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AGRICULTURAL AND HORTICULTURAL CLUB.

ORCHARDING.

The following is the paper read by Mr. George Leslie on Thursday April 3d, at the meeting of the Central Horticultural and Agricultural Club, in continuation of a former paper, on Orcharding and Fruit Culture:—

In my remarks on orcharding and fruit culture on the 5th March, I endeavoured to explain briefly the nature, and the process of preparing the ground, planting distance, mulching, pruning, &c., I proposed in continuation of the subject, to make a few observations on the following important points, namely: Manuring and after management of an orchard, diseases, costs and profits of an orchard, with a few remarks on gathering, preserving and marketing of fruit.

First then, MANURING AND AFTER MANAGEMENT OF AN ORCHARD.

Where the soil for an orchard has been properly prepared and cropped with green crops, the manure necessary for growing these crops will naturally help the trees; but no season should be lost without annual manuring of the trees, and this should be done early in November. It may be done cheaply and expeditiously in the following manner: Take a waggon load of barn-yard or stable manure, driving close along-side one row of trees after another, throwing out about a wheel-barrow full more or less, according to the size of the tree, and the next November it should be dug in by a fork, and renewed every year. The kind of manure should be changed two or three years after the orchard is planted. There are manures and composts of various sorts recommended for fruit trees, all of which are good if properly applied. For the last ten years I have used swamp muck, ashes, leached and unleached, cow-dung and lime, all mixed together and laid over for a year, and find it superior for all-kinds of trees. The lamented Dowling, who has done more than any other man to create a taste for fruit culture, recommended the following mixtures for fruit trees after they are well established in the orchard: For apple trees, to every cart load of muck or peat, five bushels unleached ashes, and two bushels good air slaked lime; for pear trees, to every cart load of peat and ashes add a bushel of ground bones; for plums the same, adding a peck of salt. These, I believe, will produce the fairest fruit, and are not so liable to create insects as pure manure. Indeed, how to prepare and apply manure is a matter in which every cultivator of the soil must feel interested. It matters not to what expense and trouble we go to procure the finest fruits and vegetables, unless we study the nature of our soil and the manure to apply to it, we must fail to a certain extent. Solid manures and composts of every kind should be applied in the autumn so that during winter and spring they may be dissolved and fitted to yield nutriment to plants when active growth commences. The snow and rains of winter and spring dissolve and wash down its most soluble parts, and place them within the reach of the roots by the time they are ready to take them up. These are the main points with regard to manure, and the remark is merely intended to draw attention to their importance.

Young trees when they start to grow, should receive an annual pruning and washing of their stems and the thick part of the limbs with soft soap reduced one-half, and also a scraping and cleaning from filth of all sorts from the bark of the trees, to prevent the lodgment of insects. After management of trees consists in the cultivation of the soil among the trees, and pruning them to regulate their growth. For the first five or six years after planting, the ground among orchard trees may be advantageously cropped with potatoes, turnips, carrots and mangel wurzel. This will assist in defraying the expenses of the orchard. Grain crops should never be planted among trees, as they prevent the circulation of air which is so necessary to them. There is one fatal error common to most people in planting fruit trees, which is, that they never can get trees tall enough. When they go to the nursery to procure trees they pick out those that have eight to nine feet stem. Such trees, let me tell you honestly, will never be profitable, because, if they live, when they begin to bear, they get top-heavy, and the fruit is sure to be blown off by storms. Standard trees for a good profitable orchard should never be more than four feet stem. The plough will get as near to the roots of trees four feet high as it should to trees ten feet high. I make these remarks here in order to show, if possible, the foolishness of having high stemmed trees for a profitable orchard.

DISEASES.—In addition to the obstacles of the cultivation of fruit, the special difficulties of diseases, and the attacks of insects require to be well attended to. The work of destruction from either of these causes is often rapid and complete, but if watched, and proper remedies applied promptly, each of these may generally be overcome without great loss. The great evil is delay; insects multiply with such astonishing rapidity, and diseases spread so rapidly, that the dilatory man sees his fruit and his trees pass away before he is fully awake to the danger. Be sure to meet these foes at their first appearance and commonly you will get the better of them but if once they get established it will be hard to get rid of them.

FIRE BLIGHT—is a disease that is not very common in apple orchards in this country, but in the States of New York and Ohio, three years ago, it threatened to destroy thousands of orchards, and cut away all the pear trees about Cincinnati. Its ravages are confined to apple, pear, and quince trees. I have heard no complaint about the disease among apple trees in Canada, but I have seen great ravages done by it among pear trees, large and small, in my own nursery. It generally makes its appearance on the young shoots, or smaller branches, causing them to turn black and die in a few minutes. It is very contagious, and spreads like wild-fire, and the only remedy is quick amputation and that without hesitation, down to the ground, if required.

