

NOTES

ON

THE CULTIVATION AND MANAGEMENT OF

TOBACCO,

FROM THE PLANT BED TO THE PRIZE;

ACCORDING TO THE MOST APPROVED PRACTICES IN ALBEMARLE, AND
THE ADJACENT COUNTIES IN VIRGINIA.

PREPARED BY PETER MINOR, ESQ.

AT THE PARTICULAR INSTANCE OF

THE EDITOR OF THE "AMERICAN FARMER,"

WITH WHOSE PERMISSION THEY ARE NOW PUBLISHED IN THIS FORM BY

W. F. REDDING.

PRICE 12½ *CENTS.*

BALTIMORE:

PRINTED BY J. ROBINSON, CIRCULATING LIBRARY,
Corner of Market and Belvidere-streets.

1892.

This page in the original text is blank.

NOTES

On the Cultivation and Management of Tobacco.

From the plant bed to the prize—according to the most approved practices in Albemarle and the adjacent counties in Virginia.

1st. OF THE CHOICE OF LAND FOR THE PLANT-BEDS AND MODE OF PREPARING IT.

A RICH virgin loam with a slight mixture of sand is ascertained to be the best soil for raising tobacco plants. Such spots are indicated by the growth of alder and hazle bushes in bottoms and on the margin of small streams, and if the situation has the command of water for irrigation it is on that account to be preferred—the spot being selected, the first operation is to burn it with a strong fire. For this purpose the growth of every kind is cut off, (not grubbed up) and the whole surface raked very clean. The burning should be done before Christmas, or as soon after as the weather will permit—and if done thus early it cannot be well too heavy, even bringing the soil to a hard cake.—The wonderful fertility imparted to soil by fire, has of late years been clearly proved and developed by various experiments in this and other countries, but judging from long established practice, we suppose it is a fact that has been long known to tobacco planters—that this fertility is imparted by the fire, and no ways dependent upon the ashes left by the process is clearly proved from the fact, that the same results will ensue if the ashes are swept off entirely clean. Or take another piece of ground of equal quality, cover it with as much or more ashes, and prepare it in every respect similar except burning, and plants cannot be raised in it. Hence the necessity and propriety of regular and uniform burning, the want of which is always manifested by a diminutive yellow and sickly growth of plants in those spots not sufficiently acted on by the fire.

After the ground becomes cool from burning, the whole surface should be swept with a coarse twig broom to take out the coals—In this operation some of the ashes will be removed, but that is of no consequence—it should then be broken up about two inches deep with grubbing hoes, in which operation, and in repeated choppings afterwards with hilling hoes, all roots will be cut and finally got out with a fine iron tooth rake which will leave the ground in proper order to receive the seed.

The most approved time for sowing is about the first of February, the beds previously prepared being suffered to lie and mellow by the frost and snows of that time. But it will do very well to

burn and sow after that time, as late as the first of March, taking care not to have the heat so great.—The quantity of seed is as much as can be taken up in a common table spoon* for 100 square yards, and that in proportion. This quantity of seed should be mixed with about one gallon of clean ashes, and half that quantity of plaster of paris, and the whole well incorporated, and then strewed uniformly over the bed at two operations, crossing at right angles to ensure regularity. Cabbage seed for early planting, Tomatoe, Celery, and Lettuce seed may be sowed in small quantities with the Tobacco seed, without material injury to the growth of the plants. After sowing the seed the ground is immediately trodden over closely with the feet, and covered thick with naked brush. If the frost is severe from this time it is common to take off the brush some time in the month of March, before the plants appear, and tread the bed again, and at the same time give the ground a slight dressing of manure. The dung of fowls of all sorts, is sought after for this purpose, which being beaten, is sifted over the bed through a coarse basket or riddle. The brush is then restored, and not finally removed until the leaves of the plants are all an inch in diameter; when the dressing of manure is again applied, taking care to wait the approach of rain for that purpose. Any grass or weeds that may have sprung up in the mean time are carefully picked out—In dry seasons, if the situation admits of it, the bed must be irrigated by training a small stream of water around the edge of it. If not it should be watered every evening with a common watering pot, or pine bushes dipped in water and shook over the bed until sufficient moisture is obtained.

Under a careful observance of this management, the plants according as the seasons have been favourable or not, will be fit to transplant from the fifteenth of May to the tenth of June. A planter thinks himself lucky if he can get his crop pitched by the tenth of June. After that, the seasons are uncertain from the heat of the weather, and the chances of success for a crop are various; though it has been known to succeed when planted the middle of July.

Of the preparation of the Land, and cultivation of the Crop.

The best Tobacco is made upon new or fresh land. It is rare to make more than three successive crops upon the same ground, of which the second is the best, the 1st and 3d being about equal. But it is more common to make only two. The new land, after all the timber and brush is removed, and the surface very cleanly raked, is twice closely coultured, as deep as two horses or oxen

* This quantity of plant bed is generally considered under good circumstances as sufficient to set ten thousand hills in good time. But the prudent planter, taking into consideration the casualties of fly, drought, &c. will do well to make a larger allowance. We know of no certain remedy or antidote against the fly which destroy the early plants.

can pull. After this, hands with grubbing hoes pass regularly over the whole ground, and take up all the loose roots that have been broken by the coulter which are heaped and burnt, or removed. One and sometimes two more coulerings are then given, and the same operation repeated with the grubbing hoes, which leaves the land in proper order to be hilled—this is universally done in straight rows at the distance of $3\frac{1}{2}$ feet apart, giving the same distance as near as the eye will permit the other way—in *fresh* land, that is to say, for the second and third crop, the line of the original row, and even the locality of each hill should be preserved. After passing the coulter two or three times between each row, the hills should be made in the same place, the remains of the stalk and roots of the old plant being first removed. It is supposed, from the excess of nitrous particles contained in tobacco, above any other plant, that the partial decomposition of this stubble during the winter, imparts a degree of fertility to the spot which should not be lost by the diffusion and exposure of a general ploughing. It is most advisable too, that the hilling of new and fresh land, should be done as early in the spring as possible, say three or four weeks before planting. This affords time for the hill to settle to a proper consistence, and presents a more extended surface to be acted on by atmospheric influence, which perhaps is greater in the spring months than at any other season of the year.

On the bottomland of our rivers there are extensive alluvial flats, that bear successive crops of tobacco for many years, and some planters resort to highly manured spots conveniently situated upon high land. But in general it is considered bad economy to manure land for tobacco, both because the quantity required for that crop is greater than for any other, and because the quality of the product, as well as that made on low grounds, is coarser in fibre and less marketable.—The preparation of such land however is the same as that of new ground, except that the large plough and harrow are substituted for the coulter and grubbing hoe, and the hilling may be a little longer delayed.

