

THE PLAINS
OF
LONG ISLAND.

BY
WINSLOW C. WATSON.

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THE PLAINS OF LONG ISLAND.

[From the Transactions of the New York State Agricultural Society, 1859.]

The subject of the waste lands of Long Island has, for several years, engaged my earnest attention. Curiosity first induced me to visit the region, that I might examine with my own eyes, a territory which seemed to be consigned by public sentiment to desolation, and to be regarded as valueless for the purposes of husbandry. I was unable to perceive any sufficient reason why even a barren desert of sands, so contiguous to the best market on the continent, could not be profitably cultivated. I was naturally forced to contrast such an aspect in our own country, with the efforts of Flemish industry, which could wrest from the dominion of the ocean a naked sand beach, and convert it into the garden of Europe. The parallel was not grateful to my national pride. More than one careful examination of this district, in reference to its geological structure, agricultural capabilities, and local advantages, have confirmed the original impression, that no natural impediments exist, to the successful culture of these plains. A strange and inscrutable popular delusion seems to prevail very generally on this subject. Hereditary opinions seem to have taken singular possession of the public mind. These opinions have been probably adopted and been cherished without reflection, and without examination of facts, which are everywhere disclosed on the island. Historians of Long Island have assumed the same conclusions, and in asserting and diffusing them, have exerted a most injurious influence upon private interests and general progress. So decided have been these views, that until recent intelligent investigation had changed the policy, portions of these lands were deemed so utterly worthless, as not to be considered worthy of being placed on the grand list.

I might distrust the propriety of a stranger meddling with this local question, were it not that my views have been so fully sustained and fortified by the decided opinions of General Dix, expressed in his recent admirable address before the State Society. I have no possible interest in these lands, and can therefore speak with more freedom and impartiality. The facts and results upon which are based my convictions, I have collected with great care and vigilance, as well by personal investigations as from conversations with intelligent gentlemen, who are familiar with the subject. Among the numerous persons to whom I am under obligations, I may particularly refer to the Rev. E. M. Johnson, of Brooklyn, whose clear memory, in a green and vigorous age, enables him to trace the progress of

the island for nearly half a century ; to Mr. Harold, the intelligent secretary of the Queens County Society, and to Mr. Bridger, of North Islip, who combines with careful observation much practical experience in the cultivation of the plains. I should violate my sense of justice, were I not to refer especially to the services and efforts of Doct. Edgar F. Peck, of Brooklyn. From this gentleman, who for fifteen years has strenuously combatted the deepest prejudices and the most unyielding opposition, in his labors for the development of these lands, I have received the most important aid and information. I do not hesitate, in this connection, to adopt the words of an eminent gentleman, who remarked to me : " If these plain lands are reclaimed and brought into successful culture, the result must be attributed to the zeal and intelligence of Dr. Peck, more than to any other cause." The convictions of Dr. Peck, as to the qualities of these lands, were derived from personal investigation, commenced in 1841, and subsequent results have fully confirmed the views then formed.

Long Island combines, perhaps, more peculiar and decided advantages for residence, than any other district of our widely-extended territory. The Gulf stream, approaching near to its coast, imparts to the climate a delightful temperature, that exempts it from the rigors incident to a northern latitude ; surrounded by the ocean, it rarely suffers from intense heat or droughts ; it is almost under the shadow of the towers of New York, and enjoys every facility of access to its market. Under such circumstances, the Island should exhibit the aspect of one prolonged cultivated farm, and orchard, and garden, smiling throughout its whole area, in that exuberance of beauty and culture, which so eminently mark some sections of its territory. These great and marked advantages early attracted the attention of the emigrant, and hence, for more than two centuries, Long Island has been regarded, not only by the partiality of its own people, but by the public verdict and the voice of the traveler and historian, as " The garden of America." This reputation, however, attaches to the island from the aspect of a narrow margin along the north and south shore, and small districts upon the eastern and western extremities. A very large proportion of the interior has been abandoned to neglect, and is at this day in a more desolate state, than it presented in its primitive condition, for the stately native forest has given place to the scrubby oak and to coarse and worthless vegetation.

I can the most readily explain and illustrate my views, by presenting a rapid sketch of the physical arrangement of the island, its natural capacities, and its existing condition. The formation of Long Island, in its physical and geological arrangements, is remarkable, and without any parallel. It is about one hundred miles in length, from east to west, with a general width ranging from eight to twelve miles. It is divided into nearly equal sections, by an elevated range of land, which traverses it longitudinally. This ridge subsides into the plain at the east, and in the vicinity of Brooklyn is broken into abrupt heights. Long Island presents no analogy to any adjacent territory, but in its natural arrangement is

peculiar and distinct. It is proper I should state, that my explorations were chiefly limited to the slope extending from the ridge to the ocean on the south, and to the western portion of the island. This range embraces that section of the territory to which my investigations were particularly directed, and afforded me, in the cultivated districts, the data I required for contrasting the soil of the plains with the fertile farms.

GEOLOGY.—The geological structure of Long Island discloses a remarkable similarity throughout its whole extent, which is rarely if ever found in an equal area of territory. The ingredients of the soil, in every section that I have been able to examine, and the same fact, I was assured on the most reliable authority, exists in every part of the island, exhibits the most singular uniformity. In these respects, and in most of its physical features, Long Island presents a peculiar arrangement that has no analogy to any other district within my knowledge, and indeed distinguishes it from all others. That it is alluvial, and of recent formation, there exists every proof. In my personal explorations, I saw no rocks in site, but perceive that geological authors refer to their appearance near Hurlgate and at Hallett's Cove. These doubtless reveal the croppings-out of the rock of the adjacent mainland. Huge boulders are scattered copiously in the soil at Brooklyn, and in other localities, but upon the plains scarcely a stone occurs over the size of a large pebble. The basis of the entire island appears to be a formation of large pebbles, worn and rounded by attrition. On this foundation reposes a substratum of small pebbles mingled with the superficial soil. Above this substratum occurs the soil of the island, ranging in depth from one foot to three feet, and it is a singular circumstance, which marks the anomalous arrangement of the whole island, that unlike every other territory, the soil is the thinnest and least fertile in depressions, than upon the elevated parts of the surface. The elements of this surface soil are as nearly as possible identical in every part of the island, but varying to some extent in its combinations. In some districts, where clay predominates, it may be termed a clayey-loam; in others, silex is the most conspicuous ingredient, when the soil becomes a sandy-loam. In some limited sections of the island, localities of pure sand are found, but through the center of the island, and particularly on the plains, I saw no appearance of a soil of that character. The greatest prevalence of sand, and the lightest soil I examined, was on the north side of the ridge, in the town of Smithtown; and the next, most assimilating to this, was in the Happaugh valley, in the same town. Both of these localities are upon farms which have been cultivated for generations.