BLACK KNOT OR WART ON THE PLUM.—This disease is truly fearful in some sections of the country. I travelled a good deal during the last winter, and found the plums dying everywhere. Its first appearance is in the shape of a wart during the summer, and increasing during the growing season, which in winter becomes black and very unsightly, as far as my observation goes. It is pretty nearly confined to the common blue plum, so much grown in this country.

The remedy for this is the same as for fire-blight—namely, cut off all affected limbs, and burn them. I have found no difficulty in keeping my trees free from it, by cutting the wart clean out with my knife, and applying a plaster of cow-dung and ashes.

BURSTING OF THE BARK OF CHERRY TREES.—This is a disease common to all cherry trees in Canada that have a high naked trunk. It is supposed to be caused by the action of the frost and sun in the month of March. I find by various accounts from different parts of the country that dwarf trees are not subject to the bursting of the bark; and I am inclined to this belief, as my own dwarf trees have always kept free from it.

I have known cures by removing the dead bark and gum, and applying a plaster of cow-dung, tied round with a bandage to keep it in its place. Mr. Barry prefers a plaster of grafting-wax, or a solution of gum shellac put on with a brush, as recommended by Mr. Downing.

INSECTS THAT ARE INJURIOUS TO FRUIT TREES.—BARK LOUSE.—This is a brown flat scale, often the same colour as the bark of the tree, and is not seen easily unless looked for. It attaches itself to the bark of the tree, and is more injurious to apple trees than any other insect. It preys most severely on sickly stunted trees. Where they are thick, the only remedy is to scrape them off with a sharp instrument, and wash with soft soap and tobacco juice.

THE APPLE TREE BORER.—I find this insect is troublesome in some sections of the country. I never heard of it doing any harm in this neighbourhood, until last year, though it has been known in the States for a number of years. Downing says it is a striped brown and white beetle, and is three quarters of an inch long. It deposits its eggs in June, in the bark of the tree near the ground. Here the larva is hatched, and becomes a whitish grub, which saws its way into the tree, sometimes girding it completely round. The most effectual method of destroying it, is to insert a small wire into its burrow and kill it.

Since writing the above, I have received a communication from W. Allan, Esquire, Cheltenham, wishing information about a certain insect that destroys great numbers of fruit trees in his neighbourhood, working its way between the bark and the tree, eating the inner bark, and sometimes girding the trees all around. This I think is nothing more or less than the apple tree borer described above. When lately in Streetsville, a gentleman told me that he had lost a number of trees by the same insect. Trees in the neighbourhood where this insect works, should be kept clean and smooth near the ground thereby preventing a lodgment for the eggs, with a sharp look out with a wire or a shoemaker's awl, piercing into all the small holes.

THE APPLE WORM.—This insect deposits its eggs in the eye or calyx of the young fruit. The grub is there hatched, and eats its way into the fruit, leaving behind it a brown powder, the fruit sometimes dropping off before it is half grown. Early apples are more subject to be affected than late ones, because they are in a more forward state when the eggs are deposited.

Professor Harris says, when the fruit falls to the ground, the grub leaves immediately prepares itself a place in some crevice in the bark of the tree, and spins a paper like a cocoon in which it spends the winter, and comes out in spring. There are two ways of destroying this insect—one at pruning-time in April, to search carefully for the cocoons and destroy them, the other is to pick up all fallen fruit and feed them to the pigs, or otherwise destroy them. The increase of this insect is creating great alarm among fruit-growers in the Southern States.

CATERPILLARS.—Of these there are many kinds more or less destructive to fruit trees; some are large, jet-black, and others striped of all colours. They are soon observed, and when they commence feeding on the foliage, they weave themselves a bag to live in during the heat of the day. In the evening they spread out on the leaves till they fill themselves, then return to their bag again. They are easily destroyed by cutting off the branch they live on, or take bag and all, and put them in a tub of water.

THE CHERRY AND PEAR SLUG.—This is a most destructive insect, which appears for the first time in June and July, and a second brood afterwards. They are small, slimy, dark brown insects, like snails, on the upper sides of the leaves of cherries and pears, and sometimes on plums and quinces. They devour the leaves rapidly, leaving only the bare net-work, which stops the growth immediately. We destroy them by throwing dry earth, ashes or lime on them with the hand, and if they are looked after in time, they are easily overcome.