If the seasons have been favourable, and the plant beds duly attended to as before observed, the plants will be ready to set out from the 15th to the last of May. It is most common to wait for a rain or *season* as we call it, to perform this operation, in which case the hills must be previously cut off about four inches above their base; but in early planting it is quite safe to proceed without a season, provided it is done in the evening, and the hills cut off at the same time. It is universally admitted that a moderate season is better than a very wet one; and that is considered the best, in which the earth does not entirely lose its friability, but at the same time will bear to be compressed closely about the roots of the plant without danger of becoming hard or baked. Under the most favourable circumstances, however, some plants will fail or perish, and therefore the ground must be gone over after every rain until the last of June, to replant the missing hills.

It is not important here to describe the mere cultivation of the crop as it respects tillage, it being only necessary as in the case of all other plants to keep the earth light and free from weeds and grass. This is generally done by two weedings, first by scraping a little earth and all the young grass from the plants and then in a short time restoring the same earth, and as much more as will make a considerable hill around each. In old land, and that free from stumps, the single horse shovel plough is used with great advantage as an auxiliary to the hoe.

When the plants attain a proper size, which observation and experience will readily point out, they are to be primed and topped. The priming is merely stripping off 4 or 5 leaves at the bottom, leaving about a hand's breadth between the first leaf and the top of the hill. Topping is simply taking out the bud with the finger and thumb nails, leaving the necessary number of leaves, which in general is not more than eight, though the first topping may be to 9 or ten leaves to make it ripen more uniformly, and bring the crop into the house more together. For the same reason, the late plants are not topped to so many, falling from eight by degrees as the season expires, down to six and five. A little practice, and slight attention to the manner in which the leaves grow from the stalk, will soon enable a person to perform this operation with great dexterity and despatch, without counting the leaves. All that is requisite after this until the plant is fit to cut, is to keep it from being eaten by the worms, and to pull off the suckers that grow out at the junction of the leaves to the stalk. These suckers put forth only twice at the leaves, but after that indefinitely and continually from the root, and it is thought injudicious ever to let them get more than a week old, for besides absorbing the nutriment necessary to push forward, and increase the size and thickness of the leaf, the breaking them off when of a large size makes so great a wound as greatly to injure the after growth of the plant. In general about three months is requisite to perfect the growth of tobacco from planting to cutting.

Of the diseases, and casualties to which it is subject; and its tendency to exhaust land.—Tobacco is subject to some diseases, and liable to be injured by more casualties and accidents than any other crop. That growing upon new or fresh high land is seldom injured by any other disease than the *Spot* or *Firing*, which is the effect of very moist succeeded by very hot weather. For this we know of no remedy or antidote. Tobacco growing upon old land, particularly upon low flats, besides being more subject to *Spot*, is liable to a disease we call the *Hollow Stalk*, which is an entire decay and rottenness of the inside or pith, terminating gradually in the decay, and final dropping off of the leaves. This disease is sometimes produced by the wounds caused by pulling off over-grown suckers, thereby admitting too great an absorption of water into the stalk through the wound.—In land not completely drained, the plants are sometimes apt to take a diminutive growth, sending forth numerous long, narrow leaves, very thickly set on

the stalk. This is called Walloon tobacco, and is good for nothing. As there is no cure for these diseases when they exist, we can only attend to their prevention. This will at once be pointed out by a knowledge of the cause, which is too much wet, and indicates the necessity of complete and thorough draining before the crop is planted. It may not be a miss here to mention, that tobacco is more injured than any other crop by ploughing or hoeing the ground when it is too wet, and to express a general caution on that head.

The accidents by which tobacco is often injured and destroyed, are high winds, heavy beating rains, hail storms, and two kinds of worm, the ground or cut worm, and the large green horn worm. High winds, besides breaking off the leaves and thereby occasioning a great loss, are apt to turn them over. The plant unlike most others, possesses no power to restore the leaves to their proper position, which must shortly and carefully be done by hand, otherwise the part inverted will gradually perish and moulder away. Those who have studied the anatomy of plants can tell us the cause of this, as well as, why nature has denied to tobacco the faculty of restoring its leaves to their proper position.—The ground worm, the same which is sometimes so fatal to corn, is ascertained to be the Larvæ of the common black bug found in great numbers under wheat shocks, &c. This worm is seldom or never found in new land, but abounds in old or manured ground—and in some years I have seen them so numerous, as to have from 40 to 50 taken out of one hill in a morning. The alternatives are either to abandon the crop, or to go over the ground every morning, when they can be found at or near the surface, and destroy them. The missing hills to be regularly replanted. The Horn Worm is produced from a large, clumsy, grey coloured fly commonly seen late in the evening sucking the flowers of the *Stramonium* or *thorn apple*, commonly called here the *Jumes-town weed*. The flies deposit their eggs in the night on the tobacco, and all other narcotic plants indiscriminately, as Irish potatoes, Tomatoes, &c. In 24 or 36 hours the eggs hatch a small worm which immediately begins to feed on the leaf and grows rapidly. Great care should be taken to destroy them while young. Turkeys and Guinea fowls are great auxiliaries in this business, but the evil might be greatly lessened if the *flies* were destroyed, which can easily be done in the night by a person walking over the ground with a torch and a light paddle.—They will approach the light and can easily be killed. In this way I have known a hundred killed in one field in the course of an hour.

Tobacco has been reproached as the cause of the general exhausted condition of our lands, of the slow paced improvement in the Virginia system of agriculture; in short as the bane of all good husbandry. This stigma, is, I am persuaded, in a great measure unmerited. It is true, that like Indian corn, from the frequent and high degree of tillage it requires throughout the summer, it exposes the ground to be washed by hard rains, and evaporated by the hot sun; but the plant in itself is less an exhauster than corn or wheat.

A proof of this is to be found in the superior growth and perfection to which any crop will arrive when grown after tobacco, than after any thing else, not excepting clover that has been ploughed in. Perhaps this may be accounted for from the facts. 1st. That the roots and stubble of tobacco left on the ground are more in quantity, and contain more of the essential qualities of manure than those of any other plant. 2d. The plant itself while growing feeds more from the atmosphere than any other, and 3dly. It is not suffered to go to seed, the process in all vegetation which is supposed to make the greatest draft on the fertility of the earth.—Neither is the culture of tobacco incompatible with a proper rotation of crops, and an improved system of husbandry, for we find as extensive and as successful efforts at improvement made in the tobacco region, and by tobacco makers, as in any other section of our state.

Of the Cutting, Curing and Housing.

