *sides* is attracting much attention. Some towns have made appropriations to clear them of brush and rubbish and keep them like a lawn. Others are adorning them with extensive lines of trees.

6. The improvement of roads, though of great importance, has secured less attention from these associations, as the town authorities usually care for them, and other objects are more urgent. Dr. Bushnell well says: "The road is that physical sign, or symbol, by which you will best understand any age or people. If they have no roads, they are savages; for the road is the creation of man and a type of civilized society. If you wish to know whether society is stagnant, learning scholastic, religion a dead formality, you may learn something by going into universities and libraries; something, also, by the work that is doing on cathedrals and churches, or in them; but quite as much by looking at the roads. For if there is any motion in society, the road, which is the symbol of motion, will indicate the fact. Nothing makes an inroad without making a road. All creative action, whether in government, industry, thought or religion, creates roads."

7. The making or improving of sidewalks meets a felt want in many towns. In no other way can the comfort and sociality of a village be promoted so economically as by making sidewalks. Simple gravel walks, when the concrete would be too expensive, serve an admirable purpose. One town has lately completed many miles of neat sidewalks, which add greatly to the attractiveness of the village.

The fine footways abounding throughout England invite the pedestrian habits of the women of that country. It is largely because they exercise daily in the open air, that they retain so long the bloom and vigor of youth. More outdoor rambles would promote the health and prolong the lives of American women. Besides favoring the luxury and healthfulness of open air exercise, footways invite friendly calls and foster social life and rural enjoyment.

8. Street lights remove another hindrance to social intercourse in country villages. When the day's work is done the evening is the favorite time for calls, if the darkness does not forbid. The cost of kerosene illuminators is now moderate.

It is one of the signs of social advancement that many of our associations are thus practically saying "Let there be light."

9. Increased attention is given to parks, the village green, the cemetery, church grounds, school lots and other public grounds. I hope hereafter to give a brief sketch of the public parks of Connecticut, some of which are already exceedingly beautiful. Others are now planned which will contribute greatly to the beauty and adornment of our State.

Two fine parks, recently provided by private munificence deserve a special mention. On the thirty-first day of October, 1878, Hon. David Dudley Field, Stephen J. Field of the United States Supreme Court, Cyrus W. Field, and Henry M. Field, D.D., surviving sons of Rev. David Dudley Field, D.D., appropriately celebrated the seventy-fifth anniversary of their father's marriage by presenting to the town of Haddam two tracts of land for a public park. These grounds, finely laid out with drives and walks by Mr. Olmsted of New York, the landscape gardener, and adorned with the choicest ornamental trees, indigenous and imported, is a grand contribution to the taste, sociality, good fellowship, education, growth and prosperity of the town. Isinglass Hill, a high bluff on the eastern border of these grounds commands for many miles a magnificent view of the Connecticut river and its valley, with the long range of hills beyond. In behalf of the friends of rural adornment and of education, so far as I may represent them, I desire to express to the eminent Field brothers, a high appreciation of their grand gift to Haddam and thus to Connecticut, for our *State* takes a lively interest in the growth and prosperity of each of her towns. This worthy example ought to make many others, opportune as it is, in view of the growing interest in rural improvement throughout our State. There is hardly one of our towns, that has not at home or abroad, some favored sons who by forming parks or founding schools or libraries, could easily render this most fitting tribute to their mother soil, and thus be gratefully recognized as the benefactors of their fellow citizens and of future generations. The ambition to beautify and benefit one's native town is worthy of the best and noblest characters. There is a rare luxury in witnessing the fruits of one's benefactions, giving

while living and able to enjoy the rich results, rather than leaving legacies to be lessened or lost in the wrangles of contending heirs.

The value of a park was happily set forth by Hon. David Dudley Field in the following presentation address given before a large concourse of people at the dedication of these grounds.

“We are here to deliver into your hands the parcel of ground on which we are standing, and that other which lies in view before us, to be kept as pleasure grounds for the people of Haddam in all time to come. We give them in memory of our father and mother, who were married seventy-five years ago to-day, and came immediately afterward to make their abode on this river-side, where he was soon to become the pastor of the church and congregation. Here they lived active and useful lives, in the fear of God and love of man, doing faithfully their several duties, he in public ministrations from pulpit and altar, at bridal, baptism, and burial, and she in the quiet tasks of her well-ordered household. Here they passed their first years together; here they raised their first domestic altar, and here most of their children were born. For this cause, and in grateful remembrance of their love and sacrifices for us, we, their surviving children, four of us only out of ten, present these memorials, not of cold stone, though the hills about us teem with everlasting granite, but of shaded walks, green lawns, and spreading trees, where this people may find pleasure and refreshment, generation after generation, so long as these fertile meadows, these rugged hills, and this winding river shall endure. And remembering that “beauty is truth, truth beauty,” we hope that they will cultivate here that love of nature, which is a joy in youth and a solace in age; which nourishes the affections, and refines while it exalts; which rejoices in the seasons and the months as they pass, with their varying beauties; catches the gladness of June and the radiance of the October woods; and in every waking moment, sees, hears, or feels something of the world around to take pleasure in and be grateful for. We trust that they will come, not in this year only or this century, but in future years and centuries, the fair young girl, the matron in the glory of womanhood, the boy and the man, grandson and

grandsire, in whatever condition or circumstance, poverty or riches, joy or sorrow, to find here a new joy or a respite from sorrow; to drink in the light of sun and moon, listen to the music of birds and winds, feel the fresh breath of life-sustaining air, thank God and take courage.

“Reverently then we dedicate these memorials of our parents, to the enjoyment forever hereafter of those, and the descendants of those, whom they loved, and among whom they dwelt.”

Roseland Park, in Woodstock, promises to be one of the largest and finest private parks in the country. It includes sixty acres of land, with an undulating surface, bordering on Woodstock Lake, a beautiful pear-shaped sheet of water one mile long and half a mile wide, situated in a broad amphitheatre of wooded hills and fields, some fifteen miles long and five miles wide. The park contains three miniature mounts, the highest of which is Mount Eliot, so named from the “apostle” John Eliot who preached to the Indians in Woodstock, and as tradition has it, upon this hill. About one-quarter of the ground, including the three hills, is already a well-wooded grove of chestnut, oak, maple, beech and butternut, many of which have reached majestic proportions. About 2000 ornamental trees of choicest varieties have recently been planted in these grounds and along the many paths and drive-ways. Over 8000 flowering shrubs, plants and rose bushes have also been set out. 200,000 loads of sand and loam have already been used in filling up marshy spots and inequalities and in grading walks, avenues and grass-plots, and as much more will be required to complete the present plans. The tasteful buildings erected on the “made grounds” near the lake are a fine boat and bath house, a keeper’s lodge with ample stable and shed. A windmill supplies the dryer portion of the park with water.

The citizens of Woodstock, and of Windham county, owe this magnificent park to Henry C. Bowen, of the *New York Independent*, who has already expended upon it over \$40,000. Though the work is rapidly progressing and Mr. Bowen usually devotes five hours a day during the summer to assisting and directing these improvements, the work will not be completed till 1884. This park, accessible to all classes, is a

favorite place of resort to the citizens of Woodstock and indeed of Windham county, who gratefully appreciate the taste and liberality of the proprietor. Thousands of people annually gather here to celebrate the fourth of July, and listen to the distinguished speakers invited to address them. In view of the number and eminence of the speakers and the wide range of their topics this celebration on these beautiful grounds is quite unique.

10. The educational bearings of this subject, if less obvious, are not less important. The external improvements prompted by these associations have in many towns developed a local pride and public spirit which have displaced many a bleak, weather-worn and comfortless school-house. Public interest once enlisted in the adornment of streets, parks, cemeteries and kindred plans is sure to embrace the school-house. The people are learning that village improvement promotes the growth and prosperity of a town by inviting wealthy and desirable residents from abroad, just as neglected streets, school-houses and other signs of an illiberal policy invest a town with an air of discouragement and decay. The influence of such an association in cultivating the taste, fostering the study of nature, developing in youth a love of flowers, vines, shrubbery and trees, all the stronger because they have planted or cultivated them, thus fostering domestic attachments and checking the excessive passion for city life, suggest some of the ways in which it supplements the work of the school. The love of nature sharpens the senses and quickens all the intellectual faculties. An early interest in natural history favors habits of observation and trains both the memory and imagination.

The taste should be early cultivated. To love the beautiful should be held as a religious duty. In the very structure of our being, God rebukes the ignorance or indolence that so often dwarfs this noble faculty, designed to be an ally of virtue subordinating the animal and sensuous to the intellectual and spiritual. The love of the beautiful may become a source of high enjoyment, and give new incentives to mental effort. It reverently admires nature and makes her a constant teacher.

“No department of mind ought to be placed higher than the love of the beautiful. The love of beauty in God must be immense. The love of beauty carries a high moral quality with it. It is a law that we should worship God in beauty. Nowhere was it more powerful than in the temple. We see it in Revelation. The love of beauty increases in people the idea they have of the truth.”

A true Christian culture should lead our citizens, each to adorn his town, village, street, school-house, and first of all his home. Every tree, flower or shrub in the garden, every tasteful engraving or painting in the house, may add a new link to the golden chain which should ever bind the heart of childhood to the hearth-stone. Let taste brighten the joys of the domestic circle, and help to invest every scene in life with higher significance and beauty. The esthetic element as an educational force has been often ignored, and the craving of the juvenile mind for the beautiful rudely repressed.