THE CURCULIO, OR PLUM WEEVIL.—This is a small greyish brown beetle, a quarter of an inch in length, with wings and power of flying, but is not at all active, and by jarring the tree, or a branch of it at a time, they suddenly fall to the ground, draw in their legs and appear to be dead. It is the most troublesome of all insects injurious to fruit. They destroy nine-tenths of the plum crops all over America, and sometimes attack the peach, nectarine, apricot, and even the cherry. I shall say but little about this worst of all insects; it has baffled the world; volumes have been written about it, and no effectual remedy found out. The only, but too troublesome way to destroy them, is by spreading a sheet under the tree, and shaking or jarring it. This operation must be done about dark in the evening, or very early in the morning.

There are a few animals that are injurious to fruit trees.

BIRDS.—The early cherries are generally the greatest sufferers from birds, and various modes are taken to frighten them away; but as a general thing, birds do more good than harm, as they pick up insects that would otherwise destroy a large quantity of fruit and vegetables.

FIELD MICE.—The most effectual way to prevent depredations from field mice, is clean culture. If you leave no grass, weeds, rubbish, heaps of brush or stones around the

garden or orchard, the mice will not trouble you. A good old plan, also, is to tread the snow after falling.

In these few remarks on diseases and insects, I only mention those more common in our own country.

COST AND PROFITS OF AN ORCHARD.—For information on this subject, I must go abroad to older countries and older fruit-growers than we are, and in doing this, I think I cannot quote or refer you to a more intelligent class of fruit-growers than "The Fruit-Growers' Society" of New York State, and I may say a more intelligent convention perhaps never sat in any country, to discuss the costs and profits of Orcharding. This congress of fruit-growers was composed of two members from each county in the State of New York. They met at Rochester, and sat two days, in February, 1856. Their proceedings are published in a pamphlet form, and ought to be in the hands of every fruit-grower in the country. I think I cannot do better here than to allude to some of their remarks on the profits of fruit-culture, as applicable to our own country. The first question discussed was, "Can the cultivation of fruits for market, on an extensive scale, be recommended to the farmers of Western New York."

[Mr. Leslie read at some length from the report of the New York Convention, but as the circumstances of the two countries are somewhat different, it is enough to state that the conclusion arrived at was, that fruit-growing was profitable; we need not quote the extracts.]

I have now endeavoured to give you the experience of the older and more intelligent fruit cultivators in the States, in order to show the cost and profit of fruit-growing; and I believe they are correct in all they say. They estimate the value of fruit so low, that any one must believe it. They, however, boast of the fair complexion of their fruit; but I am proud to say we can beat them in Canada in what Downing calls "the renowned fruit of the civilized world," the apple. I know this, as I have seen theirs and ours side by side more than once at our Provincial Exhibitions; and some gentlemen here present know this to be true. The object of this Society is, and always should be, to elicit all the information on the subject we can, and bring it publicly before the people of this country. We should at once establish a Provincial Pomological or Fruit-Growing Society, the object of which should be the advancement of the science of Pomology and the art of Fruit Culture, to meet once a year where the Provincial Exhibition is held, and each county to send one or two delegates with specimens of fruit, with all local names to be corrected by this Society.

GATHERING, PRESERVING, AND MARKETING OF FRUIT, are questions of the greatest importance to the fruit-grower, and are worthy of serious attention. How many of those who have orchards, and a little fruit to spare, know how and when to gather it, in order to secure a good price and ready sale? Those who grow for the market, must, therefore, make up their minds at once to prepare their fruit properly, just as farmers prepare their other productions for market. I always observed that when fruit is offered in barrels or baskets without a bruise, it commands a good price; while another, who has shaken his fruit, thrown it into a waggon-box, and brought it into the market in this condition, can hardly give it away. All the fruit that is grown, and ten times as much more, would not be enough to supply the public wants, was it all properly ripened and cared for. With a majority of those who supply our market with fruit, it is not a profession, but a sort of subordinate, incidental business; they think other branches of their pursuits are more important, and the fruits are passed over hurriedly and carelessly, the object being to get rid of them with the least possible waste of time. Fruit for market should be always assorted into grades, and never mixed and put into bags. In gathering summer apples and pears for market, the barrel or basket in which they are to be carried to market should be taken to the tree, the fruit hand-picked and carefully put into the barrel. Fallen and bruised ones should be put into a separate cask. Fall and winter fruit, as a general thing, should be gathered about the tenth of October. Barrels should be provided, and taken to the trees; also good step-ladders. Pick into small baskets, and fill the barrels, every sort by itself, keeping out the small ones, as they would materially injure the sale of the others. Head up the barrels and mark the sorts; carry them to a barn or shed till frost sets in, then put them into a dry, cool cellar, selling all fall fruit in proper time. Every one should ascertain the keeping qualities of his sorts, and never dispose of keeping fruit in the fall, for one barrel of apples in May, is worth two in November. In these brief remarks, I have alluded more especially to the staple fruit of

the country. A great deal more might be said on the gathering, preserving, and marketing of fruit, but I fear that I have already trespassed on your time for discussion on the different points alluded to.