We have now arrived at the most difficult and critical stages of the whole process, every operation from this time until the plant is cured, requiring great attention and care, as well as skill and nicety of judgment in the execution. And hence a great contrariety of practice in some of the minutiae prevails, according to the superior skill and ability of different planters.

It is difficult to convey an idea of ripe tobacco by description. It can only be learnt by observation and experience. In general its maturity is indicated by the top leaves of the plant turning down and often touching the ground, becoming curdled with yellow spots interspersed on their surface, looking glossy and shining, with an entire loss of fur, a manifest increase of thickness in the substance of the leaves, which when pinched in a fold between the finger and thumb will crack or split with ease. But the most experienced planters acknowledge that they are more apt to err in cutting their tobacco too soon, than in deferring it too long. As a proof of this, take two plants growing side by side of equal size and appearance in every respect, and both apparently ripe—cut one and weigh it both green and when cured: let the other stand a week longer and when weighed like the first the difference in favour of the latter will be astonishing. If it be asked, why we do not avail ourselves of the advantage to be derived from thus deferring the operation? It may be answered, as I have before observed, that tobacco while standing is liable to be injured and destroyed by more accidents than any other plant, such as hail storms, heavy rains, high winds, the depredations of worms, the growth of suckers from the root which abstract greatly from the weight and thickness of the leaves, if suffered to grow, and which it is not always convenient to pull off. Besides this, the season of cutting tobacco is a very busy one to the planter, and too much work would accumulate on his hands by deferring it to the last moment. For these reasons it is considered most prudent to cull out the plants as soon as they will make

good tobacco; in which case the loss in the aggregate amount of crop, is balanced by avoiding the risk of accidents, and being able to bestow more care and attention to what remains.

The cutters go over the ground by rows, each taking two at a time, and the plants they cut are laid in the intermediate row between them. This facilitates the picking up, as the cutting of four rows is thereby placed in one. The stalk of the plant to be cut is first split down with the knife about six inches, and after being cut off just below the bottom leaf, is inverted and laid upon the ground, to fall and become pliant for handling. The splitting of the stalk is important, both for the convenience of hanging it on sticks and accelerating the cure of the plant. To those unused to the culture and management of tobacco, it will be almost incredible to learn how soon it will *sun-burn*, as we call it, after being cut and turned over on the ground. This is effected by the hot rays of the sun, piercing and penetrating the tender parts of the leaves, and is manifested by the parts affected, turning white and soon becoming dry and crisp, and when cured, of a dark green colour, without possessing any of the strength or qualities of tobacco. In very dry, hot weather, sun-burning often takes place before a large plant falls sufficiently to be handled without breaking off the leaves; and for this reason the cutting in such weather should always be made early in the morning, and not proceed after ten o'clock. Sometimes it is done in the evening when there is no prospect of rain, by which the packing up may be accomplished earlier the next morning, and with less risk of burning. As soon as the plants fall sufficiently to handle without breaking off the leaves, they are *hand-fulled*, as we call it; that is, they are picked up, and three or four or five plants are laid together, with their tails from the sun, and the stalks inclined and somewhat elevated against the sides of some of the hills. The pickers up, after going through this ground, return and turn over each handfull, that both sides of the plants may receive the benefit of the sun, and not be burnt; and this operation is again repeated; if by this time the tobacco is not pliant enough to be put in *shocks*. This is putting an indefinite number of handfulls together, the stalks in an erect position, forming a sort of circle of any diameter, from two to six feet or more, at convenient distances in the field; and these shocks should be immediately and effectually covered with green bushes or something else, previously in place, for the purpose to exclude the rays of the sun.

The next operation (after the heat of the sun has declined) is to remove the tobacco to the house or scaffold, and hanging the plants on sticks $4\frac{1}{2}$ feet long, and about one inch square. The common pine affords the best timber for this purpose, which will rive straight and with ease. From 10 to 12 plants, according to size, may be hung on each stick, the width of two fingers to be left between each plant. The scaffolds are raised four or five feet from the ground, and the poles to receive the sticks are placed four feet apart, and are made to range east and west, so that the sticks will be north and south, to give both sides an equal benefit from

the sun. The tobacco is commonly removed from the field to the house or scaffold upon the shoulders of the labourers, carefully put on and taken off to avoid bruising; but if the distance is great, carts are used, greater care being necessary to avoid bruising. This is considered so important that some judicious planters make temporary scaffolds in the field, preferring the risk of injury from a smart rain, to that of bruising by moving far in a green state.

There are two modes of curing tobacco. One in the house altogether by fire; the other by the sun on scaffolds. The first is esteemed the best and most effectual, but it is attended with great risk. Our houses are generally four sided pens, 20 feet square, built of round poles, and about 12 feet pitch. The joists are placed four feet apart, the rafters immediately over them, having beams corresponding with the joists, three feet perpendicular from each other, so as to afford ranges or tiers for the tobacco up to the crown; and the same tiers are fixed below the joists and at the same distance by extending poles across the house between the logs of the pen. The house is covered tightly with pine boards, and if it is intended to cure by fire, the openings between the logs should be closed to prevent the escape of heat. Such a sized house will cure from 2 to 3000 weight, according to the quality of the tobacco. If it be decided to cure by fire, the tobacco is carried immediately from the field to the house, hung on sticks as before described, and these sticks crowded as close together on the tiers as they can possibly be, so as to exclude all air from the tobacco. It remains in this situation until the leaves of the plants become yellow or of the colour of hickory leaves just before they fall. This will generally happen in four or five days, when the sticks must be spread and placed at their proper distances apart in the house. About six or seven inches is the proper distance, or any other that will prevent the plants on different sticks touching each other. A moderate heat which is gradually increased to a very strong one, is then applied, by making different ranges of fires throughout the house—and that wood is preferred and sought for, which will make the greatest heat with the least blaze and smoke. The fires must be continually kept up until the curing is effected, (say from four to six days) when not only the leaves, but the whole stalk becomes dry; and changes from a green or yellow, to a light brown colour.