Nature is the great educator. Birds, flowers, insects, and all animals are our practical primary teachers. In God's plan, facts and objects as best seen in the country are the earliest and the leading instruments of developing the faculties of the juvenile mind. They cannot be fully trained when cooped up within brick walls, witnessing only city scenes.

In all our history the country has proved the great school of mind. Here dwell and for wise reasons, here God intended should dwell, the great majority of mankind. The country sends far more than its proportion of gifted men to the great centers of influence. It is thus continually enriching the cities, for towards them are flowing, like their streams, the material and still more the mental treasures which have their origin in the mountain springs and without which the cities would die out. Called officially to visit all the towns of Massachusetts and Connecticut, I have often asked “what eminent men have you raised here.” Almost every town can give a list of which they are justly proud. A most instructive history would be that which should fitly record the achievements of those who have gone out from these rural districts to fill positions of commanding influence. In the language of Dr. Bushnell: “It is not in the great cities, nor in the con-

finest shops of trade but principally in agriculture, that the best stock or staple of men is grown. It is in the open air—in communion with the sky, the earth and all living things—that the largest inspiration is drunk in and the vital energies of a real man constructed.” Certainly the country may claim superior advantages for the physical, mental, and moral training of the young, wherever good schools are maintained.

Though I studied the Kindergarten system in Germany, and advocate it, I still contend that the best sort of Kindergarten is the open fields and varied objects of the country, if only the eye be trained to habits of careful observation. There, things are studied more than mere words, or rather the perception of objects and their qualities furnishes the material for thought and gives precision to language. Hugh Miller used to say: “The best school I ever attended was the miscellany of objects and circumstances surrounding me in my native district, challenging the first exercise of my senses and my fancy and that is a species of education open to all Open your eyes, the commonest objects are worth looking at, even weeds and stones and the most familiar animals.” He was educated by the rocks of old Cromarty on the shore of the North Sea. Scott was educated by the sounding surges of the sea. Webster was educated by the Salisbury Mountains. How different would have been the history of Washington had he spent his youth amid the excitements and diversions of a great city like London. Would Jefferson have attained his eminence and power, had he been early dandled in the lap of affluence in a city like Paris? How different would have been the career of the great naturalist of our day, had he spent his childhood in a large city. How fortunate for Agassiz and for the world that his native home was in the beautiful little village of Mottier in Switzerland, lying midway between the lakes of Neuchatel and Morat. The woody hills, the gardens and vineyards, the banks, cascades and lakes; the Jura and more distant Alps, with magnificent glaciers, glistening fields of snow and ice; these were his early teachers. His very sports served to convert the observing boy into the future naturalist. These were boating, fishing, hunting, studying birds and turtles, gathering bugs, butterflies and other

insects, roaming in the woods, taking long excursions on Lake Neuchatel, in whose waters clear to an unusual depth he could find the haunts and study the habits of the fish; climbing steep hills and rocky cliffs and even ascending the magnificent precipices of the Jura. Living much in the open air, he observed the birds so as to distinguish them by their beak, claws, size, form, plumage, song or flight. If in early life he knew less of books he had studied nature more.

The late Charles Hammond, one of the most successful of American teachers, used to say he was educated by the grand scenery of his native town—Union—comprising the highest land in the State east of the Connecticut river. From the homestead, he could see the church spires in many of the surrounding towns. From a hill near by, he used to “gaze at Wachusett Mountain in Massachusetts, and in a clear day could distinctly see the deep blue peak of Monadnock in Jeffrey, New Hampshire.” To continue his own words, “my father observed nature and loved flowers, and early taught me to observe the properties of plants and trees, and learn the names, habits, retreats and voices of the birds.” He often revisited this grand scenery to which he attributed the inspiration of his youth.

I often advise the sons of wealth in our cities to spend at least one year in the country, with its freer sports, and wider range of rambles, or better still, for both physical and mental training, to give one season to hard work on the farm or in the shop. The practical skill thus gained in adapting means to ends in observing things, common objects and animals, may compensate for some loss of book learning and lead one afterwards, like Agassiz, to pursue text-books with greater zest.

11. My interest in this work centers in the improvement of the homes and home life of our people. “The hope of America is the homes of America,” and the hope of Connecticut is the homes of Connecticut. There remain still too many homes and grounds desolate, neglected and repulsive, where taste and trees, shrubbery, hedges or creeping vines with a lawn would make “the wilderness blossom as the rose.” Unquestionably, neglect and slatternliness in and around the house repel from their rural homes many youth who might otherwise be bound

in strongest ties to the fireside. Our farmers and mechanics, or their thoughtful and thrifty wives, are beginning to realize how easily and economically, often without any outlay of money, they can surround their homes with flowers, the Virginia creeper, grape vines or trees, and thus increase the beauty, the attractions and market value of the homestead. These embellishments of the home and grounds help to cultivate domestic sentiments.

Without a Rural Improvement Association our best towns fall far short of what they might be and ought to be. Too often, neglected private grounds, dilapidated dwellings, barns or sheds, or a street ugly with piles of decaying brush or chips, discarded fruit cans, broken harrows, carts or sleds, a front fence with missing pickets and a disabled gate, give an air of shiftlessness that sadly mars the effect of an otherwise beautiful village. Here an Association is needed to develop that private taste and public spirit which will remove such defects and disfigurements. When every citizen is thus stimulated to make his own grounds and wayside not only free from rubbish, but neat and attractive, the entire town becomes so inviting and home-like as to give new value to its wealth and new attractions to all its homes. Such affectionate care and attention to the homes indicate a kindly, intelligent, home-loving people, and no better praise need be given to any people than that they tenderly cherish their homes. A stranger can hardly drive through such a town without saying "Here are people of refinement, who love their homes, and therefore tastefully guard the surroundings of their daily life." These surroundings, trifling as they seem to some, are the more important, because they are constant forces in moulding character. "Cleaning up, dusting, putting things in order," are little matters in the parlor, sitting-room or kitchen, yet how soon each becomes forbidding, when these trifles are neglected. Just so in a village, these minor matters neglected, and the comfort, content, reputation and prosperity of a whole community suffer, but worst of all, home life suffers and character deteriorates.

Modern civilization relates specially to the homes and social life of the people, to their health, comfort and thrift, their

intellectual and moral advancement. In earlier times and other lands, men were counted in the aggregate. They were valued as they helped to swell the revenues or retinues of kings and nobles. The government was the unit, and each individual only added one to the roll of soldiers or serfs. With us, the individual is the unit and the government is for the people as well as by the people.

It is a good omen that public interest in the embellishments of rural homes and villages is widely extending, and that the varied charms of the country with its superior advantages for the physical and moral training of children are attracting many thoughtful men to the simpler enjoyments and employments of rural life. With the growth of public taste the day is not distant when beautiful country seats and villages will abound throughout Connecticut. Dr. Bushnell, with his keen observation and intense love of rural scenery was wont to say, "No part of our country between the two oceans is susceptible of greater external beauty than Connecticut." A taste for rural adornment is a source of physical, mental and moral health as well as enjoyment. The parentage of parks, lawns, trees, flowers, vines and shrubs becomes a matter of just pride and binds one to the spot he has adorned.

The hankering for city diversions and excitements, and ambition for easier lives and more genteel employments have brought ruin to multitudes and financial disaster to the nation. A great peril to the land to-day comes from the swelling throngs, ranging from the reckless tramp to the fashionable idler, who are ever devising expedients, foul or fair, to get a living without work. The disparagement of country life has been one of the worst tendencies of the times.

Every influence should therefore be combined to foster home attachments, for there is protection as well as education in the fervent love of home with its sacred associations. Patriotism itself hinges on the domestic sentiments. When one's home becomes the Eden of taste and interest and joy, those healthful local ties are formed which bind him first and most to the spot he has embellished, and then to his town, his State and country. Whatever adorns one's home and ennobles his domestic life, strengthens his love of *country* and nurtures all

the better elements of his nature. On the other hand, no man without local attachments can have genuine patriotism. As happy in one place as in another, he is like a tree planted in a tub, portable indeed, but at the expense of growth and strength. Said Monsieur Lariaux, the French Deputy to the American Evangelical Alliance, in his farewell address, "your homes, homes, *sweet* homes—these are the safeguards of your freedom. Oh, pray, as you gather at your family altars, that my poor France may have such homes."

In traveling thousands of miles annually for many years, my experience has led me to expect kindness and refinement in the humblest hamlet to which flowers, well trimmed shrubs, or neat and cultivated grounds invite. But these outward adornments of the house, however valuable, are but symbols of what should be the attractions of its inner life, realizing the highest beauty in the unwearied and delicate attentions of each to all. The central duty of life is the creation of happy homes. The higher aim of the industries of the world, whether in agriculture, manufactures or commerce, and the purpose for which government itself is worthy to be sustained, is that men may live in happy homes. Let then the sunlight of generous love fertilize our homes as the garden of God—worthy to be as heaven designed, a divine institution, the only earthly paradise, the best symbol of and the best school for the paradise above, the spot most sacred on earth, to be cherished with the most grateful memories in all the future. Back to this holy ground consecrated by flowers and shrubs and trees each tenderly associated with a mother's love and a father's care, let Thanksgiving gather the scattered circle. Let the Christmas tree bear some fruit, even for the youngest. Let the birthdays be happily observed, and the marriage anniversary joyfully remembered.

