

Sixth Essay on Field-Husbandry

THE SIXTH ESSAY
ON
FIELD-HUSBANDRY,

As it is, or may be ordered in
New-England.

BY JARED ELIOT, A.M.

The Tree of the Field is Man's Life. Deut. Xx, 20.

Fruitful Trees and all Cedars, praise the Lord. Pf. cxlviii.9.

I planted me Vineyards, I made me Gardens and Orchards, and I planted Trees in them of all Kinds of Fruits. Eccl. ii, 4, 5.

NEW-HAVEN:

Printed by J. PARKER, AND COMPANY, at the POST-OFFICE, 1759.

When I first apply'd myself to the writing essays upon field husbandry, I did not expect those small tracts, calculated to our soil, meridian, and climate, would ever extend farther than to a small circle of neighbors; but, they having found the way to England, and being approved of there; and the design being encouraged by gentlemen of great worth, who were so good as to send me over a great variety of seeds, both of grass, and grain, and to favour me with their council, and valuable assistance; with such encouragement from abroad, and at home, I designed to go on, to publish an essay, on that subject, yearly; but, the war coming on, which naturally and necessarily engaged our attention, both in the dark and bright scenes of it, so as to leave but little room for any thing, but what is absolutely necessary, and especially so, for as we are all military men, as well as farmers; our circumstances being like that of the old Romans, from the plow to the war, and from the war to the plow again; there having been so many of our labouring people draughted out yearly, ever since the commencement of the war, no less than five thousand the last year, besides lesser excursions, which takes off men from their husbandry business; which, together with heavy charges consequent upon it, renders it neither safe nor prudent, to leave the old beaten paths, for new inventions, for, having neither hands nor money to spare, for the prosecution of any new schemes, or untry'd methods, I have given over writing; unless it be something that can be done in a little time, and with a very small expence, the advantage of which may be of long continuance,

and of great benefit, such as planting of fruit-trees, and other useful trees: As trees are soon planted, but take a considerable time before they come to maturity, it may be very proper, even, altho' the war yet continue, to see ourselves about it with due application. I shall begin with the Mulberry tree; as we have but few of this kind, the planting great numbers of them is a subject of great importance, and is a part of husbandry that will be much to our honour, and advantage; for the land we improve this way will become more useful and profitable to ourselves and posterity, and render us more serviceable to our mother-country, and gain their attention, esteem, and regard; as will appear by the transactions of the society established at London, for the encouragement of arts, manufactures, and commerce.

This society have offered premiums, for the encouragement of many things, very useful, both at home and in the plantations, in North-America; have pointed out Georgia, Pennsylvania, and Connecticut for the production of silk, and have offered premiums for encouragement; but this matter will stand in a much better light, and carry with it more weight, if I cite their own words; the society say:

'That the production of silk in our American colonies, being undoubtedly a proper object of encouragement, as it must tend greatly to the advantage of those colonies, and prove highly beneficial to the mother-country, by promoting a very valuable branch of its manufacture; in order to forward the fame, by such bounties as may operate in equal proportion, to the benefit of the poorest, as well as the richest planter, the society propose to give, for every pound weight of cocoons, produced in the province of Connecticut, in the year 1759, of an hard, weighty, and good substance, wherein one worm only has spun, three pence, for every pound weight of cocoons, of a weaker, lighter, spotted, or bruised quality, tho' only one worm has spun in them, two pence; for every pound of cocoons, produced in the same year, wherein two worms are interwoven, one penny.'

'N.B. These premiums will be paid under the direction of the Rev. Mr. Thomas Clop, and Dr. Jared Eliot, of Connecticut, on condition that a publick filature be established in Connecticut, under the direction of the said gentlemen, that each person bring his or her balls, or cocoons, to such publick filature.'

This generous offer, of this honourable society, (those true patriots) finds us, of this colony, not fully prepar'd by reason of the scarcity of Mulberry trees, to take all the advantage of such noble encouragement, as they and we could wish so that we must crave their patience, till we are prepar'd to reap the advantage, and more fully answer their reasonable expectation. This invitation is not to a business to which we are wholly strangers, it is not to an empty, airy, and uncountr'y'd project; for there has been something of this manufactory carried on for sundry years, and by a number of our people, in divers of our towns, by which we are assured that it is practicable.