If it is not to be cured by fire, the tobacco is brought to the scaffold and hung, and the sticks are crowded in the same way on the scaffold, until the same yellow colour is imparted to the leaves, and some planters are so particular as to cover their scaffolds with green bushes during this crowded state, to prevent sun-burning—when the proper time arrives, which is indicated by the yellow colour of the leaves, the sticks are thinned and placed at such a distance as to admit the influence of the sun and air, and if the weather is warm and fair, in five or six days, the curing will be so far effected as to justify the removal of the tobacco into the house, when it must be properly and finally arranged, and the cure will be gradually accomplished by time and season. But if damp, hot weather supervenes, it will be necessary, both in this and in the case of tobacco already

cured by fire, to make moderate fires under each whenever it comes in very high order.—In such weather and in such order, tobacco is liable to contract a mould about the stems, which can only be prevented by keeping it dry by fires. This mould injures both the quality and appearance greatly, and cannot be easily rubbed off.—Great attention is therefore necessary to prevent it by these occasional firings until regular cool weather sets in, after which there is no danger. From the vicissitudes of our climate for some years past, and other causes, it happens commonly that some portion of our tobacco is not mature, and is left until we are compelled to cut it by the approach of frost. Such plants, even if fully ripe, seldom cure of a good colour or quality for want of proper seasons. And here we may venture a general remark; which is, that tobacco cut early and fully ripe, will cure well and be of good quality under the most unfavourable circumstances, while that which comes late into the house, is difficult to cure and of inferior grade.—After the housing of tobacco is all accomplished, and cool weather begins, the house should be closed with green bushes or fence rails set up on end close around on the outside of the house, to exclude damp air, and beating rains which generate mould, &c.

Of Stripping and Prizing.

Stripping is begun as soon after the plants are thoroughly cured and seasoned, as the convenience of the planter will permit. It is taken off the sticks in proper season or order, and packed in a large bulk for this purpose, and generally in higher order than is proper for prizing, which enables the strippers to handle it with less waste, and to tie it more neatly. There are two facts generally believed to exist, in relation to the order of tobacco, which are unaccountable. One is, that tobacco *in order*, or in a moist state, is no heavier than when dry. The other, that if it is taken down and bulked, as it is going out of season, that is, as it is passing from a moist to a dryer state, it will return in the bulk to the highest state of order it had previously acquired—These opinions, however, seem to have been established more by prescription than recent experiment, for I can find no person that will absolutely assert the facts upon his own experience. But be it as it may, the latter fact is so generally believed as to be attended to in bulking tobacco.

In stripping, the best planters make two qualities besides stemmed. For this purpose, every plant passes through the hands of the sorters (the most experienced and judicious of the labourers) who pull off the two first, or ground leaves, without looking.—Upon examination, the remainder of the plant may be found fit for the first class—perhaps, too, more leaves are to be taken off, or perhaps the whole is only fit for the second class. In this way the first class is obtained, the leaves previously pulled off are again sorted for the second class, and what is unfit for this is stemmed.

No definite idea of the quality of the different classes can be well conveyed by description. It can only, and soon will be ac-

quired by observation and experience. The bundles of each consist of four or five leaves neatly wrapped around the head with another leaf. The stemmed tobacco (about two thirds of the stem only being taken out) is tied in large bundles, and when packed in the hogshead for pressing is untied and laid loosely, but in strait and uniform layers.

After stripping, some planters hang up their tobacco again upon sticks drawn smooth and somewhat to a feather-edge, and as it comes in proper order for prizing it, is taken down and bulked, and closely and effectually covered till the time of prizing arrives—the months of April and May, are thought the best time for this. Others pack their tobacco in double winrows, that is, lightly lap the tails of the bundles, placing the heads on the outside, and thus raise a bulk of three or four feet in height. It remains in this situation well weighted, but oftentimes without cover all the winter, and perhaps gets completely dry; but returns in proper order for prizing in the warm weather of April and May. It is a matter of much doubt and dispute, which of these two modes is the best. Perhaps the latter is to be preferred, because it is the least trouble, provided the planter has plenty of house room, and can so order it as to leave the winrows entirely free from interruption. Other planters more careless, carry on the operation of stripping and prizing together, without due regard to the order of the tobacco, which may account for the excess of inferior qualities, and diversity of prices exhibited in our markets.

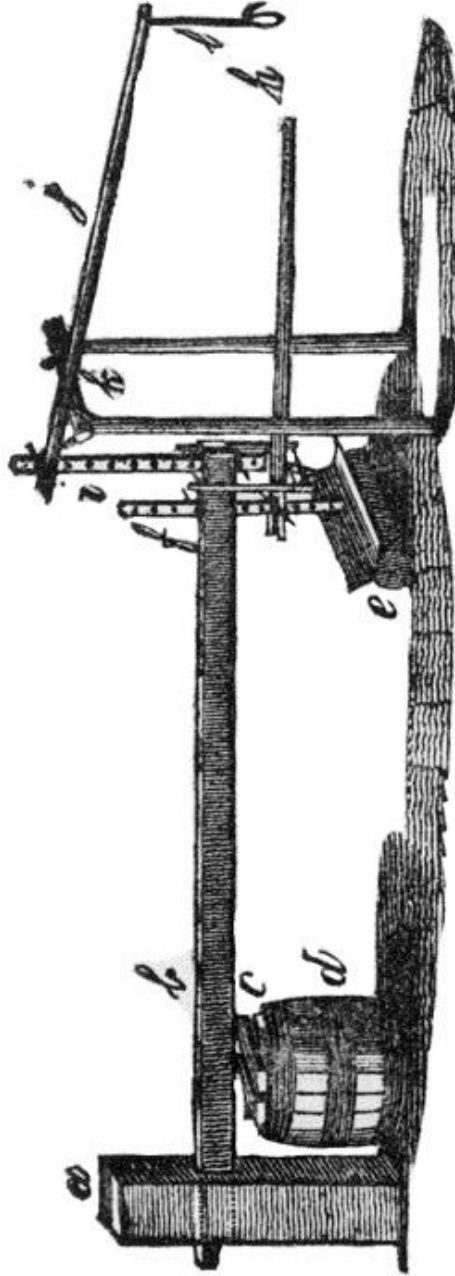
Prizing is the last operation, but not the least important in the care and attention it requires.—The size of our hogsheads are prescribed by law. They must not exceed four and a half feet in height, nor 36 inches in the diameter of the heads. In these we generally attempt to press 1500 lbs. but we oftener fall below than go over it.—The average is perhaps not more than 1350 lbs.—Our prizes are of the cheapest and simplest construction, generally fixed by the labourers who use them, and not exceeding two or three dollars in entire cost. The stump of a tree is generally used, instead of a post in the ground, until it rots, and the hogshead is protected by a temporary shed, or a light portable roof straddled across the beam.—I subjoin a sketch of the one most commonly used. This you will observe operates by an unceasing suspended weight, capable of being increased by the addition of stones to any required extent, and which is suffered to settle gradually to the desired point, by which all danger of bruising from sudden and violent pressure is avoided. The important points in prizing, are to pack the tobacco neatly, in straight and regular layers. This is best done by putting in only one bundle at a time, pressing and squeezing it closely through the hands as it is done, to make it occupy less space, by which it will exhibit a better appearance when it is opened for inspection.—To make it descend always on a level in the hogshead, by never suffering the beam to be depressed below a horizontal position, and to cause the tobacco in prizing, not to leave the inside of the hogshead, which can only be effected by

having different sets of press boards, corresponding to the different dimensions of the hogshead between the buldge and the head.