The home should be the first and chief place to promote a love of flowers, vines, shrubs and trees by cultivating them, and thus early develop a love for the beautiful in nature, in art and still more in character. We need more heartily to cultivate home affections, provide home enjoyments and foster home courtesies. In the every day intercourse of home, there should be a more sacred observance of the amenities of life and a freer interchange of kindly feeling. As flowers seem

worthless to the thoughtless, so the morning and evening salutations in the family may seem little in themselves, but when fitly observed are mighty in their influence. As the sunbeam is composed of myriads of minute rays, so the home should be illumined and brightened by nature's richest hues without and still more by winning smiles within, cordial greetings, loving looks, gentle words, sweet laughter and nameless little kindnesses. Such beauties of nature and art, such amenities and affections should be the sunshine of home. They refresh and purify the social circle. Like the clinging vine, they twine themselves around the heart, calling forth its purest emotions and securing its most healthful activity. Such a home is worthy the name Ordinance of God. Such a heaven here will help prepare its members for the heaven above. Such an ideal may be an inspiration towards its realization.

If parents combine to make the circle of home-life beautiful without and within, they will sow the seeds of truth, kindness, honesty, and fidelity in the hearts of their children from which they may reap a harvest of happiness and virtue. The memory of a beautiful and happy home, and a sunny childhood is one of the richest legacies parents can leave to their children. The heart will never forget its hallowed influences. It is a fountain of enjoyment, to which the lapse of years will only add new sweetness. Such a memory is a constant inspiration for good and restraint from evil. If taste and culture adorn our homes, and grounds, and music adds its charms, our children will find the healthful pursuits and pleasures of rural homes more attractive than the pomp, and glare, and whirl of city life. Such early occupations and enjoyments will invest home life, and then school life and all ones future with new interest and value, with new significance and joyousness. For life is ever what we make it. We may by our blindness or folly or sin live in a world of darkness and gloom, or we may live in a world full of sunlight, and beauty, and joy, for the world without always reflects the world within.

12. These Associations have awakened new interest in tree-planting, both ornamental and economic. In answer to the question what ornamental trees to plant, I have usually recommended among our native trees the following, naming them in

the order of preference: The elm, maple, tulip, ash, linden or basswood, hemlock, white oak, black walnut, and hickory.

The white ash deserves more favor both as an ornamental and a timber tree. Combining lightness, strength, toughness, elasticity and beauty of grain in a rare degree, it is in great and growing demand for farming tools, furniture, interior finishing of houses and railroad cars, the construction of carriages, for oars and pulley blocks, and many other purposes. The excellence of our ash is one secret of the preference given abroad to American agricultural implements. It is hardy, will bear the bleakest exposure, is a rapid grower and attains large size, but will not thrive on poor lands. It is every way superior to the European ash, much as that has been cultivated and lauded abroad.

Connecticut is rich in its variety of native trees, having nearly sixty species, of which about forty are sizable for timber. The elm, when growing under favorable conditions, has been pronounced "the most magnificent vegetable of the temperate zone." The tulip tree or common white wood deserves much greater favor as an ornamental tree. It is a rapid grower, has a straight stem and attains large size. Taken from the woods when ten or fifteen feet high, it is not likely to live, but transplanted young from the nursery it proves thrifty and hardy. It is a common mistake to select too old trees for transplanting—so old that they must be beheaded. Not even the elm ever develops its full symmetry when subjected to such unnatural treatment. It is better to transplant all trees so young that with complete roots and good care they can grow without cropping.

Among imported trees the European larch should hold a prominent place. It combines the three qualities of rapidity of growth, symmetry of form and durability of timber. Mr. Maro Hammond, of Vernon, covered a worn-out, unsightly, gravelly hill in the rear of his home with a thousand larch, during this spring of 1880. If these thrive, he is to set out a much larger number next spring. John W. Nichols, of Branford, plants a large number this year. Three thousand larch and other exotics were set out in Clinton last year, besides many native trees. Some ten thousand larch trees were planted

last spring in Pomfret to reclaim exhausted hillsides. If these experiments in recuperating sterile soils are successful, they may lead to important economic results in addition to the adornment given to fields now barren and unsightly. Grigor says, "No tree is so valuable as the larch in its fertilizing effects arising from the richness of its foliage which it sheds annually. The yearly deposit is very great; the leaves remain and are consumed on the spot where they drop." Trees also enrich the soil by a curious chemistry which disintegrates even the rocks, and transmutes their particles into forms of life and beauty. The radicles and rootlets, in their under-ground laboratory, secrete acids which dissolve the very sands and stones.

In many positions groves are of great service as wind-breaks; even narrow strips of trees afford a shelter to fruit trees and to various crops, as well as a shield to cattle from piercing winds. Evergreens serve best for screens, as deciduous trees are leafless when their shelter is most needed, especially for stock and around farm buildings. The evergreens most suitable for this purpose are the Norway spruce, white pine, Scotch pine, and Austrian pine; and next to these are the American arbor vitæ, hemlock, and spruce. Sheltered orchards are most productive and less likely to lose their fruit prematurely by violent winds, and the farmer with proper wind-screens consumes less fuel in his house and less forage in his stables.

In some portions of Germany the law formerly required every landholder to plant trees along his road frontage. Happy would it be for us if the sovereigns of our soil would each make such a law for himself. Happy, also, if the law of usage, fashion, or interest here, as did the civil law there, required that every young man before he married should plant a wedding tree. In some of our Western States tree-planting by the road-side is encouraged by a bounty from the State treasury, and in the fields by both a bounty and exemption from taxation for a term of years. The law in Minnesota provides that "every person planting, protecting and cultivating forest trees for three years, one-half mile or more along any public highway, shall be entitled to receive for ten years thereafter an annual bounty of two dollars for each half-mile so planted and cultivated, to be paid out of the State treas-

ury; but such bounty shall not be paid any longer than such line of trees is maintained." I may be pardoned for repeating a personal allusion. The maples which I planted, when a mere boy, before the old homestead in Litchfield county, are now beautiful and stately trees. As I have often said, they have paid me a thousand-fold for the work they cost, and added new charms to that beautiful spot, to which I count it a privilege to make an annual visit. Among the memories of my boyhood, no day has recurred with such frequency and satisfaction as that then devoted to tree-planting. My interest in this subject is due to this incident (or perhaps accident) of my boyhood. I should be thankful if I could help put a similar incident, and an equally grateful experience, into the childhood of our boys of to-day.

In tree-planting, the economic and ornamental, touch at so many points that the cases are rare where they really diverge. Nothing, for example, can add so much to the beauty and attractiveness of our country roads as long avenues of fine trees. One sees this beautifully illustrated in France, where, for over a hundred miles on a stretch, the road is lined with trees. In many ways the first Napoleon's interest in arboriculture proved a benefaction to France. No time should be lost in securing the same grand attraction to the highways of Connecticut. Growing on land otherwise running to waste, such trees would yield most satisfactory returns. The shade and beauty would be grateful to every traveler, but doubly so to the owner and the planter, as the happy experience of many Connecticut farmers can testify. A grand work in this direction is already well started. No class can contribute so much to the adornment of our public roads as the farmers. They have already in abundance the very best trees for the roadside, such as the elm, maple, ash, American linden (or bass), oak, and in some localities the walnut. The hard maple will thrive in dry and gravelly soils, while the elm and red maple are specially desirable for moist, low ground. As the maples should be planted twenty-five feet apart, and the elms from forty to fifty, poplars or willows or trees growing rapidly from scions, may be placed between, to be cut down when their statelier neighbors require the room for their full development.

Tree-planting is fitted to give a needful lesson of forethought to the juvenile mind. Living only in the present and for the present, youth sow, too often, only where they can quickly reap. A meager crop soon in hand, outweighs a golden harvest long in maturing. They should learn to forecast the future as the condition of wisdom. Arboriculture is a discipline in foresight—it is always planting for the future, and sometimes for the distant future. Says Washington Irving, "There is something nobly simple and pure in such a taste for trees. It argues a sweet and generous nature to have this strong friendship for the hardy and glorious sons of the forest. There is a serene majesty in woodland scenery that enters into the soul, dilates and elevates it, and fills it with noble inclinations. There is a grandeur of thought connected with this heroic line of husbandry. It is worthy of liberal and free-born and aspiring men. He who plants an oak, looks forward to future ages and plants for posterity. He cannot expect to enjoy its shelter, but he exults in the idea that the acorn which he has buried in the earth shall grow up into a lofty pile, and shall keep on flourishing and increasing and benefiting mankind long after he has ceased to tread his paternal fields." It was the trees of his own planting at Sunnyside-on-the-Hudson, more than the beauty of the surrounding landscape, that led Irving to say, "After all my wanderings, I return to this spot with a heartfelt preference for it over all others in the world." It was the simple beauty he had created at Marshfield,—the grassy lawns, the shaded approaches, the hundreds of trees of his planting,—that bound Daniel Webster so strongly to that sequestered spot. The charm of Abbotsford, the grand Mecca of Scotland, comes mainly from its beautiful ivy and shrubbery and the thousands of trees planted by the hand of its illustrious proprietor. Says Sir Walter Scott, "My heart clings to this place I have created. There is scarce a tree in it that does not owe its being to me. Once well planted, a tree will grow when you are sleeping, and it is almost the only thing that needs no tending."