After the reading of Mr. Leslie's paper, some conversation took place among the members of the Club, upon the subject of fruit culture.

Mr. Leslie in reply to questions, said that he considered the estimates as to productiveness stated in his paper very low. He had known thirty-two barrels of apples to be gathered from three trees in a single year. Such productiveness, however, would not take place two successive years. Trees in Canada would not fail to produce on an average two barrels each. He thought trees in an orchard should not stand more than twenty-five feet apart. When close together they afford mutual protection, and thrived better than under other circumstances.

The Chairman (E. W. Thompson,) asked Mr. Leslie how long he would expect to wait before obtaining a barrel from each tree.

Mr. Leslie said about eight years, although much would depend upon the care bestowed. The produce of the ground in the meantime would repay the labour of cultivation. The best crops are produced from among the trees, and the abstraction from the soil of the nutriment required will not injure the trees. Root crops are to be preferred.

Mr. McDougall said that there was no doubt as to the question whether the cultivation of fruit should be recommended to the farmers of the country or not. That point has been settled in the affirmative. The expediency of setting out orchards should not be discussed merely on the ground of pecuniary gain. Fruit is generally allowed to be essential to health, and to be the natural food of man, though in these northern latitudes he probably requires animal food also. In another point of view, looking at the matter in its ornamental aspect, what is more pleasant to behold than a flourishing orchard with its luscious fruit? In Canada, great difficulty has been experienced in raising apple-trees. They are a long time in bearing, and then yield but little fruit. This was not altogether owing to neglect in cultivation. He was inclined to believe there was something wrong in the tree itself. It had been stated at more than one meeting of fruit-growers in the eastern States that root grafted trees had proved a failure. He would like to know whether it was the practice among nurserymen here to raise trees in this way. He had been told by a practical man that when a scion is placed in the first or upper section of the root it grows far more vigorously than in the lower part. Does not this show that there is a difference in the organisation of the root itself? If so, it would account for the fact that some flourish while others do not. Trees are frequently purchased of travelling peddlers, from the neighboring States, who come here with the refuse of American nurseries. It would be better to purchase of nurserymen nearer home, on whose representations we can rely, and who have a reputation to maintain. It has been stated by a Mr. Field, before the New York Farmer's Club, that if trees are raised in a pyramidal or conical form and with no more of stem than is necessary, that they will begin to bear in a much shorter time, and yield better fruit. The tree may be shorter lived, but it would pay to follow this method, and set out trees more frequently. With regard to the apple borer, he had lately seen it stated that the insect is attracted to the tree by an odour exhaled from the bark in consequence of its exposure to the sun. If the tree was grown close to the ground the evil would in some degree be obviated.

Mr. Leslie said that apple-trees grafted in the root were, in his opinion sounder trees than when grafted above ground.

Mr. Grey said that he was not in favor of root grafting. One plant out of three might grow strong. He agreed with Mr. McDougall, that the system of growing trees with tall stems was not good. The apple borer might be kept from the trees by throwing a small quantity of lime about them. People do not take sufficient care to obtain the best varieties of trees. He would recommend as the best for this country, the Baldwin apple, the Rhode Island Greening, and some others, the names of which our reporter did not catch.

In reply to a question Mr. Leslie stated that the blight upon plum trees, of which he had made mention in his paper, was not caused by the curculio: it is itself a disease. The curculio merely attacks the fruit. The native plum is not liable to the blight. The common blue plum is most liable to be affected with it.

Mr. McDougall said one way to prevent the ravages of the curculio was to plant the trees near a stream or body of water. The instinct of the curculio will lead it to avoid fruit

that when it drops will fall into the water. Of course this was a remedy that could only be adopted in certain situations. Mr. Dennison and one or two other gentlemen thought that the advantage of this plan consisted in the fact, that the plums as they fall are carried away by the water; if the fallen plums are carefully gathered and destroyed, a good crop may be obtained in the ensuing year. The fine kinds of plums are most likely to be attacked.