Your friend,

P. MINOR.

To J. S. SKINNER, Esq.



A the stump or post, *c* the blocking, *d* the hogshead, *f* the sword connecting the weight *e* to the first lever *b*; the second lever *g* is applied to the first by the frame *h*; by pulling the rope *i*, the sweep *j* working on the gallows *k*, raises the lever *b*, as the sweep and first lever are connected by a sword *i*—if the weight put at *e* is too great to be raised by the power applied to the second lever *h*, the design of the sword *f* not being fixed in the ground, would be frustrated—the weight, however, may be readily adjusted to your power by putting more stones in *n*, or taking some out of it.

As you have promised an essay on the culture and management of Tobacco, it is probable that your correspondent may not be apprized of the mode of destroying that enemy of the tobacco crop, called by planters the ground worm, — Should he omit this, I offer you a mode practised by myself for several years with success.— Old land, and manured lots, especially where they have a considerable coat of dried vegetable matter, abound in the ground worm, which cut the tobacco plant, so soon as it is stuck in the hill, and indeed continue their depredations often until it is nearly grown—On old land the great objection to cultivation by the planter is, he cannot get his tobacco to stand for the worm—and they are in

fact a formidable adversary, as I have seen fifty caught out of one hill.—I plough my lots deep in the fall or winter, and stir them often in the spring, before they are hilled—Before ploughing in the spring, I sow two or three bushels of Indian corn to the acre, and plough it in; then let in my whole stock of hogs, taking care not to put the hogs on when the ground is wet—and at each ploughing I repeat the seeding of corn.—The hogs in searching for the corn, extirpate the worm, and no corn is lost, as it is all got by the hogs—you only lose the labour of the seedsman—and for this get the land much better broke.—I have had two lots, one treated in this way, the other planted without letting the hogs on—and in the latter, scarcely made any tobacco for the worm, while in the former, scarcely a worm could be found. T. A.

SUPPLEMENTAL REMARKS.

BY MR. MINOR.

Of Rearing Tobacco Plants.

A GREAT scarcity of original land, suitable for raising Tobacco plants, beginning to prevail in the Tobacco region, the difficulty of obtaining such spots, has induced the planters of late years to turn their attention to the construction of artificial and permanent beds.—This is a matter of the first importance, and worthy of great attention. An intelligent friend, and judicious planter, to whom I was indebted for much of the practical detail of the notes, suggests the following as the best mode of making and preserving an artificial bed.—Choose a piece of ground at the foot of a hill fronting to the east or southeast, and so situated with respect to water, that a small stream may be trained along the upper margin of it. If the soil is unfit for raising plants, (which I have before described as a rich loam, with a slight mixture of sand,) cart proper soil from some other place and cover the ground 6 or 8 inches thick with it. Make a low wall of stone, along the ends and lower side of the bed to keep this soil in its place. Then burn the ground and manage it in every respect as in the case of a new bed. By the aid of the water for irrigation and the eastern exposure, the plants will most generally be insured in good time. After the planting season is over, weed the bed clean, and destroy every species of vegetation upon it, and cover the whole surface with litter from the stable after the manner we do asparagus beds in winter, or with half rotted wheat straw so thick as to prevent all vegetation from springing up through it. Let it remain thus

covered until the next winter, when the time for burning and sowing arrives, when the litter or straw is to be removed very clean, and may be made to enrich some other ground, and the spot burnt and treated as heretofore directed. After the first year, the burning may not be so heavy. I have no doubt but a bed constructed and treated in this manner, will produce good plants for many years. Perhaps it may become *tired* or sick of plants, from the want of some rotation, or from too great an accumulation of charcoal on its surface, in which case it will be easy to remove the earth and substitute fresh soil in its place.

Of raising Tobacco on old land.

Some planters in Albemarle, particularly about the Green Mountain, a region celebrated for raising Tobacco of the first quality, have ascertained that their old land, which had been once exhausted, but made rich again by the use of clover and plaster, will produce as good Tobacco in every respect, as that raised on their best *new* or *fresh* land. This is considered by the planters among the most important advantages they at all derive from the introduction of plaster, for a very small portion of first rate land for Tobacco, now remains to be cleared. An eminent planter from the neighbourhood I have mentioned, describes the following, as the process he pursues, on such land with great success. Supposing the ground to be well set with clover, do not suffer it to be grazed after hay-harvest, that a good coat may accumulate for turning in. In October or November, plaster the land at the rate of one bushel per acre, and fallow it as deep and as well as a good three horse plough will effect it. In February or March, take advantage of an open spell of weather, and plough it again with two horses, first strewing another bushel of plaster per acre. This ploughing besides completely pulverising the earth, and diffusing the decomposed vegetable matter, exposes the cut worm (now in a chrysalis state) to be destroyed by the succeeding cold weather. From this time, until it is to be hilled, the ground may be kept light and clear with harrows, when a third ploughing, and a third plastering of one bushel, per acre is given, and the crop then cultivated in the usual way.

I highly approve the hint of your correspondent, T. A. of sowing corn, and turning in Hogs at the periods of the different ploughings of old land, and shall avail myself of his advice this spring in an experiment I am making upon clover land.

Of Priming and Topping.

A practice has prevailed to some extent for several years, and is constantly becoming more common, of not *priming* or pulling off any of the bottom leaves of tobacco, when the plant is to be topped. Some good reasons, I think, are given for this innovation upon the old

practice. In the first place, the pulling off these leaves, makes many wounds, which are thought to produce a temporary check in the growth of the plant. But the leaves if left, gradually moulder away, and drop off without absorbing much sap from the plant, and protect those above them, from decay and dirt, and this practice is said to have the effect to lessen, in a great degree, the protusion of suckers from the root. The topping can certainly be done more expeditiously, though I presume at first, it would require more care and attention, as the required number of leaves are to be left exclusive of those, which in the common way would be primed off. I cannot speak at all from experience, about this method—but I think it is worthy of trial.

Of curing by Fire.

An improved method of firing tobacco, particularly as it respects the diminution of risk and the economy of fuel, has begun to be adopted by some judicious planters, in this part of the country. This is, to make the fire on the outside, say, from twelve to twenty feet from the house, and to convey the heat by a regular flue built of stone or brick, going under ground and opening in the middle of the house. Two of these flues, one on each side, are sufficient for a house of twenty feet square or more. The fire is made in the mouth of this flue, on the outside, after the manner of burning a brick kiln. By the draft of air, which goes constantly to support this fire, all the heat is carried into the house, without any of the risk or danger, which attends the common mode. The house should be made tight and close, as indeed every house should be, that is used at all for firing.

