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John Bailey Esq.

from his
friend & old serv

Address

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Recd 30 June 1822

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TO THE

RHODE-ISLAND SOCIETY

FOR THE ENCOURAGEMENT OF

DOMESTICK INDUSTRY.

Delivered at Pawtuxet, October 16th, 1822.

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BY THE HON. ASHER ROBBINS.

PROVIDENCE :

MILLER & HUTCHENS, PRINTERS.

1822.

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PAWTUXET, October 17, 1822.

SIR,

We have the honour, in behalf of the Society for the Encouragement of Domestick Industry, to return you their thanks, for the excellent Address delivered by you, yesterday, before the Society : And to request a copy for the Press.

We are, with sentiments

of the highest respect,

WILLIAM WILKINSON,

S. T. NORTHAM,

WM. E. RICHMOND,

} Committee.

Honourable Asher Robbins.

PAWTUXET, October 17, 1822.

GENTLEMEN,

In compliance with the request, contained in your polite communication of this date, I have the honour to furnish herewith, a copy of the Address referred to.

With sentiments of perfect esteem,

I am, gentlemen, your obedient servant,

ASHER ROBBINS.

William Wilkinson, S. T. Northam and William E. Richmond, Esq's.
Committee in behalf of the Society for the Encouragement of Domestick Industry.

ADDRESS.

It is pleasing to witness the spirit of agricultural enterprize and improvement rising in every part of our country. This spirit, if not now universal, is rapidly becoming so. We see it breaking out every where—in the middle States, in the northern, in the southern, in the western; and like the kindling fire, we see it gathering strength as it rises and spreads. Who does not see in this rising spirit a subject of national felicitation? Perhaps the greatest this country ever had; certainly greater than any other country ever had. Was even the spirit of liberty itself, which produced the Revolution, and gave us our independence, more a subject of national congratulation? That indeed was a glorious spirit, and its fruit was glory, as well as independence. But who can estimate the value of this new-born spirit which now animates our country, when we consider our great and rapidly increasing population, their characteristick ardour in every lucrative pursuit, their acuteness in discovering, sagacity in improving, and dexterity in applying, the means best fitted to accomplish their ends, and their boldness in enterprize; but above all, that boundless scope which our country affords, for the range of this spirit; and all this, under the most favourable political auspices, that any country ever was blessed with? Here the soil is the people's; the government is the people's; every thing is their own; every acquisition is secure; every acquisition belongs to the acquirer; he is in no danger of losing it by the rapacious

hand of external violence ; nor by the no less rapacious hand of internal oppression ; he sits under the shade of his self-regulated and protected freedom with none to make him afraid : advantages in the aggregate that never before attended any people on earth. I say, when we consider all these things, who can estimate the value of this spirit, which is now kindled and kindling, every where throughout our country, in this great pursuit ? Should it be aided by that system of political economy which our circumstances point out, and recommend to us ; which let us hope will be the case, though as yet it does not seem to have been sufficiently studied or understood, by the majority of those who have had the lead in our affairs ; it will give in time, and no distant time, the most astonishing results. Should we now anticipate these results, and state them, the picture of our country, as it would then appear, would seem to many like the visions of poetry ; but it would be no fancy picture, it would be a true description ; it would be what will be realized to us by the *genius* of agriculture whenever it becomes that of our country. And let us hope she is about to make this country her favorite abode ; that here is to be her temple and her altar ; (never was a *genius* more deserving of both, never was a people more worthy to be her worshippers,) that our land is to be filled with the monuments of her wonder-working power ; that some future Virgil will celebrate her praises in his immortal strains ; will record that of all the lands beneath the sun, this was her chosen seat ; will sing,

“ Hic illius arma ;

“ Hic currus fuit :

That she will here pour forth her streams of wealth, like rivers of gold from her sources, that can never fail, but will for ever increase ; that by these streams she will lead us to the glory, not of arms,

but of arts ; and fill our country with their trophies, and their monuments ; that then standing on the heights of our Alleghanies, she will send her glances from the shores of the Atlantick ocean to those of the Pacifick ; from the lakes, and the St. Lawrence in the north, to the gulph of our own Floridas, and the borders of the Tropick and behold one universal scene displayed of her peaceful triumphs. But

“ Thro’ states unnumbered tho’ this power be known,

“ ’Tis ours to hail her, only in our own.”

Here we have every thing to invite to enterprize and encourage hope—the great and growing market afforded by our commerce and our manufactures ; the vicinity of all our lands to this market ; the natural fertility of much of our soil ; the great improvements which it all admits of, and the abundant means we have of making them ; but above all, that great capital at command, and ready to be employed, as the profits of its employment in this channel shall become better and better understood. Yes, we may confidently hope that our little State, though among the smallest of the tribes of our land, as she now, relatively to her extent and population, takes the lead of all the States, in the two great branches of industry—commerce and manufactures ; so she will soon take the same relative lead in this branch—that as we now talk of our eminent and successful merchants, our great and flourishing manufactures, we shall soon have wherewith to boast of our opulent farmers and prosperous agriculture. Then, with a wealthy community in all its classes, we shall no longer lament the want of common resources for the support of those establishments, which impart knowledge and diffuse refinement ; which secure rights, and connect them with the feeling of security ; which nourish the virtues, and teach the graces that adorn them ; which throw over the surface of life

its charm and embellishment, and make it at once splendid and happy. Nor do I think I am too sanguine in this hope, when I look around upon the number of our eminent citizens turning their minds to this object; when I recollect their intelligence, their means, their ardency of pursuit, the great things they may accomplish themselves, the still greater they may effect by the influence of their example. Particularly, when it is found to be a certain road to riches, as undoubtedly it may be made. Yes, my fellow-citizens, here lies a mine of wealth that has been overlooked and neglected, that never has been wrought by us, though it may be to great profit; not lying hid in the depths of the earth, but richer than any buried there; lying at its surface, more inviting to adventure, and more promising in its results. The till late common notion that agriculture could not be made a profitable business, at least comparatively so to other branches of industry, is fast wearing away. It is descending to the tomb of departed errors; for undoubtedly it is an erroneous notion. It is born of ignorance, and will die with its mother; and die, I hope, soon, and mother and offspring be buried in the same grave, for it has been a most pernicious error to the interests of agriculture. It has kept it in a state of degraded and degrading neglect. Its influence has diverted talent and science and capital and enterprise to other pursuits. How different have been the fortunes of the arts of manufacture? What obligations for instance they owe to science? Its discoveries have been applied to aid, to improve, and to perfect them. The most powerful minds are employed in inventing the means of facilitating their operations; they draw to them capital in abundance; where one can not furnish it, numbers join for the purpose; every new improvement of every place is eagerly sought after, in every place adopted; every thing that pro-

mises to be an improvement is readily tried—they have prospered—they have made returns accordingly. And commerce too, how eagerly it is embraced, and every channel of it pursued? In both, property is rapidly accumulated and large fortunes acquired. And it is this success that tends to confirm the pernicious error alluded to, for these results are not witnessed in agriculture.

This error further tends to confirm itself. It first induces the neglect of agriculture, and then that neglect induces the failure of the business. It begins in falsehood, but ends in fact, by its own mischievous operation. But it is time to expose the pernicious error, and to have it finally exploded.

Capital in agriculture may be employed in a two-fold manner, in the purchase of land or in improvements upon it. Money invested in lands either for rent or occupation, though secure, is not at present profitable; it is less so than money at six per cent. interest. But laid out in improvements, it is profitable; more so than Banks, and equally so with commerce and manufactures. The whole of the capital of agriculture, or nearly the whole, with us, is invested in the land; very little is applied to improvements. The accumulations from rent or occupation go to the purchase of more land, or go to loans on interest; or go to some other branch of business. So little goes to improvements, that very few farms hold their own; the greater part deteriorate, and their little profit is yearly becoming less. There are some exceptions, but this is the general state of our agriculture. Hence it is that this business is unprofitable; and it is impossible on this system that it should be otherwise. The reason is, that the wages of labour absorb so much of the proceeds of the produce, that very little is left as a surplus; the gain consequently is very gradual, and the accumulation never great. If the cost of production equal the value of the pro-

duce, there is no profit at all, for it is the excess of the value beyond the cost that is the measure of the profit; and the poorer the state of the land is, the more nearly are these necessarily balanced.—The cost of cultivation is the same or nearly so, whether the soil be productive or unproductive. Hence, as the productiveness decreases, the profits decrease, till they become nothing—till the business becomes a losing business. We see the cause then, why our present agriculture is unprofitable; and that this cause must continue to have this effect whilst this system continues. It is thus that a branch of business which might have been made a great source of publick and private wealth, has, by a wrong system of management, been found unproductive; considered as an unpromising business, and neglected for other pursuits.

The great drawback upon agriculture is the wages of labour. The high rate of wages is the general complaint, and the general argument against the pursuit. Now it is precisely upon this point that capital in improvements operates its benefit. It enlarges the difference between the value of the produce and the cost of production, particularly in the article of labour. And this difference by means of improvements, may be made so great, as to make this objection, founded upon the dearness of labour, entirely vanish.