Mr. Grey said that in the best nurseries of England plum trees are frequently washed with soapsuds and sulphur, which has the effect of destroying insects of all kinds. He thought that sulphur was not used so much as it ought to be, on all kinds of fruit trees. Plum trees that blossom regularly and bear little or no fruit, may be rendered productive by boring in them a tube two or three inches deep, filling it with sulphur and stopping it up.

Mr. Fleming said the ravages of the curculio could not be so prevented. The insect flies to the tree, and the only way to keep it off would be to fumigate the air. In answer to a question, he said he would cultivate the ground under cherry trees to the highest possible degree. In regard to apple trees, he was not in favour of root grafting; his opinion was of sowing the seed and transplanting into rows, and after the trees have been growing two years then to bud them. When the tree is first taken up the tap root is cut, and at the next transplanting there will be a mass of fibrous roots which will ensure a vigorous growth.

Professor Croft, R. L. Dennison, Mr. Fisher, and other members joined in the conversation, which lasted for some time. A vote of thanks was given to Mr. Leslie for his paper, and it was announced that Mr. Dennison would read a paper at the next meeting, on "The Horse."

CAKED UDDER—ARNICA.—Under this caption in the *Country Gentleman* of the 12th inst., the tincture of arnica was spoken of as having proved highly efficacious in a case of this kind, and doubtless it might prove so often in similar cases, as well as in bruises and injuries unattended with flesh wounds. It may be prepared by digesting for four days, two ounces of the flowers of Leopard's bane (*Arnica montana*) in a pint of alcohol, and filtering the solution. This preparation has long been in use among German practitioners, for a variety of affections, and is used both internally and externally; from its efficacy in bruises, &c., it has received the title of *panacea lapsorum*. Preparations under the name of arnica have entered largely into the prescriptions of homœopathic practitioners; but if we are to understand that their practice is restricted to the use of infinitesimal doses, the instance in consideration would seem to have been entirely without any such limits.

Probably most of the liniments in common use for the human species, would prove efficacious if applied to domestic animals. Among these we may mention the compound tincture of soap, (liquid opodeldoc) which may be used in cases where a liniment is required, either alone or combined, when there is much pain, with a third or an equal quantity of tincture of *aconite root*, or with the same quantity of laudanum, or of tincture of arnica. The compound tincture of soap may be also usefully combined with one-fourth the quantity of oil of *origanon*, or oil of cedar, or with *aqua ammonia*, and used as a liniment.

These substances can usually be obtained of any apothecary. B. Providence, R. I.

MEASURING HAY.—The editor of the *New Jersey Farmer* gives his rule, based on a large experience, for measuring hay. He formerly weighed his hay. But repeated trials taught him that this was unnecessary. Take a mow which has lain through the winter, and ascertain its amount in cubic feet, (multiplying its width by its depth, and that product by its length,) and then divide by 700, and the quotient gives the number of tons. The upper third takes 800 feet to the ton; the lower, 600 feet, making the mean 700 feet. If the mow is only five or six feet deep, however, it takes an average of 800 feet to the ton.

Great Britain keeps 35,000,000 sheep on 77,000,000 acres, and France the same number on 132,000,000. Great Britain slaughters 10,000,000 sheep, averaging 80 pounds of neat meat, yearly, and France only 8,000,000, averaging but 40 pounds. The average return of an English sheep farm is fully six times greater than that of a French one.

CULTIVATION OF POTATOES.

The following paper was read before the York Township Farmer's Club, a few months ago, by Mr. Wm. Lee. It is appropriate to the present season, and we therefore lay it before our readers:—

Mr. President and Gentlemen,—The Potato is yearly increasing in importance to the farmer in this vicinity. The increasing population of our cities, towns and frontier townships, will always demand a large supply of so necessary an article. Let our tables be ever so bountifully supplied with the necessaries and even the luxuries of life, without a dish of these best of all vegetable pills, we should feel a loss which no other vegetable could fully supply.