Over three million dollars have been expended in the last ten years in Connecticut, in building and repairing school houses. Wise and necessary as was this expenditure, had one-

hundredth part of this sum been spent annually in planting trees and adorning the school grounds, a still better result would have been accomplished in cultivating the taste of our youth, leading them to study and admire our noble trees, and realize that they are the grandest and most beautiful products of nature and form the finest drapery that adorns this earth in all lands. Thus taught, they will wish to plant and protect trees, and find in their own happy experience that there is a peculiar pleasure in their parentage, whether forest, fruit or ornamental—a pleasure that never cloy, but grows with their growth. Such offspring they will watch with pride, as every year new beauties appear. Like grateful children, they bring rich filial returns and compensate a thousand-fold for the trouble they cost. This love of trees early implanted in the school and fostered in the home, will be sure to make our youth practical arborists. They should learn that trees have been the admiration of the greatest and best men in all ages. The ancients understood well the beauty and hygienic value of trees. The Hebrews almost venerated the Palm. It was the chosen symbol of Judea on their coins and graven on the doors of the temple as the sacred sign of justice. The Cedar of Lebanon was the pride of the Jews and became to them the emblem of strength and beauty as is seen in Ezekiel's description of a Cedar in Lebanon with fair branches and with a shadowing shroud and of a high stature and his top was among the thick boughs. The height was exalted above all the trees of the field and his boughs were multiplied and his branches became long. Thus was he fair in his greatness, in the length of his branches, nor any tree in the garden of God like unto him in beauty.

The Egyptians, Greeks and Romans were proficient in tree planting. Hence Thebes, Memphis, Athens, Carthage, Rome, Pompeii and Herculaneum, as their very ruins still show, had each their shaded streets or parks. Two thousand years ago, it was the ambition of the richest Romans to maintain a rural home in or near the city as it is of the wealthy Londoner, Viennese, or Berliner to-day, and their ancient villas were most lavishly adorned. The Paradise of the Persians was filled with blossoming trees and long lines of roses. This taste for beauti-

ful gardens was transplanted from Persia to Greece, and the greatest Greek Philosophers held their schools in beautiful gardens and groves. The devastation of parks, the destruction of shade trees, the neglect of public streets and private grounds, the decay of rural tastes and the utter slight of home adornments were clearer proofs of the great relapse to barbarism than the vandalism which merely destroyed the proud monuments of classic art and literature.

In tree planting, the beginning only is difficult. It is the first step that costs—at least it costs effort and persuasion to set this thing on foot—but that step once taken, others are sure to follow. On this account, I have tried various devices to get our youth initiated in tree-planting. In 1876 an effort was made to promote "Centennial Tree-Planting" by the offer of prizes, which proved successful far beyond my expectation. Many youth in Connecticut whose first experience as little arborists was prompted by those prizes, have become so interested in this pleasant work that they have continued it each subsequent spring. In 1878 the accident of the blowing down of a famous willow led me to offer them several thousand scions. Beautiful as that exotic is, I was careful to state that it is not comparable to many of our majestic natives, saying in a circular then addressed to our boys: "Because the main tug is at the start, on account of the inertia of ignorance and indifference, that start should be made easy. I should greatly prefer to start five thousand elms or maples this year in Connecticut, if it could be done as easily as my five thousand willow scions seem likely to be stuck in the ground. This proposal is made as a mere beginning in tree planting, sure to lead to something more and better."

These and other plans have manifestly increased the interest of our youth in arboriculture through the State. There is nothing more ennobling than the consciousness of doing something for future generations, something which shall prove a growing benefaction in coming years. Tree-planting is an easy way of perpetuating one's memory long after he has passed away. The poorest can in this way provide himself with a monument grander than the loftiest shaft of chiseled stone, which may suggest duty to the living while it commemo-

rates the dead. Such associations grow in interest from year to year and from generation to generation. It will yield a rich harvest to future generations, if we can now stimulate a revival of arboriculture throughout our State. I confess to a grateful pride in the fact that something in this line has been recently accomplished in nearly every town of Connecticut. If this work is duly extended, our whole State will be transformed into a series of beautiful villages. Nothing can add such a charm to our country roads as long and magnificent avenues of stately trees.

The benefits that may accrue to our country from the discussion of tree-planting, were strikingly exhibited two hundred and fourteen years ago, when Sir John Evelyn published his celebrated work, entitled, "Sylva; or, a Discourse on Forest Trees and the Propagation of Timber." It was at once received with great public favor, and honored with royal commendation. He had remarkable success in awakening general interest in silviculture. He was one of the founders of the Royal Society, and wrote this book at its special request, and that society has originated few books in the last two hundred years more useful than this which still survives in its grand results, although his other works on painting, sculpture, architecture, and medals have long since been forgotten. In many ways England has recognized her great obligations to the man who worked so lovingly and effectively for the good of his countrymen.

Disraeli, in his "Curiosities of Literature," fittingly says: "Had Evelyn only composed the great work of his *Sylva*, his name would have excited the gratitude of posterity. The voice of the patriot exults in the dedication to Charles II, prefixed to one of the later editions, in which he says: 'I need not acquaint your Majesty how many millions of *timber* trees, besides infinite others, have been planted throughout your vast dominions at the instigation of this work, because your Majesty has been pleased to own it publicly for my encouragement.' Surely, while Britain retains her situation among the nations of Europe, the *Sylva* of Evelyn will endure with her triumphant oaks. It was a retired philosopher who aroused the genius of the nation, and who, casting a prophetic eye towards the

age in which we live, contributed to secure our sovereignty of the seas. The present navy of Great Britain has been constructed with the oaks which the genius of John Evelyn planted."

13. The economic bearings of this subject claim attention. The money wisely expended for the adornment and improvement of a town is a good investment. It pays in many ways. Such improvements help to retain in a town its wealthy and public-spirited citizens, whom a narrow and unprogressive policy would repel. Dr. Bodwell, who was long a resident in England, took a deep interest in this subject, when professor in the Theological Seminary of Hartford, and after journeying widely through Connecticut, said, "This village improvement all over our State is of great promise in a variety of ways. One most valuable result will be that a larger proportion of the enterprising young men will stay at home and cultivate the farms and make it a good thing too, with their intelligence and improved methods, and then the maidens will stay of course, and weddings will multiply, and the old homes will again be full of rosy children as in 'the ages past,' and the commonwealth will make a new and noble start in the career of riches and honor. In traveling over the State, one is constantly greeted with new surprises in the discovery of charming landscape pictures, with the finest possible sights for delightful residences; such as merchant princes might envy. England in its natural features is not comparable to Connecticut in wide variety of the picturesque and romantic. How exceedingly beautiful our little Commonwealth is destined to become at a future day, by the culture which is every day extending under the lead of village improvement associations, and in the erection of elegant country seats, is a thought continually suggested."

In the history of our towns public improvements and growth often stand related as cause and effect. Immigration from New York is one source of the increase of these towns. Since the solution of the long-vexed problem of rapid transit by the elevated railroads, Connecticut has the opportunity of inviting or repelling desirable residents in greatly increasing numbers. Growing rapidly as New York now is, where shall its swelling

throng of business men find their homes? A liberal spirit will invite wealth and population in still larger measure to our borders. The new comers from New York city to the shore line and other progressive towns are the friends of public improvements, because these are investments which ultimately enrich a community. A penurious policy is penny-wise and pound-foolish. It defeats its own aim of saving, and results in final deterioration and loss. Men of affluence and culture shun a narrow-minded and illiberal community. A good name tends to enrich a town as well as an individual, while a bad one may impoverish both.

14. There is no rural improvement more practical and valuable than the recovery of once fertile lands now lost to tillage. The waste lands of New England and the Atlantic states are already very extensive. They consist of, first, exhausted pasture land once arable, second, rough, rocky hills and hill-sides, formerly good grazing ground, but now so overrun with hard-hack or other useless bushes as to be worthless for pasturage, third, swamps, marshes, moors and bogs, and fourth, sand-barrens. Except the third class here named, nearly all these lands have been made barren by our improvidence and carelessness. My special aim has been to encourage the recuperation of such lands by tree planting.

For the reclamation of our pastures and waste lands abandoned to hard-hack, sumac, and other worthless brush, the European larch deserves to become a favorite. A native of the Alps, Apennines, of the Tyrol and Carpathian Mountains, it is a very hardy tree, and at home in a variety of well-drained soils, especially on rough, rocky, or gravelly ground, and the most rugged ravines. There are in our State large tracts of bleak hill-sides and mountain declivities or summits exhausted and now practically worthless, where the larch, thickly planted, would soon choke out all brush, and weeds. As an ornamental tree it grows finely even in deep and rich loam, but its extraordinary qualities for timber may be impaired when grown on the rich prairies of the West or the best lands of the East. When raised under right conditions, it combines the two qualities of rapidity of growth and durability of wood more than any other tree. More than two thousand years ago this wood

was in high favor with the Romans for the building of ships and bridges. Julius Cæsar spoke strongly of its strength and durability.

I heard a lumber-man in Venice say that its durability was amply attested there, as most of the houses of the city are built upon larch piles, many of which, though in use for centuries, show no signs of decay. In a large Doge's palace, now used as a hotel, he showed me some very ancient larch window-casings which are still sound. For gondola posts in the canals adjoining the houses the larch is preferred. In wharves and many other positions in England, where there is an alternation of wet and dry with the tide, the larch has stood this most trying test far better than oak. In England it is regarded as the best timber for railway ties. Monville says: "In Switzerland, the larch, as the most durable of woods, is preferred for shingles, fences, and vine-props. These vine-props remain fixed for years, and see crop after crop of vines bear their fruit and perish without showing any symptoms of decay. Props of silver fir would not last more than ten years." Evelyn says: "It makes everlasting spouts and pent-houses, which need neither pitch nor painting to preserve them." Michie affirms that "For out-door work it is the most durable of all descriptions of wood. I have known larch posts that have stood for nearly fifty years." Professor Sargent expresses the opinion that "For posts it will equal in durability our red cedar, while in the power to hold nails it is greatly its superior." The chestnut railway sleeper, secreting an acid which corrodes iron, loses its power to hold the spikes in about seven years, though the tie itself may not so soon seriously rot. The larch, while it holds iron as firmly as oak, unlike the latter, does not corrode iron.