The submergence of the island at some period is demonstrated by numerous circumstances. The gravel formation I have just alluded to, is a sufficient proof. Mr. Thompson, the historian, speaks of fossil remains being exhumed in digging wells, and the marine shell, discovered in the beds of the "Dry rivers," can be traced to no other cause. Possibly the foundations of the island may have been upheaved by some natural convulsion, but I have not scope to pursue this enquiry, and can only assume

the obvious fact, that the soil of the island is formed by a detritus, either raised from the bed of the sea, or cast upon the pebbly beach by the waters of the Hudson and the streams of Connecticut. The process by which the island may have been formed by this accretion, can at this day be constantly traced upon the sand reefs, which Providence has caused to be thrown up along the southern coast of the island, forming a vast natural breakwater, to which the low shore of the island owes its only protection from the surges of the ocean. The sea-sands first accumulate; upon these spring the coarse aquatic grasses, and these, in the memory of man, are succeeded by a nutritious vegetation. Such may have been the operations of nature, by which the uniform soil I have described was gradually spread like a mantle over the surface of the island. I was informed of a singular geological formation, which I was not able, however, to examine. This is a horizontal stratum of soil, about half a mile wide, ranging in a course northeast and southwest, through parts of the towns of Oyster Bay and Hempstead, and from its peculiar color, known as the "Red ground." It is enclosed on the west by a black earth, and on the east by the prevailing yellow soil. This red stratum is said to be remarkably fertile.

It is not necessary to invoke the aid of science, to determine the singular identity of the elements of the soil throughout the whole island. I collected specimens from the cultivated farms near Brooklyn, Smithtown, and on the south shore, and from the Hempstead plains and the Bush plains in various places. These specimens are deposited at the Society's rooms, and any person, by inspection, will readily determine their remarkable similarity.

CLIMATE.—The climate of Long Island is distinguished for its mildness and salubrity. These qualities become more apparent as the surface is opened by improvement to the circulation of air and the influence of the sun. Mr. Thompson states that the thermometer rarely falls to zero, or rises to ninety degrees of Fahrenheit. Its insular form, bathes the island perpetually in a marine atmosphere, which imparts a genial moisture, while, as I have remarked, the sea breezes mitigate the rigors of winter, and relieve the intense heat of summer. The influence of the Gulf stream I have already referred to, and I may add that this influence is augmented by the marked prevalence of southerly winds. The frost penetrates the earth only in a slight degree, and the surface is seldom covered by snow more than a few weeks in the season.

I found it to be the general impression with intelligent men, that the farmers of Long Island enjoy, on account of the mild temperature of the climate, an average of about forty working days in the year, more than those above the Highlands. This is a fact of great significance, in estimating the value of these lands for agricultural purposes.

It seems to be admitted that the island rarely suffers from drouth. The sea air, always charged with moisture, constantly refreshes vegetation. The Rev. Mr. Johnson spoke of the extraordinary dews which characterize the island, and which, he remarked, are not unfrequently so heavy

that the moisture they precipitate falls in drops from the eaves of the buildings. The celebrated Cobbett adverts to this exemption of the island from the prevalence of drouths, and observes: "I can truly say, as to the article of water, I was never situated to please me so well in my life before. The rains come in about once in fifteen days. They come in abundance about twenty-four hours; then all is fair and all is dry again immediately."

In the last sentence, he alludes to a singular feature of the Long Island soil. The inhabitants are seldom afflicted by mud. The thorough system of drainage which nature has provided in the under-stratum of gravel, carries off the surface water with great rapidity, and leaves the earth dry and pleasant.

WATER.—The water arrangement on Long Island, is marked by the same dissimilarity to other districts which is so conspicuous in every trait of its physical formation. Although the ridge is the natural water shed of the Island, few streams flow on the south side, directly from it. The streams generally start four or five miles from the ocean, sometimes bursting from a single fountain in pure and bright water, and at others gathering in almost stagnant pools. They uniformly, I believe, flow over beds of clear white pebbles, and never have bottoms of slimy, deep mud, which is usually so prevalent in flat countries. Most of the farms are supplied by wells, which are often of great depth. The water on the Island is sweet and sparkling, and commonly soft. On Fire Island, and other islands off the coast, of a sandy formation, wells dug in the sand at the margin of the sea, afford agreeable fresh water, and the cattle depasturing on these islands supply themselves with drink by pawing holes in the sand.

Stock are frequently furnished with water by excavations on the surface known in the region as "watering holes." They are a few feet deep, and nature appears to sometimes provide them, but they are more frequently contracted by puddling the soil. It is a singular fact and perfectly illustrative of the purity both of the water and atmosphere, that the water stands in these excavations throughout the summer, retaining a pure and limpid condition without taint or putrescence. A few swamps or marks appear on the plains, but they are limited in size and generally occur at the head springs of the streams.

I have thus presented a hasty outline of the physical features and characteristics which distinguish the entire Island. This sketch seemed to be necessary for a just and intelligent understanding of the qualities and peculiarities of those sections which I propose particularly to discuss.

THE HEMPSTEAD PLAIN.—We enter upon this tract in a progress from Brooklyn, soon after leaving the highly cultivated region in the vicinity of that city. These plains reveal one of the most remarkable exhibitions of nature in the Eastern States. Formerly they embraced in an open area, about 17,000 acres. The quantity is now reduced to about 12,000 acres. Unoccupied, uncultivated, without enclosures, they present to the eye a wide expanse, clothed in rich and beautiful verdure. This vast surface is almost perfectly level, interrupted by slight undulations, and stretching

from the ridge towards the ocean, by a declination so gradual as to be imperceptible. Scarcely a bush or tree interrupts the view. Nature formed it a broad, upland meadow. Its appearance recalls at once the memory of a Western prairie, and the herds of cattle ranging over it, which fancy may readily conceive to be the Buffalo, do not lessen the similitude. These plains are, however, destitute of one embellishment, which communicates to the prairie such exceeding loveliness. The brilliant flowers which at the west spread a gorgeous garniture over the earth and adds so much to the beauty of the scene, is wanting here. This circumstance is probably owing to the severe and continuous cropping for ages of the Hempstead Plains. These plains existed at the first settlement of the Island. They attracted the attention and excited the admiration of the emigrant. Travelers visited them at an early day, and referred to them as among the wonders revealed in the new world. The prairies of the West were then unknown to civilized man. By what agency these plains were produced, with their peculiar features, whether by man or accident, or the caprices of nature, was then, as at this day, a problem that cannot satisfactorily be determined. Some impute them to peculiarities of soil; others to different natural causes, and another class, with a more practical view, refer their existence to fires, continued for ages by the Aborigines, with the purpose of securing early grazing for the deer which thronged the Island. When the causes which created the prairies of Illinois, are revealed, we may look for a solution of this question. All the knowledge we can now attain is, that the grass plain exists—a phenomenon of nature and a miracle of beauty.