Numerous are the objects of improvements, and abundant the means of making them; and there is not one of them on which capital may not be profitably employed, and very profitably. Combine the cost of the land with the cost of these improvements; consider both as a joint capital; still the profit will be very great. Then for those who have already capital, invested in land, to withhold capital from improvements, is to render their invested capital, poor stock; and to keep it so—is to refuse a further employment of capital, which by itself

would be extremely advantageous; and by its connexion with that already invested, would make both so. Nothing can be more injudicious, upon calculations of pecuniary interest.

If the farmer were to employ his profits in improvements, he would find the profit arising from his profits, beyond comparison greater, than upon the present plan of loaning his profits upon interest, or in other branches of business. Money, in improvements, is money at great interest, and at compound interest. Upon this principle it is, that fortunes are accumulated in trade and manufactures. Profits become capital; new capital produces new profits, and in this way, if the business prosper, the mass of capital is continually increasing, and a fortune is the result. It is upon this principle that fortunes have been acquired in agriculture, wherever they have been acquired; and where the true principle has been acted upon, and in proportion as it has been acted upon, has property been acquired by it. In England it is not uncommon for a farmer to retire upon a fortune acquired by farming. It is true the business there has some advantages over us in the cheapness of labour, and in markets; but then these are offset by disadvantages, that outweigh them, and leave the balance in our favour. Indeed nothing displays so strikingly the prolific energy of this principle of employing capital in improvements, as the successful agriculture of England against the enormous taxes it has had to contend with.

But I may be asked, why do you not give the demonstration, by giving particular statements; by specifying the improvements to be made, and the means of making them; and by comparing the results with the costs? This, doubtless, would be the proper way, on a proper occasion; but the present will not admit of it. A partial enumeration, or a summary statement would not do justice to the ar-

gument—would not impart that light, and carry that conviction, which a complete enumeration, and a full development of each particular could not fail to produce. And this would be matter for a practical treatise and would fill a volume. But can volumes be necessary—need any more be said to dissipate an erroneous opinion, which every one must see has been founded on what agriculture has been, not on what it may be?

There is, also, a certain prejudice, which it is desirable should be removed, as it operates injuriously to the interests of agriculture. It is something akin to the erroneous opinion we have been combatting, but affects a different class of men. It is the prejudice against the science of agriculture, against book-farming, as it is sometimes contemptuously called. This is felt more or less, if not avowed, by the great body of our practical farmers. It is to be hoped, that this, too, is wearing out, and will soon cease to be felt at all. They conceive that farming is a business of experience and skill: so far they are right—that agriculture must adapt itself to the situation, and will be, and ought to be different in different countries: here too, there is no quarrel with them. But when they go further, and suppose that no instruction is to be gathered from the experience and skill of other countries, no useful lights to be gained from books, no advantages to be reaped from understanding the theory of those results to which their business, mechanically, conducts them; here they deceive themselves, and, in a matter, in which they, of all men, are most directly, and deeply interested. Let them reflect, that though productions vary, with situation, and modes of culture with production, yet that principles are, every where the same; that Nature is the great efficient power, in all the operations of husbandry; that she acts upon her own principles of agency; that the business of science

is to discover, and teach her principles, and of art, to apply the means of assisting her operations; that a knowledge of these principles is useful to a discovery of these means; and that a full discovery of all such means can only be expected from this knowledge. Let them reflect further, that experience is, and has been, the teacher of others too, all over the earth, in all its ages, and that her lessons are not confined to them; that she has suggested different means, to the same ends, in different places; and that it is presumptuous, and too much to believe, that she has taught us here, the very best of these means, and left us nothing to learn. Let them reflect, again, that all their farming-knowledge, valuable as it is, was once theory, and existed only in speculation; that it became practical from experiment, and is now familiar from traditional experience; so that their prejudice is against the means by which their present knowledge was originally acquired, and operates to proscribe all future improvement, from the same fruitful source.

Let me not be misunderstood. I do not blame the farmer, for his unwillingness to leave the beaten track of his own experience, and venture on new, and untried enterprizes—upon processes which he has neither verified by experiments of his own, nor seen verified, by those of others; which must be attended with expense, and may be followed by disappointment. This cautious spirit, ready to improve, but prudent of expense, is commendable in him. This is not the prejudice I complain of—far from it. It is the farmer, I blame, who turns a deaf, or incredulous ear to all instruction; who condemns new things because they are new; who dislikes to see them attempted, and likes to see them fail; who derides the innovation, as a project, and the innovator as a projector; who keeps himself aloof, and warns others, from the specious, but dangerous novelty.

Project and projector! These are terms of derision, and the contempt of the things gives point to the ridicule. But is this extreme contempt judicious? If the projector fail, he hurts no one but himself. If he succeed, he benefits society, but he seldom benefits himself. Hard is the fortune of the poor projector;—certainty of disgrace is one event, and in the other no certainty of reward! Yet what obligations the world is under to him! Every useful invention among mankind was originally a project—even the plough was so. So was the draught of the plough by the horse and the ox. What project ever appeared wilder, when it was first proposed, than that of catching a wild animal, in the wilderness, and training him to the draught of the plough? Yet the bull and the horse once were such wild animals. And this project, so visionary as it then seemed, resulted in accomplishing the first great revolution, in the progress of man, from barbarism to a state of civilization and refinement.

What future obligations the world is yet to owe to the projector, is unknown, but doubtless they are very great, particularly in this department of human industry. Probably agriculture may be considered as yet in its cradle, comparing what it now is, with what it may become: so little is known of principles and means, compared with what may be known of both.

Our present knowledge of agriculture, is a knowledge of effects, rather than of causes. Observation of effects often leads to conclusions which lead to new trials, and new results of great importance. But it is reasonable to believe, that the greatest improvements are yet to be made, by a knowledge of causes, yet to be acquired. This is the kind of knowledge which is power; which gives to man his control over Nature, and makes her subservient to his purposes. Here, then, let science direct her researches! Never was a field before her more in-

viting, to the ambition of new discoveries ; never was her employment more directly useful and interesting to mankind ! How little is known of the economy of Nature in production ! Of the secret sources of her productive powers, of her processes in her analyses and her combinations, of her agents, her means, and modes of operation ! Nature has her peculiar laws for every species of her production, for each genus, class, species, and variety of her plants, and for every race of every order of her animals. Can there be any doubt of the greatest results from a knowledge of these peculiar laws ? The instance, I am about to mention, in exemplification of these results, may have the less effect, as the fruit I have selected, is deemed an article of luxury, rather than of profit, except in particular places, and to be beneath the attention of the common farmer. He will learn to correct this estimate. Fruits in general, besides being the most innocent, as well as the most delicious, of all the luxuries of the palate, may be made to him a great source of great profit. But the fruit I particularly allude to, is the peach. You all know, that the peach tree is short lived ; that it is so, by the course of its own nature, independently of accidental causes of premature death ; that after giving a few crops it will begin to fail, and soon perish. Now, a knowledge of its peculiar laws of vegetation and fructification, has suggested a peculiar mode of management, by which a vigorous life is prolonged almost indefinitely, certainly beyond the period of one hundred years ; and by which it is kept in a state of never failing fertility. This knowledge seems first to have been acquired, and this mode of management devised, and first adopted by the ingenious gardeners of Montreuil, near Paris. In that interesting village, the peach tree, displays this improvement in all its efficacy. There, it is seen giving its abundant crop of deli-

cious fruit, from year to year and from generation to generation. This single improvement has accumulated the value of the same land at least to a ten fold degree. Some analogous instances might be given in exemplification of these results, but not many. The knowledge by which they are to be produced, has not been acquired, but which, if acquired would as certainly produce them.

Agriculture is a subject to which a number of sciences may apply their powers, and probably with great effect: such as chemistry, mineralogy, botany, and the philosophy of mechanicks. Hitherto, their application has been directed to the various arts of manufacture and medicine, and their effect in the improvement of the arts particularly, has been wonderful indeed. It is true agriculture owes some obligations to them, but these are comparatively few; and they have mostly happened, incidentally, and accidentally, in the pursuit of other objects of discovery. The improvement of agriculture has no where been their professed object of research. Some occasional and partial investigations, indeed have been attempted; and so far this general remark is to stand qualified.

It has hitherto been a misfortune particularly to agriculture, that science and practical knowledge have not been more united. The agriculturalist has not been a man of science, nor the man of science, an agriculturalist, except in rare instances. A greater union of the two characters would be a most desirable thing. Were the man of science engaged in the occupations of husbandry, his attention would be arrested by the phenomena daily occurring to his observation; his curiosity would be awakened as to causes; his science would suggest to him theories for their explication, and his experiments would bring them to a test. The man of mere science is apt to keep himself to its study, and pursuit, without thinking much of its application to

practical uses, especially, if he have no profession or occupation to lead, to enlighten, and to interest him in making the application. He busies himself in applying his principles upon the problems of his science, or in making discoveries to extend its boundaries. He finds his enjoyment in the contemplation of its abstract truths, and in his triumph over the difficulties, in his march to the discovery. If he have ambition, and it is hardly possible he should be without it, it is the ambition of mere scientific fame.