The president of the Illinois Central Railway, having examined the vast planted forests of larch in Europe and learned its remarkable fitness for railway ties, offers to transport the young plants free of charge to any point on their lines or leased lines, provided they are to be planted in the vicinity of the same. It is, however, an experiment which time alone can determine, whether the larch will retain its durability when planted in the level, deep, vegetable mould of the prairies, with their

retentive sub-soil. That it will grow there rapidly and luxuriantly is amply proved, but its history for many centuries shows that elevated lands suit it better than low grounds, and side-hills and mountain slopes better than flats. In the rich river flats of Kew Gardens and in the vicinity of London the larch does not thrive. The specimens found in that remarkable collection of all known trees are puny. The Kew arborist informed me that in the two hundred and seventy acres appropriated to the arboretum, no spot had been found suited to the larch.

No other tree has been planted so extensively in Scotland. It attains maturity long before the oak, and serves well for nearly all purposes for which oak is used. Larch trees thirty years old are sometimes sold for fifteen dollars each, while oaks of the same age are not worth three dollars each. As the larch grows erect, with short and slender laterals, it may be planted much thicker than the oak. According to Loudon, ten acres of larch will furnish as much ship timber as seventy-five acres of oak. Its large timber yield per acre is one source of its popularity in Britain. It was first planted on the estate of the Duke of Athole, in 1741. Some stately specimens nearly one hundred and forty years old may be seen near the cathedral at Dunkeld. Mr. McGregor, the duke's forester, informed me that on this one estate have been planted over twenty-seven millions of larch trees, covering over sixteen thousand acres, some of which was formerly worth only from one to two shillings per acre. Dr. James Brown says he has seen matured crops of larch of sixty-five years' standing sold for from \$750 to \$2,000 per acre, when the land was originally worth only from \$2 to \$4 per acre.

The reclamation of marshes by drainage, both surface and subsoil, has been carried on for so long a period and on so broad a scale and with such grand results as to need no detailed discussion here. England, Ireland and Holland, to name no other countries of Europe, contain millions of acres of such land, now reclaimed and exceedingly fertile. Even lakes from ten to fifteen miles in length have been drained. In 1848 was completed the draining of the Lake of Haarlem in Holland. The lands thus recovered have since been sold

by the Government for nearly \$3,500,000, or about \$80 per acre. The success of this grand experiment has prompted others, like the draining of the Zuid Plas—a lake covering nearly 12,000 acres, and the great work now progressing to drain an arm of the Sheld, which will recover some 35,000 acres. Encouraged by the results of these enterprises, the Netherlandish engineers now advocate the stupendous project of draining the great salt water basin of the Zuiderzee—an inland sea which covers 1,300,000 acres. The Italians have nearly completed the work of enlarging and deepening the tunnel cut by the Emperor Claudius 1800 years ago, to drain Lake Celano. 30,000 workmen were employed on this sub-teranean passage for eleven years. Though this remarkable undertaking—the wonder of that age—was successful, in the following reign it fell into disrepair and continued to be neglected for centuries. It is one of many proofs of the revived energy and enterprise of the present generation, rivaling their historic ancestors, that they have restored and surpassed this old Roman work. This new tunnel, more than four miles in length and costing over six millions of dollars, will ultimately recover for agricultural occupation forty-two thousand acres of most fertile land. Already some 36,000 acres of rich arable land have been reclaimed, on which the crops yield a profit of from thirty to thirty-six per cent.

While it is interesting to know the extent and success of lake drainage in the old world, in our country with millions of acres of virgin soil, such expenditures would be unwise. But in New England and the Atlantic States there are large tracts of bogs and swamps that may be easily and economically reclaimed by drainage. The hygienic advantages of stopping malarious exhalations from stagnant pools would be clear gain. This practice has been common in Europe for a long period. When the works now in progress in Hungary are completed, that country will have over a million acres of swamp land drained and brought under cultivation. Many thousand acres have thus been recently improved in Italy and similar works are now progressing in France and elsewhere in Europe. Much has lately been done in the same direction on our New Jersey sea coast, along the shore of Lake Michigan and somewhat in

the New England States. Several successful experiments in swamp-drainage and securing land from overflow have been tried in California, thus already improving some 200,000 acres of land on our Pacific coast. The diking in and reclaiming the salt marshes along the seashore is worthy of increased attention. In Marshfield, Massachusetts, over 1400 acres of salt marsh have been already greatly improved by shutting off the tides of the ocean, at a cost of over \$30,000. If the success expected attends this experiment, it will deserve to be repeated on a broad scale along our seashore. The improvement of moors and wet lands by spreading layers of sand is too familiar to need description. Tile drainage, though but recently introduced in this country, is rapidly growing in favor. Though more expensive than surface drainage, it produces far better results. In this way large tracts of wet land have been recently improved, especially in the Western States. The statistics from a single State will indicate the general progress in this direction. In 1876 less than five million feet of tiles were sold in Illinois: in 1877 over fourteen million feet were sold.

The extent of soil depletion in many of the Southern States, according to Dr. Tichenor of Alabama, is "painful and humiliating. The fields of Middle Georgia were once the richest cotton lands of the South. After wearing them out, the planters went to Alabama, and there repeated the same process of exhaustion. Now the line of greatest production has receded from the seaboard to Texas. Those who thus carelessly strip the soil of its wealth are traitors to those who come after them. This ignorant plundering of the soil is an evil which threatens our national stability. One cause of the long continued fertility of China and Japan is the care with which every element of the soil is husbanded."

The practicability and even the possibility of reclaiming the sand-barrens of the Atlantic States is so generally doubted, that it is needful to show what has been done in this direction under conditions the most unfavorable and where it was confidently predicted nothing could be made to grow. The feasibility of reclaiming our barren wastes, is proved by many facts abroad and at home. Our Atlantic sand plains were once cov-

ered with forests. The now bare, white sand hills of Provincetown were described by the Pilgrims, on their landing there, as well-wooded. The sand hills on the coast of Prussia were formerly wooded, down to the water's edge, and "it was only in the last century, says Geo. P. Marsh, "that in consequence of the destruction of their forests, they became moving sands. King Frederick William I. when in pressing need of money, sold the forests of the Freische Nehrung for 200,000 thalers, and the trees were all felled. Financially the operation was a temporary success, but in the lasting material effects, the State received irreparable injury and would now gladly expend millions to restore the forests again. The dunes of the Netherlands were clothed with trees until after the Roman invasion. The old geographers speak of vast forests extending here to the very brink of the sea, and the drifting coast dunes have assumed a destructive character in consequence of the improvidence of man. The history of the dunes of Michigan is the same. Forty years ago, when that region was scarcely inhabited, they were generally covered with a thick growth of trees, and there was little appearance of undermining and wash on the land side, or of shifting of the sands, except where the trees had been cut or turned up by the roots."

The sand dunes of Denmark cover over 160,000 acres—those of Prussia 110,000—those of the single province of Gascony in France over 200,000, and in all Europe the drifting sands, according to Pannewitz, cover 7,000,000 acres. Says Marsh: "There is no question that most of this waste is capable of reclamation by simple tree planting, and no mode of physical improvement is better worth the attention of civilized governments than this. There are often serious objections to extensive forest planting on soils capable of being otherwise made productive, but they do not apply to sand wastes which, until they are covered by woods, are not only a useless incumbrance, but a source of serious danger to all human improvements in the neighborhood of them."

This is a subject of practical interest to us because we have along the Atlantic coast as at Cape Cod, in Connecticut, at some points in New Jersey, and other Atlantic States, on the shores of Florida, on the Gulf Coast, on the eastern shore of Lake Mich-

igan and elsewhere, long tracts of drifting sand that have done serious local damage. To stop this extension, considerable expenditures have already been made in several States to cover their surface with a vegetable growth.

But this reclamation of barrens and sand dunes has been carried on most extensively and successfully in France. These sand hills or dunes as they are called, stretched over a hundred miles along the coast of the Bay of Biscay, between the rivers Adour and Gironde. Ranging from 180 to 320 feet above the level of the sea, they are composed of white silicious sand rounded and reduced to minute grains by trituration. These grains are still too heavy to be borne aloft by the winds and scattered afar like the ashes of volcanoes. On the Atlantic shore of France, the prevailing and most violent winds are from the west and southwest. Hence at low tide, the sands dried by the sun and the wind were driven as along an inclined plane up the slopes which descend seaward and thus formed these growing dunes, which moving inland created great desolation.

Nearly a century ago Bremon tier published a memoir on the reclamation of sand dunes. Under the patronage of the French Government, he successfully introduced the planting of the maritime pine along the Atlantic coast of Gascony. These plantations have been perseveringly continued from that time to the present, and now cover over 100,000 acres in that single district. Not only has this wide area been reclaimed and made productive soil, but a still greater extent of fertile land has been rescued from the destruction threatened by the advancing sand hills. In speaking of the monument erected to Bremon tier in this now stately forest, Marsh says: "He deserves to be reckoned among the greatest benefactors of the race."