So those who do not understand the manner of breeding and feeding silk worms, may easily attain the skill from those, who by long practice are enabled to inform them; for, indeed, that part is very easy; the winding of the balls is more difficult, but this is to be performed by those who have more skill, and who by long use, and being well furnished with proper engines and implements for that service, can do it better, and in less time. Thus, being freed from this more intricate and difficult part of the work, we may give our whole attention to the feeding the worms, till the silk balls are completed, which are then to be carried to the filature, or silk house, where the money is to be paid. This method will be very much to our advantage; for, the silk balls must be wound off in a little time after they are formed; which, if neglected

too long, the silk will not be so good, when it is manufactur'd, the threads will be uneven, as if full of small knots, nor will it appear with equal lustre and brightness, this I know by certain experience; and farther, the winding of the first crop of silk balls will be a hindrance to the raising a second stock of silk, which, I suppose, the length of our summers will well admit of: it is design'd that the next season shall determine that point, and render that certain, which, at present, is but probable. If we were furnished with a sufficient number of Mulberry trees, conveniently planted, this colony, which is so populous, might produce a vast number of silk balls. The colony of Georgia, which is so new and small, hath advanced greatly in this business, as appears by the account of the loss they sustain'd the last year; their filature, or store house for silk, unhappily taking fire, was consumed, together with a quantity of raw silk, and (if I remember right) eight thousand weight of cocoons, or silk balls. If they had hands, and trees sufficient, they might increase from eight thousand, to an hundred thousand; this is a production that may be enlarged, and carried to what height we please; and Providence favouring our labours; it may be extended in proportion to our want of returns, for goods we draw from Great-Britain.

A little ground, planted with Mulberry trees, under prudent management, would afford leaves for feeding a great number of silk worms. Capt. Meigs, in my neighbourhood, has but two trees, which are, by measure, but three feet and four inches in girth, or, as we commonly say, about a foot over, each, these two trees, he tells me, will afford leaves, without impairing or hurting the trees, to feed four thousand silk worms. That, as far as experience in little essays will enable a person to judge of greater works of the same kind, he makes no question, but that where the trees are near, one person can feed and tend one hundred thousand worms thro' to the time of winding up, which is six weeks.

The family, which I have been speaking of, have made silk many years, so far as two trees would enable them, for their own use; knowledge and experience, altho' it be of things in miniature, yet is very valuable, from which many consequences of great importance may be drawn, with a good degree of certainty.

As I have turned my thoughts on this subject of making silk, I had a fear which sat very heavy upon me, which seem'd to be an insuperable difficulty; which was, that robbing the trees of their leaves yearly, would first distemper, and finally kill the tree; and keep us in a continual round of planting and destroying, to our great discouragement. For, as there is an analogical agreement between vegetables and animals, as the faeculent matter, impurities of the blood, and other juices, which are not fit for nourishment, are cast out by the guts, or carried off by perspiration, by the lungs, and thro' the skin, from the body of man and beast; so the impurities of the sap of trees, and other plants, exude thro' the bark, and more abundantly are cast off by the leaves: if a tree become hide bound and overgrown with moss, the tree will not thrive; if the leaves of trees, or bushes, are constantly stripped off, or cropped by goats or other cattle, the plant will die. It has been found by experience, that a branch of a tree put into a retort, or large wide mouth'd bottle, and luted, or stopped up from the air, after a while, there will be found in the glass, a great deal of thick slimy ropy matter; this gross foul matter being shut up, and retained in the mass of the sap, and finding no vent, the leaves being plucked off, the tree will be strangled and die; so that, as a learned man has observ'd, one great difference between plants and animals is, that the lungs and guts of animals are found in the inside, and in plants or trees, they are on the outside.

After I had revolved these things in my mind, I informed Mr. Meigs of my doubts and fears on the this head, (he being a judicious and observing man) I desired him to give me his opinion on that particular; to which he reply'd, that there was indeed a great deal of danger; that prudence and caution was necessary; that we must not be too eager at first, nor deprive the tree of its leaves very much, at our first entrance on that work; and must use moderation for a time, till the tree was got used to it; but when, (as his phrase was) the tree was used to it, we may then grow bold, and use a greater freedom. He told me, that by an error of this kind, he had destroyed a fine young tree; that his trees would bear the hardships now, which would have been destructive in the beginning.