These plains are mantled by a rich and heavy growth of grass, which affords pasturage for large numbers of cattle. They were appropriated, and with great convenience and utility, by the settlers at a remote period, for this purpose, and the practice is still continued. They also afforded a valuable resort for procuring hay. Denton, in his account of New York, thus describes them in 1670: "Toward the middle of Long Island lyeth a plain, sixteen miles long and four broad, upon which plain grows very fine grass, that makes excellent good hay, and is very good pasture for sheep and other cattle; where you shall find neither stick nor stone to hinder the horses' heels or endanger them in their races."

Mr. Harold, in a valuable paper he kindly prepared for my use, states that "grass formerly grew on these plains five and six feet high, and is now occasionally found on neglected headlands higher than a four rail fence. The earliest grass (Secretary grass), a short and very fine grass, is much relished by sheep and cattle." The nutritious properties of the herbage growing upon the plains is apparent from the appearance and condition of the cattle which roam upon them.

The turf which covers these plains, by its toughness and tenacity, assimilates to the sward of the western prairies. Two yokes of cattle, or a team of three horses are required to break it up. An immense quantity of vegetable matter, convertible into rich manure must be contained in a turf possessing a volume like this.

The geological features of the Hempstead plains disclose a remarkable analogy to those of every part of the Island that I was able to explore. Mr. Harold thus describes the soil: "The level portions of the plain has generally a good soil, the top being from six to eighteen inches of vegetable mould, with a subsoil of loam varying from one to four feet in depth, underlaid in most places by a coarse gravel." The superficial soil is combined with a black humus, which must impart to it great fertility. The theory of some intelligent persons is, that this humus may be the deposit from the subsidence of a lake which they suppose covered these plains. I conjecture, however, that it is formed by the decomposition which the massive turf must be constantly undergoing. That streams of water have flowed along these plains is very apparent, but whether they were rivulets of fresh water such as now exist, or inlets of the sea, which at a remote period existed, cannot now be decided. The "dry rivers," as they are called, are peculiar features which prevail extensively on the Island, and are particularly distinct on the open plains. In Hempstead they are commonly used for the track of roads. They exhibit the meandering course and high banks common to all streams, and have hard bottoms and a thin soil. Common marine shells abound in these "dry rivers." Another striking peculiarity of these plains is the circumstance of streams gushing out on the surface in a full volume from their fountains. These streams are of considerable size, and afford water sufficiently soft for domestic purposes. Nearly all the mill-streams of the district are formed by these rivulets. Although the plains are not affected generally by dampness, the earth in the vicinity of these head springs is so saturated, without however exhibiting any appearance of a springy or swampy character, that water rapidly collects and remains in excavations dug on the surface. The territory known as the Hempstead plains formerly included a much more extended area than it now embraces. It was owned in common by the original town of Hempstead, and spread nearly from the base of the ridge to the village of Hempstead, and from Brushville, now Queens, to the Bush plains on the east. This town was divided in 1784 by a line running near the track of the Long Island railroad, into North Hempstead and what is now Hempstead. The policy of the two towns in regard to their common lands has been widely different. While Hempstead, by its popular vote, has persistently refused to sell that part of the common which lies within its boundaries; North Hempstead at an early day disposed of the portion which belonged to that town. Although such sales were made at very inadequate prices, the benefit to the town has been incalculable, by the increase of its cultivated area and the addition to its positive wealth and resources. It is not my province nor purpose to animadvert upon the course of the town of Hempstead, in respect to this policy, but I may remark, that an impressive practical commentary is presented on the subject in the aspect of fine and productive farms on the North Hempstead side of the plain, contrasted with the wild and uncultivated waste, only occupied by scattered herds of cattle, on the Hempstead common. The sale of this vast domain, at a just valuation, might create

a public fund, which, appropriately secured, would relieve the town from an immense burden in its taxation ; or its proceeds, invested for educational or beneficent objects, would diffuse unmeasured blessings among the people.

Mr. Johnson remarked to me that he recollected when the whole district from Brushville to the present Hicksville, a distance of about twelve miles, was an open common, but which now embraces some of the best grass farms in Queens county. Occasionally the plains are penetrated from the sides by farms which show long cultivation, and date their occupation, by some squatter or pre-emptive rights, to a period anterior to the Revolution. These are generally valuable tracts. The original extent of the common lands has also been much reduced by modern encroachments of those who occupy contiguous lands. Farms which formerly contained fifty and sixty acres have grown by this process until now many of them contain from one to two hundred acres.

It will be recollected that Cobbett occupied a farm on the north borders of Hempstead plains. The first year, he states, he had no manure except four hundred bushels he swept together, on the land, by means of a broom. He applied to the land sixty bushels of this quality of manure to the acre, for a crop of ruta бага, and realized that season, a harvest of six hundred and forty bushels of the ruta бага to the acre. After referring to these results, to the caution he received against deep plowing, and giving a description of the soil, he uses this forcible language : " and yet people are flocking to the western countries in pursuit of rich land, while thousands of acres of such land as I occupy are lying waste on Long Island, within three hours' drive of the all-consuming and incessantly increasing city of New York."

THE BUSH PLAINS.—Proceeding east from the Hempstead plains, we enter near Farmingdale another territory, and as strange as is the aspect of the Hempstead prairie, this new scene is still more novel and impressive. This is the woodland or Bush plains of the island, and more familiarly designated the " Long Island barrens." The ground is chiefly occupied for a number of miles by a thick growth of low shrubby bushes, then succeeds a tract covered by small oaks, pine, and a heavy burthen of what is here called scrub oaks, but it is not the tree generally known by that name. This shrub is laden by a copious crop of acorns, which formerly, it is said, attracted the bear as well as the deer to these wilds. The entire surface, through these plains, is clothed in a heavy mantle of rank and coarse vegetation. The primitive forests, which consisted mainly of oaks, chestnuts and pines, have long since disappeared, although their former presence is indicated here and there by decaying stumps. I was informed that these lands, when they escape the ravages of fire, yield from the timber that now occupies them, a product of fire-wood once in fifteen or twenty years.