The arts have been more fortunate in this respect. With regard to them, the union of practical knowledge and science has been more extensive, and this union has contributed wonderfully to their improvement. The botanist and physician are often united. The artist is not unfrequently a chemist. Indeed chemistry began with the artist. His alchemy laid the foundation of chemistry. In seeking two imaginary secrets of nature, many real ones were found—the search was continued, discovery followed discovery, till the science has been built up to what it now is: a science, that opens to view much of the internal world of nature, wonderful at least as her external, and, perhaps, more interesting. For while it reads to us the same instructive lessons of that divine wisdom and benevolence, which is every where manifest, and which has no bounds, it provides a store-house of means, by which the condition of human life is improved, and is made more happy. The chemists and the artists have a mutual intercourse to their mutual profit. The artist attends the lectures of the chemist to learn the principles of the arts, and to perfect himself in the means of perfecting them. The chemist visits the work-shop of the artist, to witness the practical operation of his own principles, and to get new hints and new lights, for new studies. Indeed the practical operations of the artist are near-

ly allied to the studies of the chemist, which are carried on by practical operations of a kindred nature.

The means of extending this union of practical knowledge and science, with regard to Agriculture, are so many, so obvious, and so practicable, and may be made so effectual when the publick mind shall be turned in earnest towards the subject, that we may indulge the most sanguine hopes from this source of future improvement. A sketch of these means, with the proper explanations, together with a description of the operation, which the sciences alluded to would have—how they would respectively enrich agriculture with their peculiar contributions—these would make a large theme. I could dwell upon it with much pleasure, to myself at least; and every lover of agriculture, who turns his mind to the contemplation, will find it a most interesting one. But I must forbear from it, at present, or omit some other topicks which perhaps ought not to be omitted; trusting to what I have said as sufficient to remove the prejudice which opposes itself to any changes in our present system of farming.

Ye Farmers then, lay aside your prejudices! Be blinded by them no longer! Open your eyes to your own great and immediate interest, in the object of improving the husbandry of the State! Be assured, that it is a practicable object, and to an extent which at present you little imagine: that it may be easily and rapidly accomplished with your cordial co-operation; that you are invited to it by the most powerful considerations—the rapid accumulation of property, the placing yourselves in situations of comfort, of independence, of blessing, and being blessed by, your families, of providing for their education, their establishment and their happiness in life, of making your sons and daughters worthy of their country, and your country proud of them!—And ye men of capital, who have imbibed a preju-

dice against the employment of capital in the business of agriculture, under a notion that it is, and must be an unprofitable investment, be assured that this is an unfounded prejudice; that it may be made a profitable investment, as much so as in any other branch of industry, besides being attended with less risk than most other investments! Capital is the very thing which is wanted. It is this want, and the ignorance of the very great and profitable use that may be made of capital, which has kept our agriculture down so low as it is, and made it so unprofitable as it has been. This has been the occasion of your prejudice. You have the means of supplying this want, and are the very men to embark in this business. Like every other branch of industry indeed, it demands the requisite qualifications for success; the requisite knowledge, the requisite skill, the requisite attention, industry and economy; but these are as easily acquired or commanded for this branch of industry as for any other. Your capital gives you the command of the means of knowledge and of the use of skill. Attention, industry and economy depend on yourselves. Every source of improvement that is known, here or elsewhere, is within your reach; every source for improving the productive powers of the soil, and abridging the expense of cultivation; every source of improvement, as to the plants to be grown, the grains, the grasses, the roots and the fruits; every source of improvement, as to the animals to be kept and propagated. In a word, every source of improvement, as to every species of rural economy, and all further improvements, as they arise from time to time, from further discoveries, here and elsewhere, will also be within your reach. And from the universal ardour, kindled, and kindling, in this pursuit, these further improvements may be expected to be very many and very great. Yes, you will assuredly find it a very profitable, as well as the most

delightful of occupations; so delightful, that the sense of profit from your improving resources will be forgotten in the greater sense of pleasure in the pursuit!

The first great object will be to augment the productive powers of the soil. This is the most important of all improvements. It lies at the foundation of all, it takes the lead of all, and gives much of their value to all. This once effected, success is certain, and in proportion as it has been effected. Land once raised to a state of high fertility is easily kept fertile. It contains within itself and gives the means of doing this, under a proper use and application of those means. The sources for means of augmenting this productive power must in a measure depend on the given situation, its nature and advantages. But there is scarcely any situation embracing a considerable extent of land, say, one hundred acres, which does not comprise these means, and is not connected with them, to a sufficient degree, to effectuate this object. Many situations possess them, in the greatest abundance, and some of these apparently the most promising. This productive power is acquired to land, by improvements, that in their nature are permanent, and by such as are adventitious only, requiring to be renewed from time to time. It is the latter only, which has commanded any attention, among us, and this attention has been extremely limited. Nothing like the full benefit of this resource has been realized. Neither all the various kinds of manure are known, among us, nor the different modes and facilities of its manufacture and accumulation. The adventitious resource of fertility, from cultivation itself, a very great one indeed, so far from being understood in that light, is supposed to be, necessarily, a cause of deterioration and sterility; and by its perversion, actually is so. As to permanent improvements of this productive power,

they are not attempted at all, nor even thought of. Draining and irrigation, in certain situations, and almost all convenient and practicable means of mending the composition of the soil, present objects for this species of improvement, and the most inviting objects. Plantation presents another.

Water is at once the greatest enemy, and the greatest friend of vegetation. In its excess and stagnation in the soil, it is pernicious, and the cause of sterility. In its diffusion and gentle currency over the soil, it is the greatest instrument of fertilization yet known. The evil of this element is subdued, and its great good acquired by the arts of draining and irrigation. These are arts, and it is in vain to think of these improvements, without a knowledge of the arts, and without the practical artist to execute the work. These arts are, in a manner, unknown in this country; but, fortunately, they are simple, and easily learned, and the foreign artist is easily procured. Much more of our land is accessible to irrigation than we have any idea of, or can have, without more knowledge of the subject. We see this resource only in places, where it is obvious to the unlearned eye; but the theorist and the artist would see this resource with very different eyes. He would see it in our numberless streams, and the height of their sources above the great body of our lands. Some of these streams, it is true, fail in summer, and would deny the means of summer irrigation; but winter irrigation is valuable, almost as valuable as summer, and, wherever it is practicable, merits the utmost attention. This improvement would bring relief to the farmer, when relief is most wanted, when he is most distressed, when his stock is most liable to suffer, and suffers most; that is, from the breaking up of winter, till the growth of grass. It would produce to him the most luxuriant and abundant pasturage, through

that pinching period, for his cows and their calves, his ewes and their lambs, and for all the young, of all his stock; and this, without the least injury to the crops of hay to follow, which would, notwithstanding, be most abundant. Irrigation, though generally appropriated to grass, is applicable to grain, and would probably be found superiour to any thing, for promoting the fruitfulness of orchards. An improvement, which gives to the barren and desolate waste the fertility of a garden, and makes that fertility perennial, can hardly be too highly appreciated, or too dearly bought. But in many situations, it might be had at an expense so trifling, that it would give an annual profit of some hundred per cent. upon the cost of the improvement. Draining is a simpler art, more easily learned, the artist more easily procured, executed with less expense. but attended with effects equally beneficial, and with profits equally great. This is every where practicable, if needed, or if there be any exceptions, they must exist in very peculiar situations. Individuals indeed, may perversely oppose obstacles, to the prejudice of their neighbours, as well as of themselves, but nature has interposed none, or if any, in very rare instances; for the requisite fall is almost every where to be found. Swamps, and swampy lands, are the great scene of this improvement. It is a mistake, however, to suppose them the only scene. Much of our land, which is dry in summer, dry enough for late tillage, would be greatly benefitted by draining. All soil is deteriorated by being water-soaked, through a considerable portion of the year. One half of the value of manure, perhaps more, is lost on such lands. Only the more inferiour grains and grasses can be grown on them; and of these, the crops are at best inferiour. All soil should be sufficiently drained to be dry enough for tillage, the moment the frost is out of it. Then every particle

of manure tells; then, the earliest tillage may take place; then, the most valuable grains, and grasses, may be grown; then, the crops will be abundant; then, you may see the harvests of the winter grains—the wheat, and the rye; of the summer grains—the barley, and the maize; the sweet and nutritious grasses, and particularly, the clovers; and the green crops of the esculent vegetables, where now you see the coarse, sour, tufted, bog-grass, the wild-flag, the moss-hummock, and the whole tribe of aqueous vegetation;—or, if in late tillage, where you now see a stunted growth of meagre oats, or more meagre Indian corn.

Our swamps, and swampy grounds, have been considered of very little value, and, in many instances, rather as nuisances, than as property, occasioning some expense, and yielding no profit. And in their present state, and if that state is to be continued, they are justly so considered; though they have, in themselves, an inexhaustible treasure of fertility, a deeper, a richer, and more lasting soil, than any we possess; capable of giving greater crops, of every kind, and incapable of being exhausted. Here it is, that draining becomes the most profitable of all improvements, accumulates the most value from the least outlay, creates a capital, out of nothing, as it were, at an expense that is, as nothing, compared to that capital, and which in some cases, is reimbursed, by the profits of the first year.