This was a doctrine I did not understand, I knew that man and beast might by habit and custom be enured to bear hunger and thirst, heat, cold, and nakedness, beyond what is common; but the application of this, to trees, was to me quite unintelligible; going out abroad, the sight of the trees unveiled the mystery; I observ'd that the tops of the trees and branches were thick set with small twigs, like fringes, and huddled together in a confused manner: it filled me with wonder, to see the wise provision of nature reduced to extremity, occasion'd by picking away the leaves; the sap thrusting on, and finding the former outlets shut up, (the leaves taken away) was under the hard necessity of putting out new leaves, and small sprigs. If you give the tree time, there will be this provision, if you drive too fast you spoil the tree. I must confess, this is all new philosophy to me, and opens a new scene of wonders; and is the more pleasing, as it has a favourable aspect upon the silk manufactory. The reader may think that I have dwelt too long on such a minute article, perhaps I have; to save the life of Mulberry tree, I am willing to give mine.

As the Society, established at London, have offered such encouragement, and have so kindly invited us to apply ourselves to the raising silk; gratitude and interest obliges us to improve such a favourable opportunity; more especially, as they have display'd such wisdom, goodness, and care, in the offer of their favour, to those colonies which are destitute of any stable commodity, suitable to make an immediate and direct return to England, for such goods as we want, and must always want more abundantly than we have means at present by which we can refund: This seems to be the state of Georgia, Pennsylvania, and Connecticut. The colony of Carolina is in a possession of a good and valuable staple; their rice and indigo. Virginia and Maryland have for a long time enjoyed the large tobacco trade; the province of New-York is well situated for, and has been enriched by the furr trade; the eastern governments have well, within their reach, the advantage of such a fishery, as has been very profitable, and may, in time of peace, prove more valuable than the richest mines of silver and gold, when they shall quietly enjoy the best fishing ground in the known world.

The people of this colony have a trade to the British sugar islands; a coasting, continent, plantation trade, which is to the increase of shipping, and is a nursery for seamen: this trade in a circular course, and in the end, centers in Great Britain, and is of some advantage; yet, after all, something is wanting, by which we may have a direct trade to England; the Society has pointed out the way and means.

The colony of Georgia, I presume, would not continue, and increase their silk trade, if they did not find it a profitable branch of business; doubtless they find their account in it.

Those, among us, who raise silk, say, that it is more profitable than other ordinary business. As this affair has been the subject of my thought and enquiry, as I had opportunity, so I should have enquired much more, if I had then thought of writing upon that article.

Some years past, I asked a man of good faith and credit, who had then made the most silk of any of us, what profit might be made of it; his reply was, that he could make a yard of silk as cheap as he could make a yard of linen cloth, of eight run to the pound; but moving into a new town, where there were no Mulberry trees, he was obliged to desist; a woman of experience in this business, told me, that, in the short time of feeding the worms, and winding the silk balls, she could earn enough to hire a good spinner the whole year: I have not the least scruple of the informer's veracity, but how far their capacity might serve for an exact calculation I know not.

There are some people that care for none of those things, that will enter into no new scheme, nor take up any other business than what they have been enured to, unless you can promise mountains of gold, and that the colony that engages in it shall immediately be turned to Lubber-land. I trust that there are many among us, excited, with a prospect of reasonable gain to themselves and their posterity, of doing publick service to the colony, and what may be useful and acceptable to our mother country, who will, with vigour and application, set forward in that affair, to which we are so kindly invited and encouraged.

We labour under such difficulties to make returns for goods imported, that many have tho't it would be best that we should make our own clothes, and by this means lessen our importation, which, indeed, would be better than to run into an endless and irrecoverable debt; but this would make us less useful to England, from whom we derive; and from whom we have receiv'd such favours and assistance, when we were surrounded by our encroaching enemies, who were edging down upon us, erecting forts, and destroying ours; but as there is a way now open'd for us, by which, if we are not wanting to ourselves, we may not only continue, but increase our importation; for, if the same cost, labour, and time, which we expend in making one yard of cloth, if laid out in raising silk, will procure two yards of the same sort of cloth, and manufactured by more skillful hands, it is easy to see which is the most eligible method; certainly that course which will best serve our own purpose, and render us more useful to the community is to be chosen.

There are several things to be considered that highly recommend this proposal to our acceptance.