Though the potato may not have found much favor on its first introduction into England by Sir Walter Raleigh, yet it has now become an almost indispensable article of food, and is said to be one of the most precious gifts of the new world to the old. It is very extensively cultivated, and was considered peculiarly free and safe from those dangers and accidents which other crops were subject to. It has now however become one of the most precarious and uncertain products, since that dire disease, the potato rot, has yearly destroyed such a breadth of crop; so much so, that at certain times potatoes were not to be got, even in this new and bountiful country, for either love or money. So much have they become a part of the food of the people, that their consumption would go on in spite of the price if they were to be had. It becomes our duty and our interest to try every means within our reach, to restore this valuable plant to its original healthy condition. Many have been the causes assigned for this failure in the potato crop, and many have been the suggestions for a remedy, both by science, and also by practice. But as yet neither the cause of the disease nor the remedy, has been found out. However, let us not despair. Perseverance overcomes most difficulties. This is an age of progress; many wonderful things in science and the arts, have been found out; and why not in the science of Agriculture. Some of the first minds in the world are engaged in it, and are bringing science to their aid. Let us be patient and persevere, in well doing, and there is not the least doubt, but by careful management, by selecting the best seed, preparing the ground in the best possible manner, according to the best of our knowledge; that we shall succeed in making potato growing a fair remunerating branch of our business.

Now, sir, I will explain to you my practice in growing potatoes. It is always in our discussions, best to give our own experience, what we know from our own practice to be facts. These are worth more to us, than whole volumes of opinions, or theories, from others.

First, then, the preparing of the land. An old grass field is best—neither too wet nor too dry—a good deep, strong furrow should be ploughed—if clayey, in the fall, so that the frosts of winter may assist in mellowing and making the land fine. If the land is light or sandy loam, the spring ploughing is the best. As soon as the ground is in order in the spring, harrow well, and then sow with oats or peas, and harrow again, crosswise, several times. There is no danger of over-doing it, if the ground is dry. A top dressing of plaster will always do good. After the crop comes off a good coating of barnyard manure should be applied—from 15 to 20 tons to the acre, spread evenly over the surface, and ploughed in as deep as possible, so as to effectually cover the manure as fast as it is applied. The ground thus prepared is left in its rough state until the following spring, and then as soon as it is sufficiently dry to work it is well harrowed, and left a few days. It is then crop ploughed, or worked with the cultivator until the earth is finely pulverized.

The Planting and Working.—The drills are now drawn out with a single furrow thirty inches deep; the seed is dropped in the furrow, from eight to ten inches apart. If the field is clear from weed seeds, a brush made of small bushes is drawn crosswise of the drills. This process covers the seed sufficiently, and the field is left until the potatoes are up two or three inches, when the drill hoe is run between the rows, and the weeds between the plants are taken out by hand. After remaining a week they are molded with a double moldboard plough. This should be done immediately after a shower of rain, and the potatoes will not suffer so much from dry weather, as they will soon cover the earth and prevent the evaporation which the sun would otherwise produce. In a few days they are gone through again with a hand hoe to take out any remaining weeds that may

have escaped the first hoeing. They are then left to grow, and will soon cover the ground so as to effectually smother any weed that may show its head. If the ground is likely to be very weedy it is better to cover the seed with a plough, throwing only one furrow on each drill, and then harrowing down lengthwise with a bush just as the potatoes begin to appear above the earth.

Last spring I planted about two acres with Anderson's Potato Planter, but the machine was so badly made that I was obliged to stop and plant the remainder by hand. However I believe that a good potato planter would be a great benefit; the piece planted with the planter got the start of that planted by hand, and continued about a week a-head, although only planted one day before, and at the digging turned out the best crop. The cause I assign for the Planter's superiority is its making the drill, dropping in the seed, and covering it immediately, before the sun has time to dry the earth, which was not the case with those dropped by hand, which had necessarily to remain open some hours exposed to a very hot sun, which dried the earth so much that it must have been some time before a sufficiency of moisture would be generated to act on the seed sufficiently to cause it to grow.

Sorting and Preparing the Seed.—Two sorts of seed is used, small potatoes and cut seed from large ones. The small potatoes are sorted from those grown from the cut seed from one inch to one and a half inches in diameter—not smaller—these are planted whole and no seed is saved from them. The cut seed is sorted from the best large potatoes, the best shaped and the healthiest in appearance, cut into good large sized sets, two or three weeks before planting, thrown into a heap on the floor of an outhouse, turned over two or three times, and a little plaster thrown over them each time they are turned. This turning dries them equally, and they form a skin on the cut portion of the set, which is a protection to them when planted. By these means the seed is kept pure from mixture with other kinds. By selecting the best, and largest each year to procure seed from, the potatoes do not degenerate; neither do they require changing so often, that is, fetching from a distance, for a change of soil and climate. I have a kind of potatoes (Shaw's seedlings) in my possession, which I have grown ten years on the same farm, and instead of degenerating, they have rather improved. They are a summer and fall potato, and crop exceedingly well; they are an excellent potato in their season, but not good for eating in winter and spring.