Of the construction of Tobacco Houses.

A little more expense and attention than is commonly given to the plan and construction of our Tobacco Houses, would, I think, greatly diminish the labour and trouble of the planter, and facilitate every operation attending tobacco, after it comes into the house. As they are generally constructed at present, the roofs are so slight and insecure as often to permit leaks during hard rains; thereby greatly injuring the tobacco, while it hangs up; while the body of the house is so open, that tobacco taken down and bulked away for stripping or prizing, often gets completely dry by the piercing winds of the spring, notwithstanding all the precaution of covering used to prevent it. It has been the reproach of Virginians abroad, that their dwelling houses were generally too costly and extravagant, while their negro cabins, their barns, their tobacco houses and stables, scarcely deserved the name bestowed on them. There is much truth in the charge, and if nothing else will do, let our interest dictate an effort to wipe it off. A single trial, I am sure, would convince any planter of its expediency, and exhibit, even in building to-

bacco houses, a verification of Mr. Burke's political maxim, "that the road to economy lays through expenditure."

I will close these remarks, by recommending to every planter, to have at least one house, which may be called the packing and prizing house, constructed somewhat after this manner. Build it near the foot of a hill which shall somewhat screen it from the piercing north-west winds. Let it be twenty feet square and two stories high, the first story of stone eight feet pitch; one side of the house to be partly below the ground according to the declivity of the hill.—The second story of frame work, having sills, with corner posts and braces only, and enclosed with plank nailed on perpendicularly, and the roof covered with shingles. The lower story is to be used chiefly for stripping and packing, and in order to be well fixed for this, construct two garners one on each side the centre door, 4 feet high, 6 feet wide and the whole length of the house. This will leave a passage 8 feet by 20, which is ample room to strip in. A cheap stove could be fixed in this passage for the strippers in cold weather. Let the garners be raised one foot from the ground, and made air tight, by using well seasoned plank tongued and grooved. In these garners pack the Tobacco, as it comes in order for prizing—and have a covering made in sections like batten doors, that will just fall within the garner and exactly fill the whole space. Weight this covering well with stone, and lay clean blade fodder, thickly over the whole. In this way the Tobacco will be perfectly secure, and undergo no change until it is time to prize it. The prizes may be fixed at the side of the house, under a shed.

ADDITIONAL REMARKS,

BY THE EDITOR OF THE "AMERICAN FARMER."

WE have translated a chapter on making Tobacco Beds into this number of our work, (No. 49 vol. 3, American Farmer,) from a French book, entitled "A Complete Treatise on the Culture, Manufacture and sale of Tobacco," published at Paris in the year 1791, by "An Old Planter;" and we commend many of the suggestions of this writer to the favourable regard of Tobacco planters generally, but particularly to those of this state, whose tobacco, if they would obtain a superior price, must be made of a bright colour; and we have always thought it necessary to plant early, even on new land, if they would make a great proportion of the crop bright or yellow.

An additional advantage which attends early planting is the greater safety of your crop, as its leaves escape the depredations of the late swarm or second glut of worms: the plants getting ripe and being housed before the worms appear.

The use of hot-beds was recommended to the tobacco planters of Maryland, sometime in the year 1819, by Thos. Law, Esq. Vice President of the Prince George's Agricultural Society, Md.—and we were informed, towards the close of the same year, that a

scientific agriculturist on Elk Ridge, Anne-Arundel co. Md. had actually and beneficially relied upon them for a part of his tobacco plants. About this time we procured the abovementioned "French Treatise," and by adverting to its suggestions, and the fact thus mentioned, we prevailed upon some gentlemen early in the year 1821, to try the experiment of raising a part of their plants upon hot-beds, roughly constructed in the fields, and they succeeded so well, that they intend this year to enlarge them sufficiently to raise plants enough to pitch their entire crops.... From one of these we have just received a letter, dated 5th MAY, from which we make the following extract:—"I have arranged my screw press so as better to deserve a patent than Frazier; my pressing may all be very expeditiously done by one hand. The arrangement would be very valuable to the Bowies, the Contees, the Minor's, &c. &c. If my ground had been ready I could yesterday have planted two acres from rough hot-beds made on the 5th of March last. I shall transplant from them this week however, without waiting for seasons."

"The plants, which I might have set out yesterday, have leaves each as large as a dollar, and with their stem and root measure four inches long. The field beds made at the same time will not give me plants fit to be removed under six weeks at the soonest, which brings me to the middle of June, when the sun has great influence, and planting seasons are precarious. Last year, depending chiefly on field beds, I pitched a large part of my crop in the first week of July, and was pressed closely by the frost, when housing this in October; but this year relying principally on rough hot-beds I shall plant my whole crop from these, and before the close of May. Whereas, if I had relied upon field beds this year I could not owing to some peculiarity of the spring, plant any part of my crop until late in June.

"The beds were made on the surface; probably they would have done better if sunk a foot, at bottom, below it. During frost they were covered with straw mats made about 3 inches thick and 5 or 6 feet square—the warp of white oak slips—straw for the filling, and this bound to the warp slips by passing a smaller slip band around the straw and warp. The mats were supported above the plats on a ridge pole 12 inches high, and laid on from each side, forming a comb *at top as roofs do*.

"My rough hot beds are long narrow pens of logs; they are about 2 feet high or two logs: 4 feet wide and the length of each of them about eighty feet, or 3 logs: they are near water, have a South exposure at the base of a forest hill; had long stable manure pressed down in them until one foot deep, and six inches of virgin soil on the top of this: once made they are easily renewed; for one bed of this year will top dress two the next; the logs are for years in place, when once fixed."

We last year saw tobacco more successfully cultivated in Baltimore county on drills than in hills, by the same planter; and he intends this year to make his drills closer on old land, and set his

plants nearer together, hoping thereby to improve the texture of the leaves, making them silky and thinner.

[*Translated from the French.*]

CHAP. XIII.

ON TOBACCO IN THE BEDS.

Tobacco remains in the beds about six weeks, the seed is sown about the 15th of March, and the plants are set out in the field during the month of May.

Sec. 1st. Of Beds in General.

The Hungarian peasantry always make their Tobacco beds against the south ends of their houses. These beds are enclosed by hurdles two feet high, at the bottom of which stones are laid, and on the outside of these, thorns are thickly placed, to exclude the moles; they fill this enclosure to the height of eighteen inches with fresh coarse manure, which they press closely by beating as they throw it on; and they cover this with finely pulverized earth, mixed with dung of the preceding year that had become soil: this second course or layer ought to be 8 or 10 inches thick. They do not regulate their time of sowing either by the moon, month, or the season, but by the holy week of the passing year; it is on *Good Friday*, that all of their beds are sown, and although this day may vary nearly one month in different years, they are faithful to their thermometer—their piety not permitting them to know any other. To the mysterious influence of this day, without regard to the season, they ascribe their success, and they generally succeed.