The substance of a good soil is made up of different kinds of earth, in certain proportions to each other, but intimately mixed and compounded into an uniform body. This compound we call a loam, which, you know, is of different kinds, depending on the different proportions in which the component kinds of earth are blended together. One kind of earth, alone, will not make a good soil. No art can make it so, by itself. It may be forced

to do something, but not enough to pay the expense of the cultivation. Thus, either a pure sand, or a pure clay, cannot be worked to advantage; but sand and clay, intimately mixed, become a loam and make a good soil. In this mixture of earths, necessary to a good soil, there are several other kinds, but commonly, in smaller proportions. Among these, the principal one is what is called calx, a kind of earth, partaking of the nature of lime, and abounding, more or less, in all good soils, but so diffused and blended with the mass, as not to be distinguishable by the eye. The composition of a soil, then, is to be improved, by supplying the kind of earth which it wants. Is a part of your farm too sandy? It will be improved by carting on clays, or strong loams. Is a part too clayey? It will be improved by carting on sands, or sandy loams. Your compost manure heaps too, for your sands, ought to be on a basis of clay, or strong loam. For your clays, the basis ought to be sand, or sandy loam. Then, your manures, while they enrich, will improve the composition of your soil. You will unite the adventitious, and permanent improvement, in the same operation. The great difficulty is, to effect the intimate union of the superadded earth, with the soil to be improved. In this consists the whole art of the improvement. One error, to be guarded against, is, the attempting to do too much, at once. The incorporation is only to be effected, by moderate dressings, from year to year. Time, and nature, do this work for man, which he cannot do, at once, for himself. Another error, to be avoided, is that of burying the superadded earth, in the soil. It is to be applied, as a top-dressing, and left to work its own way into an incorporation with the soil; and it is found better applied, on a surface of turf, than on the bare mould.

The improvement of the composition of the soil has been, for a long time, and still is, an object of much attention, in England, and the effects, there, have been wonderfully great. The most productive agricultural district, now in England, that, which exhibits the most perfect model of their most perfect agriculture, that, which gives the largest returns to the same capital in labour and cultivation, was once, and not long ago, a mere sand; kept for sheep-walks and rabbit-warrens, and rented for a trifle. I allude to a considerable portion of the county of Norfolk. Beneath this sand, which was about four feet deep, was found a sub-soil of clay, of great depth. This was brought to the surface and a soil made, which is now the pride of the agriculture of England. It is amidst those high scenes of cultivation, on his own estates, where the celebrated Coke displays his splendid hospitality at his famous sheep-shearings—it is there, the agriculture of England pays annual homage to its patron and benefactor—it is there, the American too, meets a welcome, and finds his, and his country's friend, in his hospitable host. This species of improvement has extended itself all over England, and of late, its theory, as well as the art, has attracted very particular attention. It was one principal object of the lectures of Sir Humphrey Davy.

Our cleared lands are too much cleared; too bare of trees. The land suffers, the crop suffers, the stock suffers, in consequence. Plantation is wanted. And it is an improvement so attainable, it may be made so profitable, it would tend so much to embellish our farms, that it is deserving of attention, independently of its effect, in adding to the fertility of the soil, which, however, is such, as to be alone a sufficient recommendation.

Why enclosure and shelter of fields, of moderate extent, should augment their productive powers, it

may be difficult to tell exactly. But that it has this effect, and to a striking degree, I think is certain. Whether it be, that the effluvia of the earth is more confined—is less liable to dissipation and dispersion, or whether it be, that the atmosphere, being more confined, makes larger deposits, or whether, both causes operate, or whether some other cause operates—the effect is unquestionable. We see it in every instance—even the shelter of a bush, or a whiff of straw, we see, has this effect. This effect is visible from the shelter, even of our common stone-walls; at least, within the influence of that shelter. But when these walls are lined with trees, it is more conspicuous. We see then, that vegetation is earlier, is later, is stronger, for the shelter; and that its friendly influence is felt on every kind of crop.

The same effect has been verified, and is attested, by every new enclosure made from the downs in England. These, you know, are vast extended commons, lying bare to the heavens. You know, also, that enclosure in England, is at the same time shelter—that their enclosures are live-hedges. This effect, there, is so great, as to strike the most careless observer, and it is frequently referred to, by their writers, in proof of the fertilizing effect of enclosure. Whether for fruit, fuel or timber, or all three, what a resource this might be made to every farm;—a resource, too, that would take nothing from the produce of the meadow, or the corn-field, or the pasture, but would add to that of all three; and a resource, so cheaply to be acquired, that it is within the command of every farmer!

We come now, to the adventitious improvements, requiring to be renewed from time to time. The great article of manure is first and chief. Cultivation is a great subsidiary to this, but cannot be made a complete substitute. The perfection of agriculture results from the combination of both.

But, manure—manure, is the one thing needful. This is the true labour-saving machinery of production. It does the work of many hands. It does the work no hands can do ; gives you a choice of your kinds of crops ; gives you the richest, the most valuable, and most profitable, instead of such inferior ones only, as the land will otherwise bear. It will give you the wheat, and the barley-crop ;—any kind of green crop of esculent vegetables ; the hemp, the flax, the tobacco crop ; the richest grasses, the lucern, and clovers ; the pistil, the madder, and other plants, for the manufacturer ; the poppy, the saffron, the licorice, the rhubarb, and other plants, for the druggist. Let this object, then, the accumulation of manures, be your constant study and effort, your thought by day and by night ; for here is to be displayed the test of good farming and of the good farmer. It is evident, generally speaking, that it will not do to rely on collateral resources, for a requisite supply. In particular situations, these are great, and may be found sufficient. Such are situations, in the neighbourhood of large towns, of distilleries, of the sea-shore, and some others. Such are situations, in which the plaster and lime will answer, and near to water carriage. In these situations, these collateral resources ought never to be neglected. They ought to be taken hold of eagerly. The whole benefit of them should be secured and fully realized. But the great resource of our farms must be their internal means of supply, and fortunately, these may be made sufficient. Yes, you have the means, within your farms, of raising them to the fertility of gardens ; not at once, but progressively, step by step, and by advances more and more rapid, as you proceed. You are to take care, however, not to lose by your improvidence, what you gain by your industry ; and, in your eagerness after immediate profits, waste the fund of your future profit, and exhaust your

land, as fast as you enrich it. Be satisfied with your golden egg, day after day; nor in your avarice to get at her treasure, at once, kill your hen that lays it. This work is to be begun, by the stock you have, and can keep, on your farm. They are to be your manufacturers of manure, and if supplied with sufficient material, will manufacture a great deal; at least ten times the quantity, that is ordinarily made from them. And this manure will be equal in quality, as well as so much augmented in quantity. It may be made, too, to communicate an improvement to the soil, which never will be lost, whilst it communicates to the growing crop the nourishment it requires, and on which its virtue is expended. The material is to be, earth of any kind, and litter of every kind. It is a mistake to suppose, that only turf or mould are good for this purpose. Turf and mould, to be sure, are best—they are already, almost manures. But any earth will answer the purpose well enough. For litter, nothing is amiss: straw, stubble, roots of corn-stalks, weeds, coarse-grass, leaves, small brush; in a word, every thing that is capable of rotting and fermenting. These are to make the beds, on which the stock are to make their deposits, and to be kept; and every kind of stock—horses, cattle, sheep, swine, and even poultry, are to be furnished with these beds. Supplies of material are to be prepared for the whole season of winter-keeping of stock. This will lay the foundation of another system, which will add to the effect of this; that is, the system of soiling a part of your stock; your horses and your working oxen, partially; your cows, your swine, partially. By soiling is meant stall-feeding with mown grasses. Particular kinds of grass are to be cultivated for this purpose, as the lucern, the saintfoin, the clovers, the winter and summer vetches; and we may add Indian corn, sown broad-cast. Some advocate this system of

soil-feeding, exclusively, without any pasturing at all, and for the whole stock, and it is easy to see what wonderful means of accumulating manure this system would give. Of the exclusive system, however, I doubt the expediency, in this country. But a system, combined of soiling and pasturage, as it might be pursued, I think, would be a very great improvement upon our present system—soiling of our working cattle, in the season of work, and soiling of our cows, combined with pasturage. I think it certain, there would be much economy and profit in this. There cannot be any doubt of its being a very great resource, for the manufacture of manure. Then this important work, could be carried on, through the summer season, as well as through the winter, and to much greater effect, as manure is then much more rapidly made. This will lay the foundation of another system still, which will add yet more to the effect of the other two. I mean the system of raising field crops of esculent vegetables ; the cabbage, the turnip, carrot, and the parsnip. Soiling would enable you to keep more stock ; but green crops, would enable you to double it. And the profits would be more than double—to be realized from the milk, the butter and cheese, from your cows ; but, more especially, in rearing of young stock for your farms, and in fattening the old, for the market ; and on sheep farms, still more especially, in the management of your sheep. But with a view to manure, consider what an addition it would give to your means of making it ! Who can doubt the sufficiency of these means to accomplish the important end of raising your farms, progressively, to the highest state of fertility—means which you all have, or may command within yourselves ? But you have other means, even more within yourselves, and equally efficacious. These are the ashes which you may make from burnt earth, burnt in a smothered fire.

These ashes are a very powerful manure. On all dry soils, their effect on vegetation is very striking. It is still more visible on the seed than in the plant. No manure tends more to fill out the ear, and enlarge the seed of every species of grain. They are too, a very cheap manure. Land may be manured with them, at one third of the cost of manuring with stable manure. They are equally lasting, in effect ; and the resource on every farm, is unlimited. It is a new improvement, and none in modern husbandry, is more valuable. Paring and burning is not new. It is as old as the Romans. But this mode is new, and it is this mode, which makes it so valuable.