Digging, Storing and Keeping.—Potatoes should, if possible, be dug in dry weather, and allowed to lie on the earth, some time to dry, then gathered carefully, and carried in barrels in a waggon. If they are not perfectly dry they should be taken to a building where they can be spread on the floor until they are thoroughly dried. Then a pit may be prepared in the following manner. Choose a dry, sandy knoll, if possible, and dig a trench eighteen inches deep by three feet wide, and as long as required, throwing the soil out in equal parts on each side, then line the bottom with boards, and lay the potatoes in the trench, heaping them up in the centre until about the form of the roof of a house. When you have them thus prepared, take straw and lay it on the top in the same manner as if you were going to thatch, to about the thickness of six inches when pressed close. They should be covered very lightly with earth on each side, and left open along the ridge, and a board laid on to keep out the rain: when hard frost sets in earth up all over, eighteen inches thick, and cover over the earth one foot thick with straw, weeds or short litter of any kind, which will keep the snow from blowing off, and effectually keep out the hardest frost. I have never yet lost any potatoes when pitted in this manner more than what will ordinarily rot by keeping; they always turn out in the spring in beautiful condition, and as fresh and good as when put in. Potatoes for eating keep better stored in this manner than stored in a cellar. The light and air cause them to have a bitter taste, and if they are warm to grow.

If a sandy knoll cannot be got to make a trench on, mix some lime and sawdust, or ashes and sawdust together, and spread amongst the potatoes as they are being put into the pit. This will absorb the moisture and assist in keeping them dry, which is indispensable to their keeping in good condition.

Some members of the Club having expressed a wish that I should give my opinion with regard to the potato disease: I proceed to do so, not that I expect to throw much light on the subject. I will, however, state a few facts that have come under my observation. My own potato crops, the last few years, have been generally free from the rot, with some exceptions; my land that was planted is flat, with a clay subsoil, consequently the water lies on it late in the spring; some seasons the crop could not be got in until

June, and some patches not until the middle of June. In digging the potatoes, I have invariably found that when there was any disease, it has always been on the lowest and wettest places. On the dry parts of the field, there never has been the least sign of the rot that I am aware of. Last spring I planted one and a half acres with large potatoes to raise seed from. The land was very wet and low, a black sandy loam with a quicksand subsoil. This piece was planted about the middle of June, and came up quick and grew very luxuriantly, promising a heavy crop. It was rather late in the fall when they were taken up. There was a heavy crop, but so diseased that they were scarcely worth digging. I had no loss in any other field, though I had upwards of 18 acres besides. I have observed that if the potatoes are not got out of ground before the heavy fall rains, they are almost sure to be more or less diseased. The excess of moisture in the earth seems to have a very bad effect.

From the above observations, I infer that the cause of the disease, to some extent, at least, is a superabundance of top water, and a cold, hard subsoil underneath, and I strongly recommend as, at least, a partial remedy, thorough under-draining, and subsoil ploughing. The drains should be laid in deep, with good pipe draining tile, each drain left open at each end to allow a free circulation of air through the drains, and consequently through the soil. The sub-soiling should be deep and well done. This would take off the top water, and permit much earlier planting. The circulation of air through the drains and soil would keep the ground moist, and prevent injuries to the crop from long continued droughts. The sub-soiling would loosen the earth to a sufficient depth for the roots to strike down, and obtain moisture and food from below. The thorough draining and sub-soiling will prevent the early frosts, in a great measure, which are so injurious to the crops that ripen late in the fall. If the above plan of cultivation of the potato is strictly followed, and the seed selected, and prepared as directed, we shall have much less cause to fear the potato disease, than many of us have under our present method of cultivation.

I now leave the subject with you, trusting that what I have said may cause some of you to think seriously on the suggestions which, with due deference to the opinions and experience of my brother members, and with but little time for the preparation, I have ventured to submit to you.

AID TO AGRICULTURE IN ILLINOIS.—The Illinois Legislature has authorized the publication of 8,000 copies of the 2d volume of Transactions of the State Agricultural Society, and it is designed that the work shall be published and distributed so that the County Societies can have their copies to serve as premiums at their exhibitions next fall. The Legislature has also made an appropriation to the State Agricultural Society of \$3,000 a year for two years. All which is commendable, and evinces that the Legislature of Prairiedom may be truly denominated "the assembled wisdom of the State."