In planting the dunes, a barrier along the shore was found necessary at first to protect the young trees from the rolling sands which otherwise would bury them. A double line of paling was erected parallel to the shore and a hundred meters from high water mark—the second line being a hundred meters further inland. This paling is made of planks sharpened at the lower end and driven into the sand. Spaces of an inch between the planks allow sand enough to pass through to bank up equally on both sides and relieve somewhat the force of the

wind by allowing it to pass through these openings. As the paling is covered by the sands the planks are raised one at a time. A movable frame with a long lever mounted on runners, so that it can be slid along the top of the fence, and having pinchers or a clamp and chain, is easily carried and operated by one man.

The total cost of planting and protecting the pines has sometimes been as much as \$40 per acre. The timber of this plantation has long been a source of profit, affording both resin and wood. France now draws an annual revenue of 130,000 francs from the resinous products of these forests. But in this case the greater profit comes from the consequent protection of the adjoining country from the encroaching sands, which had formerly sterilized fertile regions and buried thriving villages. M. Samanos says that "in all France nearly one million acres (400,000 hectares) of desolate land, supposed to be doomed to everlasting sterility, have been reclaimed, and these savage deserts are now stocked with maritime pines which will become for the country a fruitful source of wealth, and supply some day the wants of the whole of France."

A liberal appropriation is now made annually for the continuance of this work. The whole extent of dunes in France that remains to be planted is nearly 80,000 hectares, or about 200,000 acres. A small subsidy is given by the State to those who own and plant them, but most of this land belongs to the State and is managed entirely by the Forest department.

These successful experiments, conducted on so broad a scale and for so long a period, clearly prove the practicability of arresting and utilizing sand drifts by the plantation of trees. What has been done abroad on the most unpromising beach sands may surely be accomplished under the more favorable conditions of our Atlantic barrens, not necessarily by planting the same trees or by the same methods, but by those plans which a study of the local climate and conditions in each case will suggest. The young plants in France have been sheltered at the outset by sowing with the pine seeds certain hardy weeds, herbs and grasses like the yellow lupin, which gave a temporary shade and protection, and by their decay helped somewhat to enrich the soil. Some arborists affirm that oats

or rye, or our blue lupin which thrives in dry soil, will serve the same purpose on our barrens. I have not space to detail the kindred methods of recuperating sand barrens in other countries of Europe.

I can only name a few illustrations of the extent of this work. Hummel attributes the devastation of the Karst, the high plateau lying north of Trieste—until recently one of the most parched and barren wastes in Europe—to the felling of its woods, centuries ago, to build the navies of Venice. The Austrian government is now making energetic and thus far successful efforts for the reclamation of this desolate waste, having planted over half a million of young trees and sown great quantities of seed. In the vicinity of Antwerp less than fifty years ago was a vast desolate plain. Looking to-day in the same direction from the spire of the cathedral, one can see nothing but a forest, whose limits seem lost in the horizon. Forest plantations have transformed these barren lands into fertile fields. On the Adriatic, Baltic, Mediterranean as well as the Biscayan coasts the disastrous encroachments of the sea have been checked by forest plantations. Extensive plains, once barren sands south of Berlin, about Odessa and north of the Black Sea and vast steppes in Russia, are now well wooded. R. Douglass & Sons, of Waukegan, Illinois, who have been the pioneers in promoting economic tree-planting in the West, began four years ago the experiment of reclaiming barren sand ridges near the shore of Lake Michigan, trying pitch pine, white pine, Austrian pine and Scotch pine. Here, as on Cape Cod, the Scotch pine proved the best for reclaiming sandy barrens. With these facts from abroad and at home it cannot be denied that even the poorest soils of the Atlantic States may be reclaimed.

All sand wastes are by no means alike. Trees which will grow luxuriantly on one will pine away and die on another. The climate, too, varies, as well as the soil. The *soil* of Cape Cod and Nantucket is well fitted for the maritime pine, where it has been amply tried. It grows well for a season or two, but is sure to winter-kill in a few years. It suffers from the severity of the winter in Holland and Germany. Sea spray and saline constituents in the soil or air are fatal to some trees

and favorable to others. A knowledge of the natural growths of each vicinity will favor adaptation to local conditions.

Though dry at the top, sand dunes and most sand plains and hillocks are *moist* a little below the surface, by reason of evaporation from the lower strata, retention of rain water and capillary attraction. The latter cause depends upon the size of the grain of sand. The finer the grain the greater is its capacity for receiving moisture and the longer is the moisture retained.

As this scheme of recuperating sand wastes will be regarded as chimerical by many who have not investigated the subject, I will cite facts found near home. Having made a trip on Cape Cod, expressly to inspect their reclaimed lands and confer with the intelligent tree planters there, who are the American pioneers in this work, I will summarize briefly the information gained from them. The amount of land planted with trees in Barnstable county is about 10,000 acres. Before the trees were planted these well-nigh worthless lands could be purchased at from 25 to 50 cents per acre. I was interested in the plantations of John Doane, of Orleans, the oldest living silviculturist in America (now 89 years of age), who has planted 170 acres. He has sold planted lands for \$14 per acre, not worth over 50 cents before planting, which he considers a good investment. But the best pay has been his enjoyment of this work, so manifestly growing with the growth of these trees. The forests he has created have long been to him a source of pride and satisfaction, greatly improving the surroundings of his place, and thus helping to brighten and prolong his years. John Kenrick, of South Orleans said: "My experiments in tree-planting have been made on over a hundred acres now covered with trees from one to thirty-five years old, chiefly pitch pine. I am now trying Scotch and Corsican pine and European larch. My first aim has been to cover my worn out lands with beauty and verdure, and it has proved a successful and economic experiment. The seed of the pitch pine is worth from one to two dollars a pound, the higher price being in the end the cheapest. Fresh seeds *carefully gathered* are as sure to vegetate as corn. I have tried every method of tree-planting, transplanting trees from the smallest to those that are two feet

high. This is a costly plan, but may be adopted when one wishes to save time, or desires a few trees as a wind-break or otherwise. In transplanting trees *immediately* from my own nursery to the fields, my favorite time is just as the buds begin to start in the spring. I have planted seeds both with a planter and by hand. On our light sands a man and a boy will plant three acres in a day—dropping six seeds in a hill, it will take about one-half a pound of seed to the acre. This is my favorite method and is more satisfactory in results though more costly than that of using the plough and planter. When the evergreens are two feet high I would thin them, leaving one thrifty plant in each hill. I do not trim till they get large and then cut off only the dead branches.”

Tully Crosby, of Brewster, said: “In our small town about 1500 acres of old waste land have been planted with pitch pine. The Norway pine has not proved a success with us. Many old fields bought for fifty cents per acre and planted with pine twenty-five years ago, are now worth from \$10 to \$20 per acre. The pines grow well for twenty-five or thirty years and when cut off a second crop springs up immediately and this crop does better than the first. The pitch pine takes root and grows on our barren beach sand where no soil is perceptible. Our people are now planting trees every year. I have recently planted twelve acres. Two years ago I cut off a lot planted thirty years since and the land is now full of young pines scattered by the first growth. A man with a two-horse team and planting machine can plant ten acres in a day and three pounds of seed will do the whole.”

E. Higgins, of Eastham, said: “Thirty years ago twenty acres of condemned tillage land, worth one dollar per acre, was planted with pitch pine. The present value of this land is \$15 per acre. In 1870, 225 acres more of the same sort of land was thus planted, the present value of which is \$8 per acre. About 150 acres of sandy land, utterly barren and not worth fifty cents to the acre have been planted, the present value of which is \$7 per acre.” John G. Thompson, of North Truxo, says: “About 650 acres have been planted in this town. The price of pitch pine seed for the last few years has been \$1.50 per pound. Thirty years ago land in this town could be

bought for tree planting at twenty-five cents per acre; now the same kind of barren land sells for \$2 per acre for tree-planting. I find the expense of planting the pines to be \$2.25 per acre."

S. P. Phinney, of Barnstable, said: "Large tracts of worn-out lands in this country, that were worth comparatively nothing, have been planted from the seed of the pitch pine. These experiments have proved successful. I know of no way in which the light sandy lands in this section can be made so valuable as by planting the pitch pine. Our experience proves that the cultivation of forest trees is feasible and profitable in New England seaport towns. In 1845 I planted in this town a ten acre lot with pitch pine seed, much as corn is planted, dropping three seeds in a hill and covering them with half an inch of soil. To-day many of these trees will gird more than a man's body. Hundreds of acres in this section are being planted annually."

We have a great Sahara in Connecticut less than ten miles from New Haven, produced by improvidence and neglect. The local traditions tell us that the sand-blow covering so large an area in the towns of North Haven and Wallingford was once finely wooded. Here and there clumps of low pines and birches, the lone relics of a former growth, still resist the drifting sands. So general is the conviction, that this sand-blow is utterly irreclaimable, that it has long since been abandoned to hopeless sterility. I shall be happily disappointed if my plan for utilizing it is not regarded by many farmers as visionary and impracticable. But the feasibility of reclaiming such wastes is proved by many facts. The cost of reclaiming the sand barrens on Cape Cod has been small—from three to five dollars per acre, but the profit has been satisfactory to the planters. The best time for planting the pine seeds is as early in the spring as the frost permits. The work is done by hand or by a seed-planter, and in rows about as thick as corn is ordinarily planted. On the Cape Cod barrens there was no vegetation, except a little moss, low poverty grass, so-called, and in some cases light beach grass.