1. That the production of silk, even tho' it should be carried to a great height, will not, in the least degree, hinder our husbandry. Communities have been many times much hurt, by calling off the able bodied men from husbandry, to be employed in mines, manufactories, or other works; this has brought on famine and ruin. The raising silk may, in all its parts, be performed by women, children, cripples and aged persons; boys may be employed in climbing the trees, to gather leaves, women and girls may feed the worms, he that has the use of but one hand can do good, the aged, those who are past the labour of the field, who are unable to bear the burthen and heat of the day, and have but little remains of strength, may find a pleasure in this easy employment, their prudence and care is necessary in the well ordering the matter, taking care of the children, who are prone to inadvertency and idleness, and to see that the worms are sufficiently fed, and have their meat in due season; for tho' the work is easy, yet there is great need of attention and care, that they have air, and that the worms are kept clean; for the excrement, altho' it be

dry as dust, must be swept off, and cleansed away.

This may serve to alleviate much of the uneasiness of old age, for there is nothing sits so heavily upon the aged, except that of an ill-spent life, as the doubts and fears of being useless, and burthensome, or of being like a lamp put out: There are also some, who are of such a tender constitution, of such a feeble frame, either by nature or accident, that renders them utterly incapable of hard and laborious service, who would be glad to take refuge in an employment so well suited to their state and circumstances; that so they need not hang as a dead weight upon their relations, or the community.

1. This affair may be of great advantage to the poor, affording them employment at home, or abroad, as it requires no stock to set up with except virtue and diligence; other business needs so much for stock, that many cannot reach it; but, for this business, there is nothing wanting but the spawns, or eggs of the worm, a chamber or garret for their reception, and Mulberry leaves for food: There are few among us but what have some land, and consequently may have some trees, but if they have none, when these trees will be as plentiful as they should be, that person is an hard man indeed, that will deny a poor neighbor a few leaves, which, if not gathered, will be driven away with the wind.

2. Another advantage, attending this business, is, that if we raise never so much, there is no danger of over stocking the market; which will be evident to all, who consider the great importation of wro't and unwro't silk, into Great-Britain, from Persia, and Italy, (some years from Piedmont only, to the yearly value of two hundred thousand pounds Sterling,) and the vast numbers of people in England employed in that manufactory. Dr. Burnet informs us, that in the reign of Queen Ann, there were no less than three hundred thousand, employed in that branch of business; and I have been informed it is still increasing. A sufficient and invariable market, and to one port, is a great advantage; Virginia finds it so, even tho' their tobacco is but one penny per pound, to the planter: It is not so with regard to our product, which is principally provisions, we glut the markets every where; if we hear of a market, if we can come at it by land, we run, ride, and drive, till we have overstocked it; by sea we are all afloat, failing till provisions may be purchased cheaper there, than at home.

Not long since, I took notice of a dissertation, in one of the Magazines; the general design of that piece was, to shew, that the extensive, uninhabited, parts of North-America ought to be so planned, and settled, that every planter should have several thousand acres of land, to enable him to become useful, and that this is the way to render those countries eminently beneficial, to our mother country.

He observes that New-England, as to their manner of settlement, course of business, way of living together in towns, being similar to that of England; therefore he concludes, that we can be but of little service to Great-Britain.

I must take leave, to differ from that polite writer, and retain a good opinion of our tenure of land, and manner of settlement, as being divided into small freeholds; as it is an arduous work, to clear land, overgrown with wood, and drain land, immersed in water, and bring it into a state of fertility; and as nothing will inspire men with resolution, to undertake, and patience, to persevere, like the pleasure, and advantage, of having a right to call it their own.

When people have a clear prospect of support for a family, they will marry young; which soon fills a

country, and renders them able, in a little time, to plant a colony, as large as their own: This advantage, in manner of settling, together with the obligation that all are under to enroll their deeds of land, makes the old proverb truly availing, Buyer look to. These advantages have greatly contributed to the increase of people. When there is such an increase of those who are under circumstances to get a living; they can, and must, increase the trade of Great-Britain, and add strength to the community. In the multitude of people is the king's honour; but, in the want of people is the destruction of the prince. A collection of people, in towns, gives opportunity for the exercise of social virtues, are under advantage to enjoy the privileges of society, schools, for the education of children, colleges, for those who are designed for a liberal education; arts and sciences flourish, trade, and tradesmen, increase, a wild and savage behaviour is put out of countenance; as there are no cross purposes, or contradictions, in true policy, so it is not to be imagined, that in order to be politically useful, we must be divested of so many privileges of society; especially the benefit of social worship: These are advantages not ordinarily enjoyed, in straggling, scattered, distant settlements. Virtue, and order, is the true basis of every valuable, and lasting establishment of a political nature.