To protect their beds from the frost they strew on them thorns, or brush: dead leaves: rags; or stubble—and the most prudent cover them with mats, which are spread about six inches above the bed on cross pieces, which are supported by upright sticks driven into the bed, and forked at the top. The mats are made of straw, or of reeds in which the country abounds. They guard incessantly against the frost; but their houses all being roofed with straw they do not make any use of smoke, although it is the most simple and efficacious resource.

The proprietors make their beds in cases or pens which they have constructed on the spot, by means of stakes driven closely into the earth, and methodically arranged; the bottom protected as perfectly as the sides—so much do they fear the ravages of moles. The richer planters have their beds formed in cases of stone or brick masonry, covered with glazed sashes, which have to be repaired and renewed more frequently than the other parts; but these beds cost less to support or attend them, and the heat is best preserved in them. The dung is placed in these in the manner pursued by the peasants when making theirs; but the soil on the top is lighter and better, because it is passed through a finer sieve and at the same time mixed with tan, which forms the best of all composts as it

the most readily permits the roots to extend themselves. The sashes which protect these beds are sometimes glazed, but most frequently they are covered with paper, that has been twice varnished: others finish the sashes with paper which they have steeped in linseed oil, or which they have greased with mutton tallow over a chafing-dish containing a little fire; and finally, there are some who, omitting these details which have to be repaired in part or whole every year, shelter their beds with tilts or covers supported above them on triangular frames, formed of a ridge pole resting at each end on a pair of rafters, which are fixed on the plates; this forms a roof that will shed the rain, it may be spread or taken off at their pleasure, and is never in their way: when no longer useful they wash their tilts, and put them by for the next year. The last mentioned beds should be insulated; that we may, according to the weather, spread or withdraw the tilts which are always fastened at bottom, and care should be taken that the wind during storms may not raise or carry them away.

We will now give you a receipt for the size and the varnish, which should be put on the paper that it may resist the rains.

Recipe for the Size or Paste.

Glue $\frac{1}{2}$ oz, wheat flour 1 pint, water, a sufficient quantity. First dissolve the glue in hot water, then gradually add it to the flour, and then boil them to a proper consistency.

Recipe for the Varnish for the first coat.

Litharge 1 oz. minium $\frac{1}{2}$ oz, linseed oil $\frac{1}{2}$ pint, bees-wax $\frac{1}{2}$ oz. rosin 4 oz.

First pound the litharge and minium until they are very fine, then boil them with the linseed oil half an hour, on some coals; next add the wax and afterwards the rosin, and when these ingredients have dissolved in the mixture, permit it to cool for use.

Varnish for the second coat.

Litharge $\frac{1}{2}$ oz. linseed oil 1 gill. minium $\frac{1}{4}$ oz. bees wax $\frac{1}{4}$ oz. rosin 3 ozs.

This varnish is prepared and used precisely as the first—they are spread with a brush similar to that used for white washing, and the first coat must be perfectly dry before the second is laid on.

The best way to secure the beds, it appears to us, is with tilts; for the care to be taken of the plants in the bed is but an affair of six weeks; and these coverings do not prevent the use of straw mats as employed by the Hungarian peasants; the tilt in such cases serves only as an upper and outside cover: but this mode is infinitely preferable to any other, because it permits a free circulation of air beneath the cover, which causes the plants to grow more rapidly and become more hardy, than under sashes finished with glass or varnished paper, which are often injured by awkward persons, and are not easily repaired.

There is a third kind of bed, not less productive than the two preceding, and preferable to them; because instead of diminishing the quantity of manure on the plantation it increases this, and without causing any extraordinary labor, hauling or expense; for this purpose, procure good soil, pass it through a sieve, mix it with compost made the year before, and spread them to the height of one foot, upon the dunghill in the lower or barn yard previously made ready to receive it; then surround it with thorns or brush, leaving only a gate way to enter at—near to this there always is a pool or the well: this bed is sown and taken care of precisely as the other hot beds; it is safe from vermin; and nothing need prevent its being covered with straw mats, under tilts; in such beds the plants enjoy a current of air less subject to frost than they could elsewhere; besides they arrive at maturity in these, eight days earlier, and being near to the house they are better attended to. It is to be regretted that such beds can rarely be formed but upon large farms, where manure is abundantly made; for their first intention being accomplished, they are broken up and enlarge the manure-heap.

DIMENSIONS OF THE BEDS.

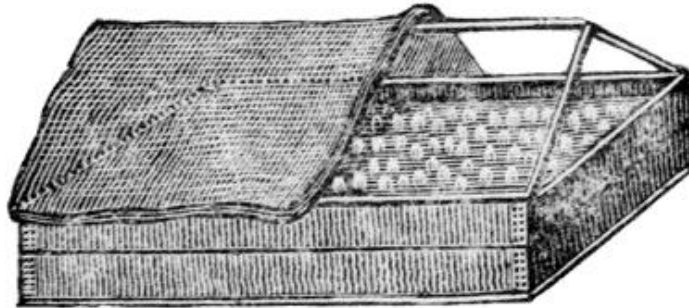
The size of the beds must be determined by the quantity of ground intended to be planted. Upon a small farm, where seven acres are annually put in tobacco, worked ordinarily by three persons, half an acre may be planted per day; on this surface nearly 2500 plants may grow, and be 3 feet apart each way; to this number we should add enough for replanting as some always will—and many may perish; and we think it best to provide three times as many in the beds as you intend to raise in the fields, so that in case all of your two first plantings are cut off by frost or vermin, you may still have plants for a third; provide therefore, on your beds 15,000 plants for each acre that you intend to cultivate in Tobacco.

Each plant ought to be allowed a square inch on the surface of your beds, that they may grow readily—at this rate the surface of your beds should measure nearly 105 feet, of 144 square inches, multiplied by the number of acres which are to be planted—so that the dimensions, and I think the best form also of a bed, upon which to rest a threefold hope, as it gives as many chances of securing a crop of tobacco from an acre of ground, are 35 in length by 3 feet wide: but whatever may be the length or number of your beds, let them in all cases be insulated, and we advise you to make them only three feet wide, *that even children* placed at each side may first weed, then thin, and afterwards draw the plants without doing any injury.