This improvement has spread over Ireland, and with great effect. Her labouring population are generally familiar with the process. The late emigrants from that class, to this country, have brought with them the knowledge, and are ready to assist us in introducing the practice. Indeed, the merit of this happy discovery belongs to Ireland; Ireland, the land of genius of every kind, and alas, the land too, of misfortunes of the worst kind—the miseries of a foreign and unfeeling domination! There Nature has seemed as if kindly desirous to indemnify her children, by the profusion of her gifts, for the oppressions they have been doomed to suffer, from the hand of man—by genius, whose eloquence, while it commands the admiration of a sympathizing world, has procured for its unfortunate country, some retribution—which has nailed that guilty hand to a column that will perpetuate its cruel infamy, to all future ages, and in every age, call forth the execrations of mankind.

I have said, that cultivation, though subsidiary to, could not be made a complete substitute for manure. Tull, one of the most ingenious and original writers we have, though we can hardly be said to have him, for his works are not to be found

in this country, inundated as it is, with compilations from much inferior writers; Tull conceived, that cultivation might be made a complete substitute for manure; that the same field might be made to give the same kind of crop, year after year, without end, and without diminution. He made many experiments to verify his theory, and he satisfied himself, that he had proved it. He was too sanguine; and finding his principle an important one, he overrated its power, as is very natural to original authors of new theories. But his experiments, certainly did prove, the very great efficiency of cultivation in ameliorating the soil.

To move the soil, to the depth it will bear—to move it frequently—to make it fine to that depth, and to keep it so, has a great effect on the growing crop; little less, than a good dressing of manure. And on the soil, it has a more lasting effect than the manure itself. Besides it gives the manure a much greater effect, than it would otherwise have; so that as was before observed, the perfection of agriculture results from the combination of manure, with tillage in perfection.

Tillage increases both the heat and the moisture of the soil—the radical heat and moisture, those great nursing elements of all vegetation. Whether it be, by promoting the effluvia of the earth, which is known to be great, or by promoting the absorption of the deposits of the atmosphere, which are also known to be great, or by both; or whether, some other cause or causes operate, the effect is certain. The increase of heat in the soil by tillage, has been ascertained by chemical experiments, accurately made; and the increase of moisture by tillage, is verified by constant observation. Fallowed grounds are always found more moist than the adjoining grounds, which have not been ploughed, though in the same field, and lying in alternate strips of ploughed and unploughed

ground. Drought is alleviated by tillage. Tillage may be made almost a complete remedy against it. In the universal failure of the Indian-corn crop in the neighbourhood of Bordeaux, in consequence of a long and severe drought, a tenant of the famous Montesquieu, raised a full crop. Montesquieu inquired, how he had contrived to make himself an exception to all his neighbours. He replied, by means of frequent tillage. He had in fact ploughed and dressed his corn-fields, eleven times!

The expense of this more perfect tillage would be reimbursed, with great interest, in the crops under cultivation. It would be reimbursed, again and again, in the greater abundance of the crops to follow, not under cultivation, and in the amelioration it would give to the soil itself. Can we doubt of this ameliorating effect, when we see that the barley, the oats and the grass, that follow Indian corn and potatoes, are always better, in proportion to the degree of tillage, that has been given to the cultivated crops? Tillage is the penalty imposed on man, and by paying the penalty, he redeems the earth from its curse; cursed, for his sake, "to bring forth thorns and thistles." He restores it to its primeval state—when "there went up a mist from the earth, that watered the whole face of the ground," to bring forth "every plant of the field, and every herb of the field." He regains his earthly paradise.

The study, which, of late, has occupied so many minds, to improve the means to this end—the perfecting of tillage, to make them less expensive, and more effectual, by new and better implements of husbandry, by new and better modes of culture, by lessening the labour of the hand, and extending that of the horse and the ox, has produced, and is producing, valuable effects. It is deserving of every encouragement and patronage, for it is adding a new value to the farm, and giving a new profit to the farmer.

These means, which will enable you to give fertility to your lands, will be abundant, and more than sufficient to continue that fertility, and to keep it improving, especially, if combined, as it ought to be, with a proper rotation of crops. Rotation of crops is an important article in husbandry. It is one of its modern improvements. But its detail would be too large a theme for this occasion, as the rotation must vary with the situation and circumstances. Its principle, however, is, to follow an exhausting crop with one that is ameliorating. It is well known that different crops have these different effects.—Its uses are, to combine the advantage of a fallow with the profit of a crop, at the same time—to supply the fertility, which has been lost to land by the nature of one crop, by a crop of a different nature, and which restores its fertility; and, by diversifying your crop, to avail yourself of all the various kinds of vegetable food, which the soil is calculated to give. It is well known, that different plants feed on different elements, or in different proportions, on the same element.

We come, now, to the subject of crops. There are certain limitations to the kinds of plants to be cultivated. Some are imposed by climate, some by the nature of the soil, but more by its condition. Poverty of soil is itself an interdict to the cultivation of many kinds. It imposes a greater limitation than any other circumstance of situation, in the choice of crop. It places the crop too, more at the mercy of the season, and more in the power of accident, from blight, from mildew, and from insects. But we are to suppose this interdict taken off, that the farm is got into fertility by the means already indicated, or by some of them, or by other means, and kept in that state, or improving; that all the range is given to cultivation, which the climate and the nature of the soil will admit.

We have not, in cultivation, all the kinds of plants adapted to our situations;—far from it. The circle might be much enlarged, and very advantageously. We are still more deficient in the valuable varieties of each kind, than in the kinds themselves. Generally, we have run upon a few certain kinds only, and on a particular sort of each kind. For our deficiency in varieties, take for example, the oat. The oat we have, is a light, meagre grain, and our cultivation is confined to that. It has probably degenerated from the original plant, for it is difficult to say of what known species it is; and poor as it is, it is nevertheless liable to blast, in some parts of the State. Now, there are five or six distinct, known species; each one more valuable than the one we have; better fitted to our soils and situations—some proper for warm and dry lands and some for cold and moist; some early, some late; some yielding great abundance of straw and grain; and some with little straw, yielding great weight of grain. I allude to the Poland oat, the Essex, the black, the early, and the potatoe oat, all in cultivation, in England. There are probably, other varieties of equal or greater value, in other countries. Can there be any doubt, that these varieties might be introduced here with great profit? The profits of this single improvement easily made as it is, would doubtless add thousands and thousands to this State. The source of improvement most within our reach, and the most promising as to results, is this of introducing improved varieties of cultivated plants, and improvements to be made upon that improvement. I am informed that the original cotton-plant of the southern States was a poor thing; that it was, and must have remained an unprofitable plant; that no expense of cultivation could make it otherwise. But by introducing a dif-

ferent species, the effect, we see, has been astonishing. It has produced a great revolution in their agriculture; the greatest perhaps ever known, in any country. It has opened a source of immense and inexhaustible riches to those States. There is a species of another plant, which, if introduced here, would probably do as much for us—for all New-England—for the middle and western States, as the cotton has done for the southern. I allude to the new species of flax, found at New Zealand. It is so much finer than ours, and so much more abundant, that it would become an article of general cultivation, especially, as the great expense of dew and water-rotting, and of breaking by hand, may now all be saved by the operation of machinery, recently invented for this purpose; machinery, by which more is gained in quantity, to the dressed flax, than sufficient to pay the expense of the operation. And still more especially, as the expense of hand-spinning, on the single spindle, may now be mostly saved, by spinning frames of many spindles, moved by hand or water, as in the working of cotton. The spinning of flax besides, becomes much more expeditious, than that of cotton, it is said, as six to one. Can there be any doubt then, that this new species of flax, combined with this newly invented machinery, would lay the foundation of linen manufactures, fully as important as the cotton? Linen fabricks might be made at a less expense than cotton, and sold at cheaper rates. They would then successfully compete with the cotton, and probably command a readier market. There is no kind of plant which we cultivate, or can cultivate, of which the different varieties would not be an important acquisition. There is no improvement which is begun with so little expense. It requires merely the cost of the seed and the cost of the transportation, and from

whatever part of the world it come, this can never be great.

Now for the improvements, to be made upon this improvement. Some individual plants of every variety are found to have its good qualities more eminently than the rest—earlier maturity, more prolifick productiveness, more abundance, both in the plant and the produce ; more nutritious matter, a better relish. These qualities are transmissible. The seed produces a plant like the parent plant. A race is thus propagated, superiour to the race to which it belongs. This race may be improved upon again, by a repetition of the same process ; and in this way, improvement may be added to improvement, progressively, and almost indefinitely. Thus Mr. Cooper, of New Jersey, raised up a race of Indian corn, much more prolifick in ears, and much earlier in ripening, than was the kind he began with. He did the same thing with potatoes and other plants. He proved the notion to be altogether erroneous, that seed necessarily degenerates, if continued in the same place. Some kinds of seeds will certainly degenerate, if no attention be paid to the principle of improvement. A change of seed, from place to place, is then necessary ; and where every attention is paid to the principle of improvement, the change is useful, if equal attention has been paid to it, in both places. This principle may be applied to the improvement of every species of crop, to all our grains, all our grasses, all our esculent roots. The improvement, in this case, is still more easily to be effected, than in the other. It may be begun without any expense. All that it requires is, attention in the saving of seed, directed by the principle I have mentioned. This is in a manner a new field, not only here, but elsewhere. What has been done in it, has been attended with such promising results, that there is every encourage-

ment to proceed. It is a plan, full of high and rational hopes. The principle I have here stated, is not new. The propagating of improved races from particular individuals, has been adopted, with regard to animals, with complete success. Bakewell began it, with regard to cattle, and he kept his secret, till he had secured his fortune. The same principle has since been extended to every kind of stock, and the improvement has been such, that the stock is frequently worth more than the fee-simple of the farm by which it is kept; and that too, where the farm, as in England, is enormously great. We have made a beginning in this improvement, and here it may be more rapid than in England, as we have, and can have, breeders from their improved races, and all our own stock to select from, for the same purpose. This is an art by itself, though a simple one. When butcher's meat is the object, it is the art of selecting the animal whose disposition is to fatten—which acquires the most flesh and the most rapidly from the least food, which is so framed, that the most valuable parts for meat, bear the greatest proportion to parts the least valuable; or where the object is milk—to select the cow whose disposition is such, that her food runs to milk, rather than to flesh, and runs to milk, in the greatest abundance. The meat, the milk, the butter, and the cheese, from the same food, and the same number of animals, is to be prodigiously augmented in this way. A different principle of improvement applies to sheep, when the fleece is the object, and to the horse, always. In these cases, however, the principle is too well known to need explanation. But to return to the subject of crops.