As to the other method, of settling thin, upon large tracts of land, which has been represented as necessary, in a wide and extensive territory, in order to render it useful to Great-Britain; it has been found by experience, that a very large, private property, has been a great hindrance to the peopling, but also to the improvement of such land, and tends to continue it in a wilderness state; unless slaves, and transported servants, are introduced to subdue, and improve it; by these helps, a great deal of product, fit for exportation may be raised, and sent to England. But, as slaves spend but little, there will not be a proportionable demand for English goods. It is expected, that what we send, should be in return for goods: People of a free condition, live at a higher rate, spend more, and consequently their demand for goods will be larger: If these free people raise, and export so much, as to pay for them, they will be so much more useful, to the mother country: Farther, these bought servants, and slaves, as they are not constitutional members of the common wealth; so they cannot be rely'd on, in a time of common danger.

But, love for my country, and a zeal for its honour, when represented as insignificant now, and like to be so for ever, has carried me much beyond my proper bounds, and my first intention.

As we are now of some advantage, so I cannot but hope, that by our fishery, raising silk, and wine, in time, we shall become more abundantly useful to those, from whom we derive, our original. To this end, as we have but few Mulberry trees, we should increase the number, and as soon as possible. There are two sorts of these trees, whose leaves are used for the food of silk worms; that, which bears the black Mulberry, the other which produces a white berry: If they are not natives of our country, yet, at least they are easily reconciled to our climate; for they are propagated without difficulty, and grow freely without culture, or much care, except securing them from the cattle, while they are young, and within reach: They may be propagated several ways; by seeds, for a nursery, in the same way we use to procure Apple trees; but, I suppose, that instead of scattering the whole Mulberries, in the bed of prepared earth, it will be better, to dry the ripe Mulberries, and break them in pieces, which may prevent their growing and coming up in thick clusters, as, I am told, they will do, when planted whole: When these are grown of sufficient bigness, they must be transplanted; or, they may be planted by the side of a fence, by which means they will grow up to an hedge row, and so never need transplanting, which will save time and

labour, as also be of advantage to the tree; for transplanting retards the growth for some time. Another way of propagating this tree, is, by layers, as it is called; that is, they bend a branch to the earth, and bury a part in the ground; in two years it will have taken root, and may be transplanted: This method of propagation is attended with more labour; all that makes it preferable to any other, is, that hereby we may be certain of female bearing trees; if we have them from the feed, they prove all, or many of them, male plants, which bear no fruit.

A third way of propagating the black Mulberry tree, is, by digging up the young trees, where-ever we can find them, as they grow here and there spontaneously; bring them home, and plant them in convenient places, near our houses, where they will stand the most handy, for feeding the silk worms: Also I have seen young suckers, growing from the roots of trees, cut down; which, if sever'd from the stump, with some roots belonging to them; and transplanted, may possibly become trees.

I have been informed, that, at a place called Falkner's island, which lyeth opposite to Guilford, there are vast numbers of young shoots, which grow with such eagerness, and obstinacy, that, notwithstanding all endeavors to destroy them, the utmost efforts of the proprietors of the island, both by plow and scythe, has been used successively many years, as good hap is, without being able to accomplish it. A number of us here, and in the neighboring towns, (with leave of the owners,) design to supply ourselves from thence, the next spring, for, I apprehend that this way of transplanting young trees, will be the most expeditious, to get furnished for the silk trade.

A fourth way of procuring trees, is, by slips, thrust in the ground: I am inform'd that, if the twigs, or small branches, of the white Mulberry, are set in the ground, altho' they have no roots, yet they will grow. I travelled a mile out of my way, to see a tree that was propagated in this manner; the owner of it bro't it home with him as a riding whip, and, as he was directed, set it in the ground, and in six years time it was become a fine tree, I suppose, would afford leaves to feed a thousand worms, or more; it is possible that the black Mulberry may be propagated in the same manner, if so, it will be the easiest thing in the world to have what number of them we please: If I live, I design, in the Spring, to set many slips of the white Mulberry, and a few of the black sort, for a tryal; I apprehend that it will be a good thing to dig the ground, and make it mellow, where you design to set the slips of black Mulberries, and to water them, if there should come a dry time, before they have taken root; as all this will take up but little time and labour, and the consequences are so interesting, I cannot but hope, that many will apply themselves to it, notwithstanding the present state of affairs.

It is a disputable point, whether the black Mulberry leaves, or the white, are the best for silk, but it is certain, either will do well; it will be best to plant of both sorts, that so experience may determine the question. We will see what the learned Millar writes on that subject.