If you expect to plant your crop of tobacco at ten or fourteen days or times, you should divide the surface of your beds into as many sections, by some permanent mark; because, as you will plant your field on ten or fourteen different days, so you should sow a rateable part of your beds on the like number of days. The beds should be at least eighteen inches high, but never more than two

feet ; they should be enclosed by a fence at the distance, on all sides, of about five feet ; be placed in the most sheltered situation, and as near as possible to your dwelling.

Here is the form of a tobacco bed in its casing, without sashes, but partly covered by a tilt, which we think preferable to the use of sashes either glazed or finished with varnished paper.



SOWING THE BEDS.

SECTION III.

Each country, and even each district has its method of sowing ; some persons mix ashes with their seed, others add sand ; and in some places they use compost or tan ; snuff, bones ground to dust, or salt pounded very fine ; each one believes that his own plan is the best, and adopts it with a hope of destroying the fly or flea, which make their appearance with the young plants ; and likewise for the purpose of enabling him so to spread the seed as that the plants shall not be too much crowded.

The quantity of these foreign matters thus mixed with the seed are equally different ; some add six times the quantity of the seed, others nine, ten, twelve, &c. but for this there is no rule, however, the following directions may be safely pursued.

The bed being well made and well watered the day before, the soil on which you are to sow being nine or even twelve inches deep ; the surface is made smooth by slightly passing a board across and on every part of it—in performing this operation there should be a person on each side of the bed ; then scatter ashes through a sieve over the whole surface until it becomes of a grey colour, then smooth this coat by again lightly pressing the board across the bed ; finally, when sowing, you will use two boards twelve inches broad, and as long as your bed is wide ; commence at either end, lay one board on, twelve inches from this end, so as to leave a space one foot wide between them uncovered ; the seed being in a parchment sieve with but few holes in it, and these so small that only one seed can pass through at a time, you will shake the sieve over this narrow space, and as the brown colour of the seed enables you to distinguish it on the ashes, you can easily regulate the quantity according to your wishes, and sow more on places which require it. The first part of the section finished, the board is raised, and laid down on the part just sown ; the second board is then placed one foot from the first, and the intermediate space is sown ; the first board is again

raised and placed a foot from the second ; and you will thus continue to sow as many spaces as there are feet in the length of your beds. You might make fewer spaces by placing the boards farther apart ; but in such cases we have always observed that these are not so regularly sown, and that the little extra time bestowed by sowing on smaller spaces is amply compensated by a greater deliberation in sowing, which more readily allows you to perceive when there is enough seed, or where more is wanting.

Care of the plants in the Beds.

The sowing finished, the seed should be covered with virgin earth, or compost ; mixed with tan if you have it, else with dry and pulverised horse dung : this coat should not be more than six lines thick ; the plants will rise the sooner through it, which is a benefit ; and besides, after they have appeared you can lay on another coat which will invigorate them surprizingly, and you may repeat this whenever they appear to grow too high or spindling.

These successive coats or coverings should always be applied through a sieve, and when they are finished, fail not to water the bed well ; the best irrigation would be a rain, but in the absence of this we should imitate it by putting a nosle on the watering pot with but few and very small holes in it, and holding this when we water the beds as close as possible to the plants.

Attentive cultivators cross the beds at every two feet of its length with packthread, to serve them as boundaries, watering regularly from one thread to the next, and it is very certain that they are well rewarded for this little care by the beautiful condition of their beds.

If the fly appears with the rising plants, a new coat of compost, in which you have mixed some salt reduced to an impalpable powder, will kill or overpower them* ; this is an advantage which those persons cannot enjoy who put several inches of earth on the seed at the time of sowing, and through which they rise with much greater difficulty.

Your plants will scarce have appeared before the bed will be covered with weeds, but let them grow until they can be readily distinguished from the tobacco plants, make your children familiar with the appearance of these, and then by little rewards teach them to rid the beds of weeds—their little hands can pick them out better than we could, and when they once understand it, the beds will be more exactly weeded, if we overlook and encourage them.

Next teach them to distinguish the best plants, to observe where

* “ 40 bushels of salt weighing 56 lbs. each, or together 2240 lbs ; if strewed over an acre of ground, or 4840 square yards, would destroy the vegetation thereon ; but 20 bushels weighing 1120 lbs. have been advantageously sown upon an acre of wheat ;” see essay on Salt as a Manure, page 26, published for G. W. Johnson, London, 1820. From these assertions we may conclude that if the several applications of salt on the surface of the tobacco beds, do not in one season or year exceed one-fourth of a pound to the square yard, the salt will do no injury to the plants.

they are too closely sown, and to thin them by always removing the most indifferent, until each of those which remain on the bed shall only have a surface of about one square inch to grow upon ; little girls are peculiarly handy at this employment.

That children may be employed for these purposes, you should be careful not to make your beds higher than two feet, nor wider than three.

And the hotter the dung laid at the bottom of your beds, the thicker you should make the covering of earth on which to sow your seed ; sheep manure is said to be the best and hottest, horse litter the next, and last of all that of Cows.

The seeding being once finished, the beds should be watered every day ; that the plants may have time to rise slowly and become strong ; if they are too much forced by heat they will grow up spindling ; if regularly watered they will have better roots, and may be left a week longer on the beds ; for this delay they will amply repay you, when they are transplanted.

Your subsequent attentions will be turned to keeping the enclosures of your beds shut, so that no person shall enter them unless to work there ; never use any other than rain or river water, unless you have none but that of a well, in which case draw this a day before you use it ; every evening cover the beds with straw mats raised but a few inches, and envelope the whole with tilts ; you should carefully exclude the cats, for they delight to lay upon the tender plants and warm surface of the beds. You ought to have rendered it impossible for the moles to enter, by having made the casing of the beds every where perfect ; you should take care that the children do not waste or pilfer your plants.

You will make war upon the fly and other insects by the means before mentioned ; and never hasten the growth of your plants by any extraordinary means ; the open air, light and sunshine should be allowed them whenever the weather will permit ; always covering them again before sunset ; and you should now lose no time in preparing your grounds, finishing your trenches after filling them with rubbish ; *you will mark even the places which are to receive the plants ; but in this case the holes are to be made with a large dibble that they may be filled with compost and the plants be inserted, using a smaller dibble.* Six weeks give time enough, in which to make all these preparations, and the plants ordinarily remain that long in the beds ; finally, about the tenth day of May, they ought to be nearly two inches high, have five or six leaves each, forming a round top, their roots straight and strong ; the whole plant well formed, will be six inches long, including the roots, these should be free from knots and have acquired a good length. When your plants are in this state, it is better to plant early than late, nor should you ever forget that the plants set out in the month of May, are always best furnished with leaves, and that nothing can compensate a planter for the loss of this precious month, the month of May.

THE END.