The strangeness and wild aspect of the scenery is beautiful and impressive, and the mind can scarcely comprehend the fact that such utter stillness and seclusion and *such* an exhibition of nature, in more than its primeval rudeness, should occur within three hours' ride of the great metropo-

lis. Almost as far as the vision reaches, the eye rests only upon a sea of waving bushes. They are not sparse and open, as is the case usually on feeble sandy soils, but the growth is heavy, compact, and generally uniform. Occasionally, patches of trees of a larger growth appear, but there is mainly a singular uniformity of shrubs and bushes, interlaced with vines and matted by a coarse herbage.

This rude wilderness extends from Farmingdale to Riverhead, a distance of about forty-three miles, and from the base of the ridge on the north to a narrow belt of beautiful and richly cultivated country which borders the sea coast. The tract is from six to eight miles wide, from north to south. When the Long Island railroad was constructed, about twenty years ago, it penetrated an unbroken wilderness almost the entire length from Farmingdale to Riverhead, in which appeared no dwelling, no culture, and no evidences of civilization except an occasional path which traversed the island from north to south, connecting the two opposite shores. The surface of this immense plain is so nearly level, with only trifling undulations, that the eye can detect no declension. From the ridge to the ocean, there is a gradual but imperceptible descent. The small streams, which generally start four or five miles from the sea coast, in their early course crawl sluggishly through the rank herbage which springs from their ooze, but in their progress they acquire more activity, until as they approach the ocean they become bright and sparkling brooks, with a current sufficient to propel machinery. These rivulets afford the choicest trout, and the plains furnish excellent sport in deer, smaller animals and fowl. Mr. Harold remarks in his memoranda, that the prairie hen (*Tetrao eupido*,) was formerly abundant, especially in the bushy plains, although believed to be nearly extinct; during the last year they have again appeared. The Hempstead plains are animate with the presence of numerous birds. Large flocks of the bunting (*Emberiza savanna*,) are found during the whole summer. The White Snow bird (*Plectophanes nivalis*,) fatten upon the ripened seeds in autumn. He mentions several varieties of the plover and duck, and I saw the lark (*Alauda alpestris*,) early in December, soaring with joyous wing from the open plains.

Within a few years a new epoch seems to have opened upon the scene, and the footprints of progress have been impressed on these lands. The plains are now not entirely without improvement, as numerous sites have been subdued and occupied. Productive farms and highly cultivated gardens and orchards, are springing into existence and beam amid these wilds like oasis in the desert. Some of these improvements already compare favorably in culture and productiveness with the most fertile tracts on the island. Men who unite practical knowledge to wealth and science have entered on these wastes, and are exhibiting demonstrative evidence of the capabilities of this soil for high and remunerative culture.

I have, in the preceding pages, attempted to present a rapid view of the existing aspect and condition of the territory which has so long, and with so much success, been denounced as "the barrens of Long Island." The

question naturally arises, why so extraordinary a state of things exist, and whether there is any fiat of nature that irrevocably condemns this vast tract to perpetual desolation and uselessness. Everything associated with the physical qualities of this beautiful island seems peculiar and striking, and unlike the characteristics of any other region. The existence of this uncultivated wilderness, is not the least singular and impressive of these phenomena. It is perhaps unnecessary to attempt an explanation of this strange circumstance. I may, however, offer one brief suggestion. At the first occupation of the island the settlers naturally clustered about the harbors and bays on the coast. Public roads, in consequence, were constructed along or near the north and south shore. None penetrated this tract. This was inaccessible while other sections of the island presented greater attractions and were easily accessible. The inhabitants became attached to the delightful regions they cultivated. In the meanwhile fires desolated the plains, because they were not protected, as it appears the occupied portions of the island were, by statutory regulations, from this danger. They were disregarded and neglected. Under these circumstances the opinion was gradually formed, that they were not adapted for cultivation. This idea was adopted without investigation, was strengthened by years, descended from father to son, until it has become incorporated in the popular mind as an established and incontrovertible fact.

It is my design to briefly examine the accuracy and justice of these opinions and to exhibit a series of facts which will tend, I think, to illustrate the subject.

THE SOIL.—No term applied to land was ever more erroneously used than the designation of the plains of Long Island as "Sand barrens." Neither term is either true or appropriate. A traveler passing along the line of the Long Island railroad will be deceived as to the character of the soil. The under stratum of coarse gravel has necessarily been cast up in the construction of the road, and this the casual observer will naturally suppose to be the soil of the country. I examined, with much care, various localities on the plains, and found everywhere a remarkable identity in the structure and qualities of the earth and a great similarity to that which occurs at Flatbush and Brooklyn. There prevails the same superficial loam, from one to three feet deep, then succeeds small gravel mingled with the loam, which rests upon the uniform foundation of coarse and rounded gravel. Clay is everywhere, on the plains, the predominant ingredient of the soil. I collected specimens in various spots, and for convenience moulded them into balls. When these had become hard, I could not separate the particles with my fingers, but was obliged to use a hammer for the purpose. The balls had acquired the consistency of a brick. I was shown by Doctor Peck, houses at North Islip, which had been constructed of sun dried brick, made from the soil in the immediate vicinity. The holes from which the earth had been taken for the purposes were pointed out to me. The excavations were on the loam or surface soil.

Mr. Harold informed me that walls were erected from the clayey soil of

Hempstead plains with lime made from oyster shells. Sands possess none of these adhesive qualities, and no intelligent person, after the slightest inspection would mistake the soil of the plains for sand, or would hesitate, even without the light of science, to pronounce it a clayey loam. It is nothing else, and the many square miles of plains which I explored possess this special quality, and exhibited, uniformly, a great preponderance of clay.

The soil of the Bush plains is yellow, tinged a little with red. That of Hempstead plains is darker, owing in some degree to the humus it contains, but essentially, I think, to the influence of air and heat, by which, on account of the absence of trees and bushes, it is more affected than the bush plains. I do not, of course, mean to assert, that there exists through the entire extent of this vast area, a perfect uniformity in the depth and qualities of the soil. No greater diversity, however, occurs than prevails in every equal extent of territory. There is exhibited on the plains, an occasional cropping out of the gravel stratum, and in places the loam has been washed off. Upon other level tracts, ravines contain the richest earth, but here, in conformity to the uniform dissimilitude to other districts, which prevails, the greatest thinness and barrenness of soil occurs in the depressions, while the best and heaviest land is found on the elevated parts of the plain. The loam presents a thicker stratum near the ridge, and it gradually loses this aspect as the plains approach the ocean. Ravines running north and south traverse, at intervals, the plains, and these, uniformly, have the lightest and thinnest soil.