Some kinds of plants are more valuable than others, but they may not be so profitable. The difference, in quantity, may more than make up for difference, in quality. It is then, when the nature

of the circumstances of the situation are followed, not forced, that the success is greatest and most certain. It is then that Nature does the most for man, with the least assistance from him. This rule applies to stock, as well as to plants. Both are most profitable, when best adapted to the situation. Almost all farms admit of every kind of crop to advantage, though not in the same proportions, but varying in proportion, as the different soils vary; and the same remark is applicable to stock. The prevailing crop, and the prevailing stock, should be what the farm is best calculated to carry. A farm throughout, that is, best fitted for the convertible husbandry—convertible from grass to grain, and from grain to grass, is the most profitable farm; and hence the value of all those means by which the farm is brought into this desirable state. But, after all, it will generally possess some predominating power, and this should govern, as to the prevailing crop, or rotation of crops. Hence too, the great advantage of the multiplying of plants to be cultivated, and of multiplying their varieties. This increases the means of deriving the greatest possible profit from every species of soil, by adapting every species to the plant it is best fitted to produce. The chalk soils of England were unprofitable in grass; as much so as any of our lightest lands, before the introduction of saintfoin. Now, those soils make some of their best upland meadows. They now afford to pay a large rent to the landlord, whilst the tenant grows rich upon them. But formerly the rent was trifling, and yet it was found to impoverish the tenant. The produce upon them, in this grass, is more than twenty fold what they would give in any other. The saintfoin is made to give two or three crops, annually, and abundant crops. It is the sweetest and most nutritious of all grasses. Horses fatten upon the hay made of it, without grain. It is the finest of

all green food for milch cows, to make abundance of milk, and to make butter and cheese of the finest quality; and for sheep, no grass is equal to it. It is a perennial plant, and lasts for years in the ground in full vigour; and all that time will ameliorate the soil, and so rapidly, that when broken up, it requires no other preparation for carrying any crop whatever, and greater than any other preparation would give. What an acquisition this plant would be to many situations in this State! What valuable meadows it would make, where now the land, when in meadow, is scarcely worth mowing; where the scanty herbage is as poor in quality, as it is small in quantity, and when in pasture, scarcely affords a miserable living to a few miserable sheep! This plant flourishes in the driest soils, dry, to a great depth, and unretentive of moisture; and will flourish in no other. The more these lands indeed, are enriched, by manure and tillage, the better for the plant; though it flourishes without this aid. But moisture, the great defect of the situations alluded to, it does not require. Some have supposed, that our winters would prove too severe for it; but this I have reason to believe is a mistake. I think it as hardy as the red clover, as little liable to be winter-killed; for the past winter, which killed so much of that clover, did not affect at all the saintfoin plants, standing in my garden, and in no way protected from the operation of the frost. At any rate, the experiment is worth making, and should be fairly made. Too often things are tried and condemned upon insufficient trials. If it succeed, the gain will be great; the loss cannot be serious, if it fail, of which, however, I apprehend no danger, if good seed be obtained, and the experiment be fairly made.

But the cultivation, which may be the most universal of any, of which every farm in a state of fer-

tility, admits ; which is the most certain to be attended with great and positive profits, is the cultivation of green crops, in the field way. There is such a variety in the nature of those crops, that some of them are suited to the nature of every farm, be it what it may. For the strong, clayey, and moist lands, there is the cabbage, and its various tribes. There is the rape too, a plant unknown in this country, but which, in England, is the one, which, of all their crops, is considered, on the whole, as the most profitable ; and which, there is every reason to believe, may be cultivated here, with equal profit. There is the beet and its different species, and their varieties. For the dry lands, the sands, and sandy loams, there is the carrot, the parsnip, the turnip, and its numerous sorts : whilst every kind of green crop may be grown on all lands of a good composition, with almost equal advantage. The labour of field culture will not exceed that of Indian corn ; but whatever the labour may be, it is most abundantly rewarded. Thirty tons of cabbage to an acre, is not an uncommon crop. More than double that, has been obtained, and other green crops hold nearly in proportion. Then you have the market for it, all within yourself, on your own farm. Every pound of it may be fed out with profit to your stock. Your stock may be more than double what it now is, may be better kept than it now is. It will give you the means of fattening much more of it, for the butcher and the market, and of vastly increasing every species of profit, from every use to be made of stock, especially, if combined with a system of soiling. One acre of lucerne will soil-feed four working horses, thro' the season, and keep them in good heart. Lucerne is a plant, which stands our winters perfectly well. It comes early, grows rapidly, and yields abundantly. It is ready for the scythe, early in May, and may be mowed, three or four times in the season. If made

into hay, it will yield more than any other cultivated grass in the world, and hay of a most excellent quality. In England, it is found difficult to make it into hay, and it is, there, principally cultivated for soiling. But, in this country, dry and hot as our climate is, there would be no difficulty experienced. For soiling, besides lucerne, sainfoin should be cultivated, and the vetch, both winter and summer. These plants are all unknown here, but may all be ventured upon, with certainty of success. These plants, with the grasses we cultivate, would enable the farmer to adopt the system with convenience, and to any extent, that on trial, he should approve. Oats are in some parts of this State, always cut green and made into hay, as the grain is apt to blast. But the vetch would be found much superiour for this purpose. It makes most excellent fodder, and in much greater abundance, than the oat. Green crops and soiling, give such a command of manure, that nothing can equal that system for the progressive and rapid improvement of the productive powers of the farm; and if the system had no other recommendation, this alone would be sufficient for its adoption. But it is, independently, and in itself, much the most profitable system. It is the system of England, and what has contributed most essentially, to the wonderful success of her agriculture. The turnip laid the foundation of it. Before the transfer of that vegetable, from the kitchen garden to the field, from being a mere esculent root of the table for man, to becoming an extended resource of food, for his flocks and his herds, which naturally connected itself with the field culture of every other garden vegetable of equal promise; all which has taken place within the memory of many, now living there;—before this innovation, the agriculture of England was comparatively low, very little, if in any thing, in advance of our own. The stock of their soil was not in a greater proportion of one to

the other. Now, nothing appears so wonderful to us, and would be so incredible, as the proportion of their stock to their soil, were not the accounts so well attested.

As nothing is more delicious, so nothing is more wholesome, than well ripened fruit. It is its deliciousness, that makes its danger. It tempts to excess in eating, and to eating it, unripe. It is a delicacy of Nature, and prepared by Nature's own hand; and her art is so exquisite, that her children are tempted to become epicures at her table. But taken in moderation, she makes it as wholesome to the constitution, as it is delicious to the palate. Sir William Temple could say from experience, that the season of fruit was always the season of health, with his family. Fruit seems to be the favourite food of Nature. All animals devour it with eagerness. It is the longing of every appetite. The avidity for it is such, that almost all restraints are broken through, to obtain it. Nothing but its plenty, can give it security in promiscuous cultivation. There is no luxury of the unadulterated palate so much coveted; and in places where Nature has denied the production, no cost in forcing it is considered too great. The price reimburses the cost with profit. Those who are able and disposed to spend money on luxuries, will have it, be the cost what it may, and in preference to all other luxuries. All classes eagerly buy it, when it is so plentiful as to be brought down to the level of the means of all. Its power of pleasing the palate is such as to give it a commanding influence over the imagination. No poet ever undertook to paint a delightful situation, an earthly paradise, without filling it with fruit trees; nor could he succeed, if he did. This is what constituted the human charm of the garden of Eden, "where every tree was made to grow that