Experiments are now in progress to fix the dunes or sand hills which threaten the Suez Canal by planting the maritime

pine and other trees. I visited the celebrated forest of Fontainebleau in France, which covers an area of sixty-four square miles. The soil of this wide tract is composed entirely of sand and apparently as dry as the sand plains of Wallingford, Conn. Jules Clare, a student of forest science of world-wide fame, says, "the sand here forms ninety-eight per cent. of the earth, and it is almost without water; it would be a drifting desert but for the trees growing and artificially propagated upon it."

What has been done with signal success at Fontainebleau in Gascony and many other provinces of France, as well as in other European countries and on Cape Cod, shows the practicability of reclaiming the worst deserts that can be found in our Atlantic States. Many other facts might be cited were it necessary, both from home and foreign fields, to prove the feasibility of this plan of reclaiming sterile lands. If one is to be commended who makes two blades of grass grow where but one grew before, how much more the farmer who makes forests thrive where *nothing* now grows.

The question is still often asked, will it pay the average farmer to plant trees? Certainly not, if early profit is essential. The answer depends on various circumstances, such as the size of one's farm, its soil and situation. But on an ordinary farm of from sixty to one hundred acres and upwards, I answer yes. If you are looking ahead and seeking an investment for future profit, "trees will make dollars, for they will grow in waste places where nothing else can be profitably cultivated. A soil too thin and rough for cereals may be favorable for trees. Hillsides and plains exhausted and worn out by the plow have often been reclaimed by planting forests. Ravines too steep for cultivation are the favorite seats of timber, and wherever a crevice is found in a rocky ledge, the root of a tree will burrow and spread, taking a hold so firm as to defy the storm, and acting mechanically disintegrate the rock and change its constituent elements into useful products. By the road-side, the river-bank, along the brook, and on the overhanging cliff, a tree may be always earning wealth for its owners. In no way can we ultimately enrich a State more than by planting the choicest trees on our exhausted and un-

productive lands. In such situations, forests will yield a large percentage of profit. This is a duty we owe to ourselves and to our children.

George Peabody, who did so much to encourage schools and learning, originated the motto, so happily illustrated by his own munificent gifts to promote education: "Education—the debt of the present to future generations." We owe it to our children to leave our lands and towns the better for our tillage, and we wrong both ourselves and them if our fields are impoverished by our improvidence. But much as foresight is admired when its predictions are realized and its achievements made, all history too plainly tells that the mass of men are not easily persuaded to provide for exigencies far in the future.

Though the profit from tree-planting is remote, the pleasure is immediate. The sour and selfish soul may say, "Posterity has done nothing for me, and I will do nothing for posterity." But every effort to start agencies whose benign influence shall long endure, gives a glad inspiration and a conscious elevation of character.

15. The improvement of the surroundings of railway stations may well enlist the efforts of these associations. The railroad depots in America are often made repulsive by neglect or by the accumulation of discarded and decaying sleepers and other unsightly rubbish, while those in Switzerland, France, Germany and England are always neatly kept and usually adorned with shrubs, flowers, or their beautiful English or German ivy, sometimes covering the station-house with its dense garniture of foliage. The Pennsylvania Central Railroad, at the stations west of Philadelphia, is following this worthy European example. The beautiful little parks at Pomfret and Stonington depots in Connecticut, and those at Kingston, Rhode Island, and at North Conway and Plymouth, New Hampshire, show how simply and inexpensively our railroad stations may be made attractive. Parks and gardens are a proof and product of civilization, and are an index of the wealth and culture of any community. In the European countries above named, the Railway managers make it a part of the regular duty of the station-masters to adorn the surrounding grounds. There is a generous rivalry among these agents, who become justly proud

of their railway gardening and sometimes find their gain from the sale of bouquets to passengers. In striking contrast with these adornments is the slatternliness disfiguring our depots, as well described by D. G. Mitchell. "There are many charming suburban retreats near New York city, to which the occupant must wade his way through all manner of filthiness and disorderly debris, making his landing as it were in the very dung-heap of the place. Is there no remedy for this? Must we always confront the town with its worst side foremost? To make a township attractive, the approach to it must be attractive. Every village station wants its little outlying Green to give character and dignity to the new approach. In nine out of ten of way-side towns, such space could be easily secured, easily held in reserve, easily made attractive; and if there was no room for a broad expanse of sward, at least there might be planted some attractive copse of evergreens or shrubbery, to declare by graceful type the rural pride of the place. First impressions count for a great deal—whether in our meeting with a woman or with a village. Slipshoddiness is bad economy in towns as in people. Every season there is a whirl of citizens, tired of city heats and costs, traversing the country in half hope of being wooed to some summer home, where the trees and the order invite tranquillity and promise enjoyment. A captivating air about a village station will count for very much in the decision."

16. Among the minor aims of Rural Improvement Associations, are the providing of rustic seats under the shades for the comfort of pedestrians, pleasantly suggesting neighborly kindness and courtesy; setting up watering troughs for horses at convenient points where from adjacent hillsides never failing springs invite and facilitate this improvement; furnishing plans for rural architecture, and for gates and fences, or securing hedge-rows in room of fences, or, better still, in many villages combining to remove all fences and visibly dividing lines, so that the private grounds seem to unite with the way-side in one large lawn; the suggestion of the neutral tints for dwellings and outhouses in place of the glaring white hitherto so common; arrest of stray cattle, for strolling cattle usually are and always ought to be outlawed; preventing nuisances, one of these

is the tearing up the turf fronting a dwelling house by inconsiderate road-menders. There is ample room for the needful work of the scraper and the hoe without making unsightly cuts and gutters in front of residences. Painting advertisements on the rocks by the myriad nostrum makers is a nuisance that should be prohibited by law. The same may be said of the encroachments made upon the highway every time the stone-wall or fence boundary is rebuilt. The whole town should show an interest in preventing such curtailment of its roadways. A Rural Improvement Association can develop a public sentiment which will of itself correct these evils without occasioning any neighborhood strifes or alienations. In this matter the interest of one is the interest of all. The motto of the Swiss Confederacy, "One for all and all for one," is the true motto for the several districts and for all the people of a town. Hence the term *Rural* is preferable to that of *Village Improvement*, for not the village only but all parts of a town should be included in the plans and benefits of this movement.

17. An important work of rural improvement in many towns would be the betterment of the surroundings of their factories. Too frequently these grounds are disfigured with rubbish and made unsightly by neglect. Keep a man in a pig-sty and he would become swinish in his habits, but reverse the conditions and you reverse the results. The influence of flowers, shrubbery, or neat and cultivated grounds upon operatives in refining their taste and promoting their happiness and content is too often ignored. There is, however, a goodly number of our manufacturers who show their interest in their hands by making their factory buildings and tenement houses inviting, comfortable and healthful, and adorning the surrounding grounds. A description of the two model manufacturing villages of America and so far as I can judge, of the world, will show the desirableness and results of better provisions for the taste and comfort of operatives. I do not assume that all factories can fully adopt the standard of these establishments, which are in many particulars exceptional in their opportunities. There are serious embarrassments in large and crowded manufacturing towns, especially where the factories are controlled by non-resident owners, more anxious for dividends

than for the comfort and improvement of their workmen. The liberal policy of the Willimantic Linen Company, to give one of many similar examples, shows how these difficulties may be surmounted by wise provisions for the improvement and education of the hands.

One of these "models" is the silk factory of the Cheney Brothers in South Manchester, Conn., by far the largest and most successful factory of the kind in the world, making over 25,000 yards of ribbons and broad silks a day. This business started here by the Cheney family in 1836, has steadily grown in extent and prosperity to the present time. The factory village covers about eight hundred acres of land and includes some two hundred houses. A fine lawn laid out with winding concrete walks and adorned with shrubs and flowers fronts the mills, and usually each of the houses. No fence or visibly dividing line separates the front yards from the roads. The Cheneys have encouraged their hands to build and own their homesteads, and to this end furnish the land, and loan money for building at a low figure, with a "liquor reservation" in the interest of temperance and with the understanding that all houses shall be on a plan provided or approved by their architect and that all shall be neatly painted some neutral tint. Not a house in glaring white here offends the eye. The beautiful grounds of the Cheney mansions, of the operatives and of the factories all present the appearance of an extended park, and give a look of refinement, kindness, and good neighborhood to the whole village which is like a well-kept garden. No private yard is left in an untidy state. No debris or rubbish is seen around or near any dwelling. There is evidently a public sentiment in favor of neatness and order that pervades the entire community and allows no dirty nooks to be found. Creeping vines cover "the office" and some of the factory buildings and dwellings. No block houses are found here. The cottages stand apart and vary in style, giving an individuality to each place. A capacious aqueduct carries water to every house. This village seems like a community in the best sense of the term, with common interests, pursuits, and sympathies. The providing of a large and commodious lecture hall costing \$50,000, together with interesting and in-

structive lectures and entertainments and a free library and reading room, solely by the Cheney Brothers, shows their intelligent and liberal methods of promoting the well-being and content of their employés. The hands highly appreciate the liberality of their employers and feel a manifest interest in their work and a pride in the place. Hence strikes and alienation between capital and labor are here unknown.