In the fall of 1859, a long tract of land had been turned up in the construction of a road near North Islip station. I examined it with care and interest, and I never, any where, have seen a more beautiful development of soil. Mr. Bridger assured me, that from ample experiments, he considered the second stratum, or the mixture of loam and gravel I have described, quite as productive as the superficial loam, and Mr. Harold informed me that they considered it at Hempstead, preferable for corn in a cold season. Dr. Peck and Mr. Johnson both stated that they esteemed this soil the most congenial to the peach tree. Wherever this stratum had been thrown up and exposed to the air and sun, I saw white clover growing upon it in perfect luxuriance. The fertility of this substratum may be imputed, I conjecture, to the fertilizing soils and other ingredients which it receives from the superficial soil.

I cannot be mistaken, I think, in these views of the qualities and ingredients of this soil. I have not been able to subject it to analysis, but I am informed that specimens of it were submitted to the late distinguished Prof. Norton, who pronounced the soil deficient in no element of fertility, except a sufficient presence of lime and alkali. I learn, also, that Prof. Renwick, before the Institute, concurred in these views. Such is the judgment and voice of science on the subject. If the soil, by its elements, is adapted to cultivation, what possible other great and tangible impediments exist to exclude this immense territory from the labors and interests

of Agriculture? I will now proceed to present my own conclusions on this subject, in connection with notices of the objections which are urged against the culture of these plains.

Is the soil adapted to cultivation? The production, upon the plain lands, every fifteen or twenty years of a heavy burthen of firewood, and which sustains at the same time a massive growth of coarse herbage and under bushes, so thick as in places to be almost as impenetrable as a Mexican chapparal, would seem to conclusively attest the presence of a strong, as well as quick soil. Every opening on the plains reveals a vigorous growth of clover and other nutritious grasses, which spring spontaneously.

The demonstration afforded by practical results furnish the strongest evidence on the subject, and I will present a few instances in the actual cultivation of these lands, from the mass of facts which I have collected to illustrate the capacity of this soil for tillage. The soil of Flatbush and the range of farms upon the south shore, which have been cultivated for two centuries, and during that period have been esteemed the garden of the State, and which are still distinguished for the exuberance and beauty of their crops, exhibit the same elements of soil as the plains, and have the same appearance, modified by culture and the application of manures. If the land in these districts is susceptible of this high culture, and are made equally productive with the choicest land in the State, we are justified in the conclusion that soil in other sections of the Island, possessing the same inherent qualities, may, by similar culture, be made alike valuable for agricultural purposes. If, as I confidently assume the fact to be, the soil of Hempstead and the Woodland plains has the same normal properties as that of the other localities referred to, there can exist no reason why they cannot receive the same productive improvement.

We are not left, however, to mere conjecture and speculation on this question. Practical results accumulate abundant testimony to the capabilities of these lands for high and remunerative culture. The long succession of farms which have been carved from the plains in North Hempstead at a comparatively recent period reveal a high state of improvement. The lands near Hempstead village, which have been absorbed by the process of encroachment I have mentioned, are now, I am assured, in as great fertility as the portions of the same farms which for generations have been cultivated. Mr. Harold informs me that records exist of harvests of winter wheat on plain lands of thirty-four bushels to the acre, weighing sixty-two pounds to the bushel, and from sixty to eighty bushels of shelled corn to the acre. I saw myself in December, 1859, specimens of spring wheat raised by Mr. Sammis on Hempstead plains, with an interval of only three and a half months between sowing and harvesting, which yielded twenty-three bushels to the acre. Mr. John A. Bedell received a premium from the Queens County Society, and in competition with some of the choicest farms on Long Island, for a crop of oats from one acre, two roods and eighteen rods, measuring seventy-eight and one-fourth bushels and weighing 36 pounds per bushel. This crop was also raised on plain land in the same year. It yielded

a net profit of \$26.62. No extraordinary expenditure produced this result. The farm of the late Mr. Charles Wilson, at Deerpark upon the Bush plains, thirty-seven miles from Brooklyn, furnishes the strongest evidence of the capacity of these plains for agricultural purposes. My notes of a visit to this farm in the summer of 1857, contain the following comments: "Mr. Wilson commenced his operations in the heart of this waste about five years ago, and has at present about eighty acres under cultivation. His place is in the midst of and is enveloped by the woodland "barrens." His crops are now as beautiful and luxuriant as bask beneath any sun. He has an extensive grapery, flourishing young fruit trees, and a delightful garden. He pointed out to me a large and flourishing corn crop, standing upon ground which last February was covered by a dense mass of scrub oaks and rank herbage. These were cut off, the land plowed, the roots picked up and converted into a fence, which separates the field from the adjoining waste, now not more rude and desolate than was the flourishing field six months ago. The original price of this entire property was \$5.00 per acre; the expense of preparing this particular lot for tillage was about \$15.00 per acre, and I saw many acres which will yield a profit beyond all disbursement, that will make the land worth to him, as an investment, at least \$200 per acre. The expense incurred, in clearing this corn-field, by Mr. Wilson was much heavier than is necessary, where economy is an object. This gentleman assured me that his application of manure to this land was not greater than equivalent of fifteen loads of barn-yard manure to the acre. He expressed the decided opinion, which was concurred in by others who had experimented on the subject, that the effect of manure was as favorable and enduring upon this soil as on any other."

Two years later I saw this farm, and it afforded exhibition of continued improvement, in the hands of a son of the former proprietor. In the year 1858 Mr. Wilson raised a crop of 3000 bushels of potatoes from ten acres of land, which he sold for \$1,875. He expended per acre for manure \$50.00 and for cultivation \$37.50, making an aggregate \$875.00, and leaving a net profit of \$1,000. The same lot yielded a heavy crop of wheat last season, and now presents as beautiful a clover ley as ever excited a farmer's admiration. A piece of land, several miles east of Deerpark upon the plains, owned by Mr. S. Taylor, and embracing two and three-fourths acres, yielded, in 1858, seven tons of good hay, and a still heavier crop the last year. This land, I learn, had received no application of manure in the five preceding years.

A highly eminent gentleman who resides on the Island a portion of each year, informs me that it is habitual for the occupants of the gardens and orchards on the south shore, to transport the loam from the plains to replenish and fertilize their grounds. If this soil is worth transporting for such purposes, it can require no elaborate argument to prove its value for cultivation.