was pleasant to the eye, and good for food." In the gardens of the Hesperides, it is the fruit that captivates the imagination of the reader ; and in the half magical garden of Alcinous, it is not the marble fountain, which takes hold of his fancy ; it is the reddening apple, ripening into gold ; it is the bending vine, with the clustering grape, shining in the sun. Besides the unfailing market, that may be expected for the fruit, there is the farm, where so much is wanted for family consumption, where it contributes so much to the pleasure of the family table, and where it is manufactured into so many liquors ; the cider, the perry, the wines, the ardent spirits, the vinegar, both for family consumption, and the market ; so that a few acres of fruit become a source of more revenue, than the whole farm besides. Nothing, in agriculture, gives so much value to the land it occupies, as a good fruit tree. In many instances, it adds many hundred per cent. to that value. The original cost is a mere nothing, even if the young tree be purchased. But if it be raised, and formed, as it may be, a little labour procures it. The time, it requires to come to a state of bearing, ought to be no objection ; for in the mean time the land may be cropped, and the tree will be the better for the tillage. Its growth and maturity will be perceptibly hastened. The new value begins with its plantation, and grows with its growth. That one may plant the tree, and that another, to come after him, may enjoy the fruit, ought to occasion no hesitation. Every one hopes to leave value to his children or relations. The shape is of no material consequence, whether it be in a growing tree, or in one, grown. If at the verge of life he plant—he adds so much to the value of the land, for the benefit of his heir. But these objections, if felt at all, can be felt only, as to the apple and the pear, which come late, but last long. As to all other fruits, he that plants at almost any age, may hope

to enjoy, their maturity is so early. Every thing depends upon care, enlightened care, in securing, training, and forming the tree in the first place ; and then on its subsequent management. It is this which is to ensure its vigour and constant fertility. Here then opens upon us a great field for improvement ; no less extensive than the improvement of plants and animals, and depending on the same principle, viz. propagation from improved individuals of the variety that is cultivated. Some fruit trees are naturally much more fruitful than others of the same kind, placed in similar circumstances, and yield fruit of a better quality. The races, propagated from these, will furnish improved individuals, which may be founders of races, still more improved.* This improvement depends also, on another principle, viz. the peculiar cultivation, which is adapted to its particular laws of vegetation and fructification. The vigour and fertility of the tree must necessarily be greatly promoted by a cultivation of this kind. Here too, is an art, which is wanting in this country, and is but imperfectly understood, in any. The master of this art would have his fortune in his own hands. Let this consideration animate us to the pursuit of so important an acquisition.

We can have every kind of fruit in abundance, except the tropical, by the favour of our soil and our seasons, and it is pleasing to witness so many among us, availing themselves of our natural advantages, and the success which attends their efforts. There is, however, the pear, for perry, which may be made a profitable addition to our orcharding. Perry, well manufactured, is a more delicate liquor, and of higher market value, than cider ; very little if

* A nursery established on this principle, connected with the plantation of standard trees, I have no doubt would lead to the most important improvements ; and most probably make the fortune of the adventurer.

any thing inferiour to many wines. The tree too is a better and more certain bearer than the apple tree ; hardier, longer lived, requiring less favour from the soil, and less assistance from nurture. But the fruit, which I flatter myself promises the greatest addition to the profits of the farmer, is the grape. I mean the vineyard-grape, for wine. It has been tried in the garden, with perfect success ; and I cannot perceive, why it should not succeed, in the field, in favourable situations. We have season enough to mature the fruit. Indeed it ripens here, earlier than it does in some parts of France, where it is cultivated for wine. It may require protection against the frost of some of our winters ; and so it does, in Germany. But this protection is easily given, and, at little expense.—It is only laying the vine to the ground and turning on it a furrow. Under a particular management, it is more certain to give a crop, than any delicate fruit we have, and a more abundant crop. It is soon raised and soon produces fruit ; almost as soon as the currant. It becomes more and more prolific, as it advances in age : and is as durable as the apple orchard. Certain kinds of grape also keep as long, as the most of our winter apples. Then, when we consider how very valuable it is as a fruit for the market, for the common table, and for the manufacture of wines and brandies, surely, trial after trial ought to be made, before we despair of acquiring this addition to our fruit-plantations. If these trials be made, I have no doubt, you will see the flourishing vineyard, in many parts of the State,

“ Bent with the ponderous harvest of its vines”—
and the wine press loaded

“ With the purple product of the autumnal year.”

You may have been ready to ask me, how agriculture is to attain this pitch of prosperity, without constantly accruing profits ? How these profits are to accrue without a constant demand ? And is that

demand to be expected? In answering these questions I must take a wide circuit; but its very interesting nature, especially to all who feel an interest in agriculture, I hope will justify it, and obtain your indulgence.

The great interest of the United States is their agriculture. Every other interest dwindles into nothing, in the comparison; every other is as a rivulet compared to the ocean. Their resource in their lands is literally of boundless extent, or if it may be said to admit of calculation, it certainly is beyond all distinct comprehension. The imagination is baffled in its attempt to take it in, as a whole, and can do it only, by parts, and in succession, thro' a long series. If this resource should be developed, as fully as it may be, it will make this nation, the most powerful in means, of any nation, now existing on the earth, or that the sun ever beheld on the earth. There is nothing, which would not be within the compass of those means; nothing, either for the good or glory of the country, which might not be effected with ease, and without being felt at all as a burthen by a single citizen—nothing, for external security, and impressing the world with fears of our force; nothing for preventing wrongs, or in case of wrongs, for extorting reparation, by means of those fears; nothing, for making foreign wars impossible by making them hopeless; nothing, for internal prosperity, happiness, or splendour—no facilities for intercourse, by roads and canals; no securities to that intercourse; no facilities for developing the faculties of the country in every pursuit; no facilities for diffusing knowledge in science, and skill in arts; no facilities for developing and perfecting all the powers of the human mind, and of filling and adorning the country with their united achievements. There would be no failure of means for effecting any, and all of these objects,

and many more ; nor would they press upon the country with the weight of a feather.

How is this full development of this boundless resource to be effected ?

Simply, by means of an adequate market. An adequate market would produce the development with a rapidity, which would make it appear like a miracle. But where is this adequate market to be found ? At present, no where. Not in our own country, for we already produce an immense surplus over our own wants. Not in foreign countries, for that surplus has glutted every foreign market in the world. The demand of foreign countries too, is growing less and less, from the increasing growth of their own internal supplies, and our surplus is daily becoming greater, from our increasing numbers and cultivation. Besides, monopoly of the home market and the exclusion of foreigners, is the general policy of foreign nations, and is departed from only in cases of necessity. If our export trade be now a losing trade, what will it be, when that surplus is much greater than it now is, and foreign demand much less, than it now is ? Add to all this, that a foreign market is no market at all, to the greatest portion of our produce. It is a market only to that portion, which is within such a distance of water carriage as will pay the land transportation, and leave enough to reimburse the cost of production, with some profit. Is then this adequate market to be despaired of ? By no means. Tho' no where now to be found, it is in our power to create it. How ? By the introduction, and establishment of manufactures of all kinds, and to every practicable extent. This would give that adequate market, that accessible market, to every district of the agriculture of our country. It would furnish the buyer and the means to buy, to all our produce ! Let us suppose this done, and then attend to its necessary effect. Let us suppose,

manufactures diffused all over the country, wherever Nature has given the means of power, by water or coal, and established in every town and village, with such aids as machinery would give. Let us suppose, two millions of people occupied in these various manufactures. Consider, how immense the consumption must be of two millions of people, possessing the means of making payment. Consider again, that the raw material of many of the most important of these manufactures comes from the land; that the means of working every raw material are principally derived from it; that these means are new products, to be added to the list of our productions. Consider again, how many labourers, not employed in manufactures, must be employed by them—labourers, who cease to be producers, and become consumers, with means of making payment. Consider too, that vast body of middle-men, employed in effecting exchanges, to be added to the great body of profitable consumers. To this immense market, thus to be created, add the market we now have, both foreign and domestick. Can there be any doubt of its giving the fullest scope to all the energies, which agriculture could exert? The effect would be seen every where. Scenes of cultivation of immeasurable extent would be opened all over our country and in every direction. Not confined to the banks of our rivers and the neighbourhood of our sea-ports, they would stretch over every plain, occupy every valley, and rise to the summit of every mountain. Instead of the howling wolf, and lurking savage, we should hear our flocks, bleating on ten thousand, thousand hills, and our herds lowing in the meads below.

These manufactures, besides this direct effect upon agriculture, would have another, indirectly, fully as important, by means of the internal trade they would create; a trade, of much more value

than any foreign trade can possibly be. First, its amount would be greater, almost beyond comparison. The foreign commerce of England, great as it is, is to her internal commerce only as one to fifteen. Then, the domestick trade is much more profitable than the foreign. The profits all centre at home. They are not divided with the foreign country, as they must be, in the foreign trade. Besides, the exchanges are much more rapidly made. Consider a new trade created, fifteen times at least the amount of our foreign trade, and of more than fifteen times its value, and having a much more direct and beneficial influence on agriculture, in proportion to its value ; and a trade, in which capital may be employed by the merchant, with more certainty of accumulation, than he now employs it, in foreign adventures. Add now, the indirect to the direct effect of manufactures upon our agriculture. Can the description of that combined effect, which has been given, be thought extravagant—a fancy-picture, which the future fact would not verify ? Consider, that such has been precisely the combined effect of manufactures, and internal trade, upon the agriculture of England ; in spite too of the counteracting effect of the enormous taxes, which now lie with an intolerable weight upon that interest. Take away the support of their manufactures and internal trade, and her agriculture would be crushed, at once, by the weight of those taxes, and all England would become a mere hunting-ground.

But the effect of these manufactures would not stop here. Paradoxical as it may seem, they would augment our foreign trade and give it more prosperity.