The other model manufacturing village is that of the Fairbanks Company at St. Johnsbury, Vermont. There is the largest manufactory of scales in the world, employing in the factory and branch departments elsewhere, over one thousand men, and manufacturing over 60,000 scales annually, the sales now amounting to over \$2,000,000 a year. It has long been a marvel how such a concern could be made a permanent success for full fifty years in the northeast corner of Vermont, so far from tide-water, with expensive freightage, the items of coal and iron alone being yearly about 10,000 tons, with many other heavy supplies from the sea-board and the necessity of transporting thither, the manufactured products. Throughout New England of late the tendency of manufacturers has been from the interior to the seaside. They have often abandoned old sites and water privileges far inland and built near the great markets, where they must run by steam only. But in St. Johnsbury, notwithstanding these disadvantages, the business has steadily grown and become a success, which, in view of the difficulties overcome, is unparalleled in this country.

What is the explanation of this marvelous prosperity? On revisiting St. Johnsbury recently, the first impressions made seven years ago were confirmed. I inspected the works, talked freely with the hands as well as the owners and with the citizens of St. Johnsbury not connected with the factory. To observe the home-life of the operatives, I entered their houses and conversed with their families. These inquiries brought out facts and inferences suggestive alike to all employers and employed.

This village, where nature has been lavish of her gifts, shows the added charms of landscape art. The whole town is justly proud of their beautiful soldiers' monument, their

fine public building, and manifold rural adornments. This company maintains the highest reputation for integrity. Many names honored abroad are tarnished at home. Only the strictest honesty and fair dealing can stand the test of daily business intercourse with hundreds of hands for half a century. "They do everything on the square," was, in substance, the answer of many citizens and workmen to my inquiries on this point. The company has fairly earned and gained the confidence of their men and of this entire community, and a good name at home naturally follows them everywhere. The workmen say that they are never permitted to do any sham-work, even for the most distant market. To quote the pithy phrases of the men, "no shoddy here," "no veneering," "no puttying."

There is a superior class of workmen in this establishment. All are males. Their work is proof of skill. Their looks and conversation indicate intelligence. They are mostly Americans, and come from the surrounding towns. More than half of them are married, and settled here as permanent residents, interested in the schools and in all that relates to the prosperity of the place. Many of them own their houses, with spacious grounds for yard and garden, and often a barn for the poultry and cow. These houses are pleasing in their exterior, neatly furnished, and many of them supplied with pianos and tapestry or Brussels carpets. How different from the nomadic factory population, swarming from Canada and from other lands to densely crowded tenement houses, who never bind themselves to civilization by a home, much less by a house of their own! The tenement houses, also, are inviting and comfortable, and surrounded with unusually large grounds. The town is managed on temperance principles, and drunkenness, disorder and strife among the hands are almost unknown. Most of them are church-goers, many of them church members.

I examined the pay-roll and found the wages very liberal. The workmen seem well satisfied on that score. Wherever it is possible, the work is paid for by the piece. The work itself is largely done by machinery and that *sui generis*, invented here and for the special and peculiar results here reached. The men are encouraged to expedite their processes by new inventions and share largely in the benefits of all such improve-

ments. I conversed with one of the hands who invented a curious apparatus by which he marks a hundred register-bars with greater accuracy and in but little more time than he could formerly do one. He now finds working by the job especially profitable. Paying by the piece has worked well here. The men say it is fairer to pay for results than by hours. The worth of labor depends upon its products. This plan stimulates industry, promotes skill, and fosters inventiveness. It apportions rewards to the quantity and quality of work done. But more than all, this plan is recognized by the men as just and satisfactory. With the time left practically to their own choice, there is no eight-hour movement here. No "Labor League" or Union has ever existed—no strike ever been suggested. This would be a poor place for the Internationals to preach the gospel of idleness or agrarianism. Imagine one of these delegates just arrived at St. Johnsbury and beginning his arguments for a strike with Mr. —, whose house I visited. I fancy him replying somewhat as he did to my inquiry. "Why is it you never have any strikes here?" "Well, we have a good set of men to start with—temperate and moral. Then we are well paid. Wages have often been advanced. The owners take an interest in the men. They are liberal and public spirited, and are doing a great deal for the place, and we feel an interest in the success of the concern which has been the making of St. Johnsbury."

There has evidently been mutual sympathy and interest between employer and employed. The senior Governor Fairbanks used to say to the men, "You should always come to me as to a father." He maintained relations of kindness with them, visiting the sick, helping the needy, counseling the erring, encouraging their thrift, enjoining habits of economy. He taught them that it was their interest and duty to "lay up something every month," and that the best way to rise in the social scale was to unite economy with increasing wages. He himself both preached and practiced economy. He was a conspicuous example at once of strict economy and princely liberality. His benefactions were munificent, both at home and abroad. The fact that so many of the workmen are "fore-handed," besides owning their homesteads, is

due to his teaching and example. The worth and dignity of work he illustrated in theory and practice. The notion that labor was menial, or that the tools of trade or farm were badges of servility, he despised. His sons worked in the shop, and thoroughly learned the trade. The brothers of the Governor were in full sympathy with him, and the same spirit characterizes the sons and the surviving brother who now manage the concern. There is still the fullest and happiest conciliation between labor and capital. It is not strange that the workmen "hold on." Their permanency is a striking fact. Many have been here from twenty to over forty years.

Years ago the men were aided in forming and sustaining a Lyceum, and liberal prizes were offered for the best essays read. Recently, Horace Fairbanks has founded a library, and opened a large reading-room free to all. The Athenæum containing the library, reading-room, and also a spacious lecture-hall, is an elegant structure, ninety-five by forty feet, two stories high. The books, now numbering nearly ten thousand volumes, are choice and costly; two hundred and thirty volumes have been drawn in a single day. In the reading-room, besides a good supply of American periodicals, daily, weekly and quarterly, I noticed on the tables many European journals, including four English quarterlies, six London weeklies, and ten monthlies. The library and reading-room are open every week-day and evening, except Wednesday evening, when all are invited to attend the weekly "lecture," which is held at the same hour in all the churches. Having visited nearly every town of Massachusetts and Connecticut, and traveled widely in this country, I have nowhere found in a village of this size an art gallery so costly and so well supplied with painting and statuary, a reading-room so inviting, and a library so choice and excellent as this.

Thaddeus Fairbanks, one of the three founders of the scale factory, has liberally endowed a large and flourishing academy, which promises to become the "Williston Seminary" for north-eastern Vermont.

These various provisions for the improvement, happiness, and prosperity of this people, coupled with liberality and fairness in daily business intercourse, explain the absence of dis-

content and the uniform sympathy, good feeling and harmony which prevail.

How to harmonize labor and capital is now one of the great questions of the age. Their alienation has recently caused idleness, distress and crime on one side, and lock-outs, derangement of business and enormous losses on the other. The many millions lately lost by mistakes on this question furnish only a new version of the old story of antagonisms between those who should be partners. I have nowhere seen a better practical solution of the Labor Question than in South Manchester and St. Johnsbury.

18. As plans for Rural Improvement Associations are often called for, the following, adopted in Clinton, Conn., is given.

This association, though organized less than two years since, has already accomplished important results. A circular addressed to the citizens of that town by this association, says:

“At our last town meeting, a liberal sum was unanimously appropriated for improving our road-sides. The coöperation of every citizen is needed to carry on this good work. While no sudden changes are expected, and while the full results desired will require time, still, with the united efforts of our people, Clinton can soon be made the most beautiful town on the Shore Line, offering with the rare privileges opened in the Morgan School, unequaled advantages and attractions to invite wealthy and desirable residents who are seeking a country home.”

BY-LAWS AND REGULATIONS OF THE CLINTON RURAL IMPROVEMENT ASSOCIATION.

1. This Association shall be called “The Rural Improvement Association of Clinton.”

2. The object of this Association shall be to cultivate public spirit, quicken the social and intellectual life of the people, promote good fellowship, and secure public health by better hygienic conditions in our homes and surroundings, improve our streets, roads, public grounds, side-walks, establish good grass borders in the streets and public squares, provide drinking troughs, break out paths through the snow, light the

streets, remove nuisances, and in general to build up and beautify the whole town, and thus enhance the value of its real estate and render Clinton a still more inviting place of residence.

3. The officers of this Association shall consist of a President, a Vice-President, a Treasurer, a Secretary, and an Executive Committee of fifteen, six of whom shall be ladies.

4. It shall be the duty of the Executive Committee to make all contracts, employ all laborers, expend all moneys, and superintend all improvements made by the Association. They shall hold meetings monthly from April to October in each year, and as much oftener as they may deem expedient.

5. Every person who shall plant three trees by the road-side, under the direction of the Executive Committee, or pay three dollars in one year or one dollar annually, and obligate himself or herself to pay the same annually for three years, shall be a member of this Association.

6. The payment of ten dollars annually for three years, or of twenty-five dollars in one sum, shall constitute one a life member of this Association.

7. Five members of the Executive Committee present at any meeting shall constitute a quorum.

8. No debt shall be contracted by the Executive Committee beyond the amount of available means within their control, and no member of the Association shall be liable for any debt of the Association, beyond the amount of his or her subscription.

9. The Executive Committee shall call an annual meeting, giving due notice of the same, for the election of officers of this Association, and at said meeting shall make a detailed report of all moneys received and expended during the year, the number of trees planted under their direction, and the number planted by individuals, length of sidewalks made or repaired, and the doings of the Committee in general.

10. This constitution may be amended at any annual meeting by a two-thirds vote of the members present and voting.

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