It is not necessary to pursue these illustrations. The facts I have adduced are sufficient to establish the qualities of these lands. In objecting

to the evidences of these results, it is sometimes urged, that these crops were raised in peculiar and favored localities, which are exceptions to the general character of the soil. The error of this position will be most apparent to any one who will make the proper investigation. These localities will be found in no respect superior to the average of plain lands and precisely similar to the soil of the wilds, which is only separated from them by a simple fence. I will now briefly notice some of the objections which are advanced to the culture of these lands. I have already incidentally discussed some of the most prominent.

OBJECTIONS TO THEIR CULTURE.—One of the most prevalent objections which is often urged, rests on the idea that the porosity of this soil renders it too dry for cultivation and incapacitates it for the retention of manure. The instances I have already introduced, such as the heavy crop of grass upon the land of Mr. Taylor, with no application of any manure for the five preceding years, seems, by practical results, to disprove this theory. I have not space to discuss the question so much controverted, whether manure is wasted by evaporation or leaching, but will assert without hesitation, that a soil made so adhesive by a preponderance of clay, as characterizes the plain lands, is in danger of being too compact rather than too open. A superficial soil of this kind, from twenty inches to three feet in depth, can scarcely suffer from porosity, and that it does not, is evident from the heavy crops of grain and grass it yields, and the luxuriant growth of fruit trees on the improved spots, as well as the immense burthen of forest trees and vegetation it bears in its native condition. I believe that the under stratum of coarse gravel which must cause this porosity, if it exists, has no greater effect upon the superficial soil than would be produced on any earth by a thorough system of under-draining. It is this agency that carries off the surface water and renders the soil dry and warm. That the influence of this formation is useful and its effects similar to that of under-draining, appears from the fact mentioned by Mr. Bridger, that on removing the earth with a hoe, in the dryest weather, he always found moisture beneath. He stated that his crops never suffered from the drought. This moisture is doubtless the effect of capillary attraction, which, it is contended, is an agency that causes one of the peculiar benefits secured by under-drainage.

SOURNESS.—There is, I believe, little difference of opinion in reference to the fact, that the bush plains are affected by an innate acidity which imparts a certain degree of coldness and infertility to the land in its natural state. It is not greater, however, than might exist in any earths which have been shrouded for ages from the influence of the sun and air, by a heavy foliage, where leaves accumulate in deposit on the surface and are in various processes of decomposition. The application of alkalis, or quickening manures and the effect of cultivation alone, rapidly relieve the soil from this property. When it is turned up to the action of the sun and feels the influence of the elements, this acidity soon disappears. This result is apparent from the circumstance, of which I am amply assured, that

these plain lands improve constantly in their fertility under cultivation, even when no manures are applied.

FROSTINESS.—The alleged tendency to be affected by frosts, is another objection urged against the cultivation of the plain lands. It seems impossible to my mind in the nature of things, that any district of an Island, in the position of Long Island, and so remarkable for its mild temperature, should necessarily be exposed to this great evil. If frosts do at present prevail on these plains, the fact may be referred to philosophical causes, which the progress of improvement will remove. Here is a vast area covered by a thick matting of trees, bushes and impervious herbage. The winds do not circulate through this canopy; the earth beneath it is always damp—an immense excess of evaporation takes place from these combined causes, and the soil has never been penetrated or warmed by the genial rays of the sun. Gentlemen remarked to me, that when riding through the plains in the evening they could perceive a difference of several degrees decrease in the temperature among the bushes and that of the atmosphere which enveloped the clearings. When this vegetation is removed from the surface and the earth is dried and warmed by the action of the air and heat, no difficulty of this kind, I am confident, will exist.

THE EXPENSE OF CLEARING.—The heavy expense which, by the common practice has been incurred, in preparing the lands of the bush plains for tillage, has been a serious obstacle to their occupation by men of ordinary means. The peculiar advantages of position and the great value of these lands when subdued, will probably justify these disbursements when the occupant possesses capital which he can conveniently appropriate to the purpose. The soil is thus brought into immediate culture and productiveness, and one successful crop will generally return the expenditure. The method used upon these lands ordinarily is very unlike that pursued with other wild lands. The usual course elsewhere, is to cut the heavy timber, to clear off, pile and burn the under-brush and rubbish; to seed down with a crop dragged in on the fallow, and leave the roots and stumps to decay through the processes of Nature. When this is accomplished, the plow is successfully introduced. There is delay in this system, not perhaps conformable to the designs and interests of the proprietors of the plain lands, but by it great economy is secured. No owner of wild land in other sections of the country, would dream of preparing his soil for cultivation by a preparatory grubbing by manual labor; yet, under existing circumstances, this method on these plains, has undoubtedly its advantages.

I have carefully collected information in reference to the various plans pursued in these operations, and will briefly present the result of my enquiries. Mr. Bridges has favored me with a very intelligent account of the methods he has used in subduing his own lands. I can merely introduce an abstract of his paper. He states that he has tried three methods: 1st. Grubbing all over by hand, taking out everything, stumps and bushes. 2d. What we call stumping, which is to go over the land cutting the stumps 6 or 8 inches below

the surface, then plowing with two horses and dragging." 3d. "Plow with a horse and yoke of oxen and heavy plow, then follow with a drag, collect the roots and burn them." In each of these methods I infer the bushes are to be cut and burnt or removed. The first course, he thinks, should only be adopted on a small scale, as the process is slow and expensive. The second is effective, but also requires much more disbursement than the last. The plowing in the third method may easily be performed by a span of horses and one yoke of oxen. Mr. Wilson, in a careful account, made the expense of grubbing his lands, and the work seemed to be admirably executed, at \$15 per acre. Mr. Bridger calculates it at a much higher rate. It is very manifest that these lands should be cleared at an expenditure much reduced below these figures.