So much of our foreign trade as consists in the importation of manufactures, would be lopped off, or materially diminished. But so far as our navigation interest is concerned, the effect of this would

be inconsiderable. A few vessels are sufficient for all these importations. The seamen employed are few, the freight earned is small. As to the capital concerned, no doubt *that* is large.

But this body of domestick manufactures would itself create an import trade of great importance—imports of articles for their uses, requiring more shipping, employing more seamen, paying more freight, though probably investing less capital, than the present import trade, in manufactures. The great enlargement, however, would arise, from the increase of our export trade. Here would be new articles of export of great value and great effect, equalling, and probably far exceeding, the whole value and effect of our present exports. The proceeds would return in one shape or another, and therefore the import trade itself would increase in proportion.

Such would be the effect of manufactures upon the great interest of agriculture in the first place ; and then upon commerce, internal and external.

The objections to them appear to me to weigh, as nothing, in the scale, against these great advantages. It is said, that the country must then pay for its manufactures, more than it now pays. No doubt, it must for a time. It is the price of the objects to be obtained. Now, what sort of comparison is there between that price, and the value of these objects ? It is said, again, that there would then be a great falling off from the national revenue, from trade. This is by no means certain ;—the probability is, otherwise. But suppose it to be the fact. How easily would the deficiency be supplied from the increased ability of the country ! How weak it would be to forego the means of this increase for the sake of paying, indirectly, what, after all, we must pay ! To refuse infinite wealth, for the sake of a particular mode of paying a tax ! It maybe said also, that this plan is not agreeable to

the most approved theory of political economists. Be it so. I consider that theory, however true in the abstract, perfectly delusive as a practical plan, under the existing circumstances of the commercial world. It requires two previous conditions, which will not, or cannot take place. First, that all nations agree to adopt it. Then, that all nations stand on a level, as to capital, knowledge and skill. Starting together on this footing of equality, it would, doubtless, be best for all to leave industry, enterprize, and trade, to themselves, to individual direction, without any interference on the part of government. But the long established systems of monopoly and exclusion, and their effect in the unequal accumulation of capital, knowledge, and skill, have begotten the absolute necessity of similar systems.

But, how are these manufactures to be acquired? By adopting a national system of political economy, sufficient to produce this result. It must afford so much encouragement, how much soever that may be, as will have the effect to introduce, to establish, and extend them so as to be commensurate to all the wants of our whole country, and to all the foreign demand, that may exist for them in any part of the world. This is a practicable thing, and it would not be difficult to devise the system that would with certainty produce this result. And by adopting, also, as subsidiary thereto, such a national system of internal improvements, by roads and canals, as would give all the facilities to internal intercourse, of which the country is susceptible. Unfortunately, some constitutional scruples have been entertained on this head, which have operated as temporary obstacles to the adoption of such a system. It is unfortunate, I say, as this is one of the most vital concerns of this country. But I think, the obstacle must be temporary, and that the good citizens of the United

States will not long suffer such an interest to be sacrificed to a scruple, which really has no warrant in the constitution. The constitution commits our internal commerce to the charge of Congress as expressly, as it does, our external. The language is almost identical, as to both. Roads and canals are necessary, in the strictest sense of the word, necessary to internal trade. Light-houses, are not so strictly necessary to our foreign commerce. But, at any rate, can there be any doubt of their being the proper means to the end proposed by the constitution; to the end intended, and expected to be accomplished, under it; to the end, which all our citizens have such a vital interest in seeing accomplished, namely, the regulation of our internal trade, in the most beneficial manner? Besides, the system of internal improvements is full of good in other respects without any alloy of possible evil, in any. It will give perfection to our means of defence, and what is of more consequence, perfection to our Union. This is the only vulnerable point of our country. That secured, as it would then be secured, there is nothing left, which humanly speaking, can arrest the advance of our national prosperity to a growth without example, and without end.

I call upon you, then, ye farmers and planters, ye who hold your own destinies in your own hands, who have but to say, and it is done, to urge upon your rulers the adoption of these great national measures. Then shall your agriculture enjoy these unfailing and convenient markets. Then shall it have these commodious channels of transportation. Then shall riches, like a flood, flow from this source. Let them consider, that your interests are identified with those of the manufacturer, and that his success is essential to your own. Let them consider, that the merchant is necessary to the prosperity of both, and both to his prosperity; that the prosperity of all three interests flows from one

common fountain ; and that nothing is more senseless or more pernicious, than the conflicts of the different partizans of these different interests, or more absurd than the jealousies. which produce them.

In recommending agriculture, as a pursuit, I have chiefly dwelt on considerations of profit ; but I cannot close, without noticing another consideration, that may have its influence too. I allude to the refined pleasures attending the pursuit, to men of refinement.

These pleasures are nearly allied to the pleasures of the fine arts. They are of a kindred nature, emotions of the same family. It is that gentle current of feeling, which makes a sense of being a sensual enjoyment; that happy feeling, which gratefully exclaims,

“ Deus nobis hæc otia fecit.”

It is this delicious sensation of existence, this waking of the soul, the characteristick effect of all the fine arts, which places their votary in that happy state, equally distant from the ennui, that makes life a burden, and the anxieties of the passions, which make life a torment. It is the kindred nature of rural pleasures, which gives to the fine arts their intense effect, when both are combined. The emotions then unite, and swell the delightful current. Both are increased, and both made more delicious, from the union—perfect architecture is beautiful any where ; even in a crowded city. But what is its effect there, compared to its effect in the same beautiful building, on the banks of a river, in the midst of a picturesque plantation of trees, overlooking boundless scenes of rich cultivation, and enlivened by all the joyous tribes of animated nature ? It is the union of these kindred emotions, which renders the beautiful forms of architecture, the Palladian bridge, the Grecian temple, the solitary column, such wonderful embellishments to ornamented grounds. It is not the statues of Pomona and Flora in the work-shop of the master-statuary ; but it is Pomona and Flora, in the garden, amidst

their own fruits and flowers, that so powerfully affect us.

The most enchanting musick is the song, when sung in concert with the song of nature, in concert with the low but transporting musick of the spheres.

Here was the birth place of Poetry. Here the poet first kindled into life. Here his flame was first lighted up, and hence he still draws that enthusiasm, which he imparts to his readers ; and no where, so powerfully, as in its native home. It was a warm, and even pious, imagination, though uninstructed, or ill instructed, placed amidst the ever-varying and affecting forms of Nature, and excited by her impulses, that peopled her scenes with invisible beings, employed by her, as her agents, in regulating the elements and the seasons, for the distribution of good to the good, and of evil to the bad. Accordingly, hymns to the gods were the first poetry. It is still, amidst those ever-varying and affecting forms of Nature, so endless in diversity, so interesting in each particular, amidst the originals of his own pictures, that the poet becomes the most delightful companion.

One of the fine arts, and the only one of modern invention, is grafted on these rural pleasures, to which it adds its own, and consummates their joint effect. I allude to the art of composing landscape pictures, by the disposition of grounds, of waters, and woods, upon the principles of beauty, of grandeur, and perspective. The effect is far beyond what it is in the power of the pencil to produce. It has all her illusions, and superadded to the charms of living and animated nature. These pictures are sketched by the hand of art, but they are finished by the hand of Nature, and finished in her own inimitable way. And when finished,

“His demum exactis, perfecto munere Divæ
Devenere locos lætos, et amœna vireta
Fortunatorum nemorum, sedesque beatas.”

“ That earth now—
Seemed like to heaven, a seat where gods might dwell,
Or wander, with delight, and love to haunt
Her sacred shades.”

These scenes, on a grand scale, are attainments only for the opulent. But for them, no expenditure of money for the gratification of taste, is to be compared with this object. How infinitely superiour one such establishment would be to all our places of fashionable resort, in the heats of summer :

“ Hic inter flumina nota,
Et fontes sacros, frigus captare opacum.”

But the same thing on a smaller scale,

“ A happy rural seat of various view”

Is within the reach of every ordinary fortune. And who would grudge a portion of that, for such a source of elegant pleasures ?

It fortunately happens too in this pursuit, that these pleasures are promoted, by what promotes the profits of the farm. The best cultivated farm is the most beautiful, as well as the most profitable. This is the farm, we visit for pleasure ; to see the luxuriant crops, the fields, rising high, with waving grain, the meadows studded thick with hay-cocks of new mown hay, the fruit trees, bending beneath their loads of ripening fruit. But think, how much greater the pleasure his harvests must give the owner, when the

“ Rural monarch of the field descries,
With silent glee, the heaps around him rise.”

Bad husbandry is as offensive to the taste, as it is injurious to the interest of the husbandman. Even the ornate farm, as the French call it, is more profitable, for being ornate. That form of plantation, by which it becomes ornate, is the best form for

fertility. The farm is made as much more productive, as it is made more beautiful. The very ornaments are the most useful improvements.

As to stock, the most valuable animals are almost uniformly found to be the most beautiful; and as to the fruit tree, the very art, by which it is made the most prolifick, is the art, by which it is made the most beautiful, in form and appearance.

Such are some of the sources of the pleasures, (many yet have not been mentioned, but let these suffice) attending this pursuit.

Let me then entreat you, ye men of wealth, and refinement, to devote some portion at least of that wealth to this pursuit! You will find it the living source of a thousand delights, and added to all others, that greatest of all delights, the delight of doing good to your country.

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