Dr. Peck, who has had long and familiar practical acquaintance with the management of these lands, both in their rude and cultivated state, proposes several methods which he has himself pursued, and which, if practicable, reduces the process of clearing to a very simple and economical operation. It is proper to remark in connection with this subject, that the wide spreading and massy roots of large trees which usually occur on other new lands and so inconveniently impede the plow and drag, do not now exist on these plains. The large roots of the oaks, which do not however, attain a great size, are chiefly tap roots, penetrating the ground vertically, and not widely extending over the surface. The roots of the shrub oaks and bushes, are soft and porous, readily severed by a sharp coulter, and rapidly decay in the earth when their vitality is destroyed. Another great facility to the plowing of these lands, even while filled with roots, is the absence of all rocks and stones. These facts afford the basis of the system recommended by Dr. Peck. One of the plans he suggests, is to cut down the under-brush by a heavy scythe or bush hook after the timber is removed; burn this with all the rubbish upon the surface. When the ground is cleared of these impediments, enter on it with a stout, heavy plow, prepared with a sharp steel coulter, and a cutter attached to the point and drawn by two yoke of cattle. With this force, he thinks everything can be plowed up and turned under, except the few larger stumps, and these he would leave for time to effect their decomposition. This course would bring the land into immediate cultivation, but of course not into the beautiful condition careful grubbing would accomplish.

Another method Dr. Peck proposes is still more economical, but more tardy in its results. Here he would simply cut and burn the underbrush, remove the rubbish, and drag in a crop of rye with clover and timothy seed. The bushes and the grain and grass will start together in the spring, but the rye will ultimately attain the ascendancy. He cuts the rye at harvest with a short straw. The crop will be small, but aids in remunerating the labor. In August he cuts closely the young sprouts, which are as tender at that season as corn stalks, with the grass. The mass affords good coarse sheep fodder. Repeat for two or three years the operation, cutting the bushes two or three times each season, when they will be

entirely destroyed. The roots will have, to a great extent, decomposed in the earth, and in the process have imparted, he thinks a fertilizing element to the soil equivalent to fifteen or twenty loads of barn-yard manure. Dr. Peck objects to the grubbing system, for the reason that by the removing of the roots, it deprives the soil of this great fertilizing principle. I have no doubt but that a vast aggregate of vegetable matter may, by deep plowing, without grubbing, be incorporated with the soil. I do not merely embrace in this idea the spongy roots referred to, but the leaves and the coarse vegetation which shroud the surface by a net work of its infinitude of roots, fibers, and tissues. To what extent these materials would be disturbed by the harrow, and clog its operations, I have no practical knowledge; but I conjecture that the collecting and burning of those which should be brought to the surface, would not be attended with much expense. The earth on the third or fourth year, in the second method advised by Dr. Peck, would be ready for plowing. The large stumps will then be torn up by the plow without difficulty. He thinks that seven or eight dollars will cover the disbursement of clearing the land by either system. The burning over the whole surface is in one aspect objectionable. The accumulation of vegetable matter, and the humus on the soil, will be consumed by the process. Although the ashes will be valuable, the ingredients themselves are far more so. I should prefer, I think, piling the bushes and rubbish in as narrow and high heaps as possible for burning.

In my judgment, when the land is not designed for immediate cultivation, sheep would be found the most effective and economical agents for preparing the soil for tillage. The course to be pursued in this system would be to cut off the trees and large bushes, pile and burn the refuse material, and enclose a field, its size being determined by the number of sheep, by a secure fence. Turn into this enclosure the flock of sheep, in early spring, when the young sprouts begin to start, and the coarse grasses are tender and juicy. Sheep delight in this kind of pasture. They feed with avidity upon these grasses at that time, and will totally suppress the growth of all bushes and briars. In the second year the surface of the land will be cleared and subdued; and while this process is in progress, the roots and stumps will have essentially decayed. In addition to these benefits to the land, the sheep will impart a positive and great fertility to the soil, which will be equal in its effects, to the application of a large amount of manure. Their excrement must also exert a powerful effect in freeing the soil from its inherent acidity and inertness. The entire surface of the land will, in two years, be mantled by a rich and verdant covering of clover. When I suggested this mode of reclaiming these lands, I was met by the objection that on the Island sheep cannot be protected from the ravages of dogs. In my journeying on the Island, I noticed only one flock of this valuable animal, and their absence was imputed to this cause. The enforcement of existing statutes, or of more stringent laws, if required, might certainly remove this impediment to the fostering of a most important branch of stock husbandry.

CULTIVATION.—The method by which the most judicious and appropriate culture may be applied to these lands, is a question of the greatest practical importance. The fact, I think, is established, that they possess most of the essential inherent properties necessary to successful tillage. They are of sufficient natural fertility; they are warm, genial and perfectly underdrained. The abundant crops they yield, afford the most conclusive attestation of the correctness of this opinion. It is undoubtedly true that they require, or like most other lands are greatly benefited by the application of manures; but it is not true that an excessive quantity is necessary to render them productive, or that the effect of manure is not enduring. Land which, for a series of years, will yield an unusually large burden of hay, without the use of stimulating ingredients, must be esteemed congenial to grass. Soil which returns an abundant crop from the moderate application of manure, as was illustrated in the corn and potato crops on Mr. Wilson's farm, will amply remunerate a large disbursement for that purpose. I saw a heavy corn stubble in the autumn of 1859, on the land of Mr. Bridger, which indicated a most vigorous crop, that he assured me was raised with no other manure than a little poudrette in the hills. The fact is not controverted that the plain land, when first cultivated, requires a small application of manure to correct its natural sourness and inertness, and to stimulate it into activity. The soil feels the influence, and amply returns the expenditure. The remarkable crops I saw upon the plains were, in no instance, secured by an extravagant outlay for fertilizers, and no greater than every provident farmer would desire to effect a remunerative result to his labors. Fifteen loads of barn-yard manure to the acre, seems to be regarded as an abundant application.

The clover culture I regard to be the instrumentality which is calculated the most certainly to advance the agricultural prosperity of this territory. The soil is adapted to it; and the mild climate, frequent rains, and moist atmosphere, will always maintain the crop in a vigorous and thriving condition. I have seen nowhere, more beautiful and prosperous clover crops than I met with on these plains. The same natural causes will cherish the culture of other grasses. Gentlemen assured me that the wild grasses on Hempstead Plains, are as enduring as any other grasses, and retained, throughout the summer, their freshness and nutrition.

A rotation of crops, based on the clover culture, is, I have no doubt, the most certain system by which the permanent improvement of the soil may be effected. The exemption of the land from stones and large stumps, the ease with which it can be tilled, the mildness of the climate, and the additional time this circumstance affords for labor, are all highly important inducements for the cultivation of these lands, and should be considered in deciding upon a system of tillage. I am confident that their successful cultivation does not necessarily demand any extraordinary investment of capital or extravagant disbursement for fertilizers, but that this result may be attained by common means, guided by a judicious and intelligent husbandry.

Dr. Peck, Mr. Bridger and other gentlemen, have supplied me with much valuable information in reference to the practical management of these lands, which seems to be combined in the following conclusions. Rye or buckwheat, in a fair yield, can be relied on upon the new land without manure. Mr. Bridger remarks : "sow with buckwheat, with a dressing of one hundred and twenty-five pounds of Peruvian guano, or twenty bushels of shell lime, or ten to twenty bushels of bone chips ; plow the crop under ; sow again, if practicable, with buckwheat if not with rye ; seed with clover, plow under one good sward of that, and you are all right." "Corn, potatoes, or indeed any crop may be obtained by using three or four hundred pounds of Peruvian Guano, at three cents per lb., or five hundred pounds fish guano, at one and a half cents, or fifteen thousand fish, at \$1 per M. To produce hoed crops successfully, some stimulating manure is necessary. The best I have tried is, first, barn-yard manure ; next, bone dust, lime, salt and ashes mixed together, are good ; gypsum also succeeds, although science may condemn it in a marine atmosphere. Clover, however, will be the great agency in bringing the land into good condition, and that can be produced here equal to any section of the country.

GARDENS AND ORCHARDS.—The course of discussion which I have pursued has led me to examine the plains in reference chiefly to their capabilities for agricultural purposes. A still more desirable and lucrative occupation of this land, will be found in its appropriation for gardens, orchards, and the smaller fruits. A warm and quick soil, a genial climate and moist atmosphere, combine to eminently adapt Long Island to these pursuits. The plains are no exception to this remark. Two years ago I visited a peach orchard in the vicinity of North Islip Station, then just planted. In the season of 1858, it yielded an abundant harvest of the choicest fruit, and the orchard now exhibits a healthy and vigorous growth that can nowhere be excelled. Numerous other experiments with the peach, pear, cherry, apple and plum, have met with equally successful results. I saw young apple trees on the grounds of Mr. Bridger which bore the second year from the nursery. These, and trees of other fruits, disclosed a heavy growth of twenty inches to three feet, last season.

The blackberry, raspberry, and other small fruits, flourish on this soil in a vigorous and luxuriant growth. The strawberry is equally prolific and successful. The culture of the low or swamp cranberry, is a novel but highly interesting feature in the horticultural industry of the Island. The experiment of Mr. Young and its eminent success, has attracted much attention to this subject, and there is every indication that this culture will be widely extended and become a lucrative pursuit. The ground occupied by Mr. Young for this purpose, is at Lakeland, in the central part of the Bush plains. The cranberries he cultivates, are procured with trifling expense along the margins of the swamps in the vicinity where they grow spontaneously, and in great profusion. He planted in the year 1856, about one-third of an acre of plain land to the cranberry, and in the autumn of

1859, he received from the American Institute, a premium on about twenty-four bushels of beautiful fruit picked from these vines. He has other pieces of the cranberry quite as promising as this, under cultivation. Mr. Young, in his statement to the Institute, says, as the results of his experience, that "the cranberries will grow and do well, although the vines be taken directly from the swamps; that they will grow on new land and immediately on its being broken up; without manure; without a wet sub-soil; without artificial irrigation; with but a moderate amount of labor; producing a good sized, deep colored, well matured and high flavored berry, and that in dollars and cents, the returns are sufficient to induce many to follow the example set before them."

I regret that the limits of this paper will not permit me to explain the method pursued in the cultivation of this valuable plant, or to urge the various reasons which suggest themselves for an extended appropriation of these lands to the object. I found a number of individuals preparing with much zeal, to embark in the business the next year.

Numerous gardens are scattered near the line of the Railroad through the whole length of the Bush plains. Fragrant with flowers and exhibiting a growth of vegetables of great size and rare excellence, they are eminently suggestive of the results which may be attained when horticulture shall receive the attention and enlarged operations its great importance will warrant. The beautiful grounds and decided success of the efforts of Mr. Ranney and Mrs. Landon, near Thompson's Station, and of various other individuals in different localities, enforce this conviction.

The gardens of the Messrs. Van Sicklen, south of the Railroad in Jamaica, illustrate the great profit of this occupation in connection with these lands, when it is conducted on a liberal and capacious plan. These gentlemen occupy about one hundred and sixty acres of land, not superior in quality to the average of the plain lands, and which is chiefly devoted to the culture of vegetables and other garden products. They expend annually \$3,000 worth of manure, principally stable dung, and realize upon their grounds an average neat profit each year, of about \$6,000, from the proceeds of the crops they produce.

When improvement and cultivation shall have succeeded the rude wilderness which now deforms these plains, the repose and seclusion, the delightful climate, the salubrious air, and the exceeding beauty which will then fascinate the eye, will allure to this region, the votary of Nature, and the men of business and wealth. A dwelling upon these plains will then gratify the taste, and secure all those pleasures and enjoyments which render a rural life so attractive to the denizens of the city. A small freehold may now be purchased on this territory at a price which would scarcely secure a rocky knoll at the same distance from New York, on the banks of the Hudson. The region surrounding Lake Ronkomkama, a beautifully picturesque and romantic sheet of water, will afford the most delightful country residence that wealth or taste can desire.

A design of Mr. Stone, of Brooklyn, which I trust will be consummated

the ensuing spring, foreshadows a policy calculated to effect results of great public as well as private utility. The purpose is to form extensive manufacturing establishments upon this territory, and to confer on the operatives the privilege of purchasing small parcels of land, at moderate rates, for their own cultivation. Steam will always readily and cheaply supply the motive power to any extent, for such institutions. I can only thus glance at the scheme, but its importance to individuals and the immense augmentation of the business and wealth of the Island it would promote, must commend it to the earnest consideration of every intelligent mind.

I have, in the preceding pages traced, with a rapid hand, the views I have embraced, after a careful examination of these plains in their various aspects, and all the reflection I have been able to give to the subject. In revolving the different topics I have discussed in my own mind, and comparing these views with the opinions of intelligent and practical men who are familiar with the question, I can discern no cause to doubt the general justness and accuracy of my conclusions.

Possibly, my judgment may be influenced by an undue enthusiasm, but my imagination, penetrating the vista of a few approaching years, perceives culture and beauty succeeding the desolation that now mars and disfigures the scene and revolts the eye; I see a vast champaign, unsurpassed in beauty and luxuriance, spreading over an area of sixty miles in length, adorned by the villa and cottage, redolent with the golden harvest, embellished by gardens and orchards, teeming with flocks and herds, and animated by the clangor of machinery and the pulsations of industry. When this fancy shall, as it must, have acquired the tangible form of the actuality, there will be revealed in this territory to the delighted vision, a scene of beauty, of rural wealth and attractiveness, that will be surpassed in no section of our land.