REMARKABLE HORSE.—There is at the present time to be seen working at Sandbeck, on the estate of the late Earl of Scarborough, a horse of the name of Shasper, who has, during a period of twenty years, travelled the enormous distance of 140,000 miles, or above the distance of four times round the globe. The *Doncaster Gazette* says: "This remarkable animal has, during that time, been solely driven by James Forshew, who has been a servant on the estate for upwards of twenty years, and never lost a single day. Since the demise of the late Earl, these two faithful servants have been separated—Forshew having been discharged. This old and valuable servant was much grieved in parting with his companion in labour."

OIL OF MUSTARD IN RHEUMATISM.—When one-third of the male population complain, to some extent, of rheumatic pains, in the fickle climate of New England, but more especially along the sea shores, physicians have it in their power to mitigate an immense amount of severe suffering by prescribing the volatile oil of mustard. It is employed as rubefacient, being first diluted in its own weight of alcohol at forty degrees. Some patients may object to its pungent odor; but that is temporary, while the remedy may in some cases prove a permanent cure. Make the application at least twice a day, and protect the part with soft flannel. Mustard mills are in operation in the cities generally, at which the oil may be procured, it being an article not much in demand in the arts.—Were it not for detecting it by a pungent odor, this oil would have become a secret remedy for rheumatic pains years ago. A nostrum loses miraculous efficiency and curative powers on becoming known.—*Medical World.*

FOOT ROT IN HORSES.—A POPULAR MEDICAL ERROR.

One of our subscribers wishes to know what is the best treatment for the disease now prevalent among some of our city horses, called the foot-rot, we would inform him that it must be treated according to the indications; at times local treatment alone may perfect a cure; at others constitutional remedies are needed in order to counteract the prostrating effects which long continued pain has on the system, or to improve the morbid condition of the body, and prevent gangrene of the parts involved. The disease is probably of lymphatic origin, occurring in the deep-seated lymphatics of the foot, and generally occurs among horses of coarse breed and flabby organisation. It generally commences at the anterior part of the *hind* feet, or on the inside of the same just above the hoof. We shall try to prepare an article on the subject for our next number. In the meantime we recommend our friend to try as local agents, astringents and antiseptics. Diluted pyroligneous acid is good, so also is chloride of zinc. In the putrescent stage, use chloride of lime, or finely-pulverized charcoal.

Popular error in regard to "*proud flesh*." Some horse owners have a sort of hereditary prejudice in favour of the popular theory: "that proud flesh must be got rid of at all hazards," and often a poor horse having a wound or abraded spot, presenting a healthy granulating surface, has to submit to the application of Dr. Neverthink's remedy, which consists of nitrate of silver, or caustic potassæ. How the caustic action of either of these remedies can be confined to the luxuriant growth, and not effect the contiguous healthy granules, the *wise* men have not informed us. We clip the following from an article on "Popular Medical Errors," published in the *Medical World*.

PROUD FLESH.—Patients will frequently come to us to know if there is any proud flesh in their wounds. The fear of proud flesh is very general, and brings many patients to the doctor whom he would otherwise never see. When a wound is attended with loss of substance, it is gradually filled up by the growth of the surrounding parts—a process which is called granulation, from the grain-like surface it presents. The granulations sometimes rise above the level of the surface, and I suppose the term "proud flesh" was given to this appearance as a figurative term for a luxuriant or forward growth. There is really nothing bad or malignant, as it is called, in the elevation, but it is rather indicative of complete and rapid repair. There are, it is true, complaints which are attended with what are named malignant or fungous growths; but they are happily very rare, and quite unconnected with the healing of common sores. I shall not dwell, however, upon the latter, as it would carry me on to the description of a disease which is out of my present province. It is, perhaps, after all, almost a pity to disabuse the public mind of the idea of proud flesh, for it is friendly to the doctors, and may tend to induce the people to have their sores better looked after.—*Am. Vet. Journal*.

FARMERS CLUBS.—In some of the villages of this region agricultural clubs exist. These should be greatly multiplied. We have before us the plan of operations pursued by one club and give it as a basis for the constitution of others. The members of the club meet at each other's houses, on an established day of each month, at 3 o'clock in the afternoon in the alphabetical order of their names. A foreman or president is selected, and, under his lead, they sally out to make an inspection of the system of culture pursued by the host of the occasion. They examine his fences, stock, farming implements, garden, buildings, and, indeed, every department of the farm, criticising everything freely, and finding all the fault possible. They then return to the house, read the minutes of the last meeting, propose, discuss and decide upon questions, the decisions all being recorded. All conversation except upon agricultural subjects is out of order. A substantial, plain supper follows. A register of crops, with the number of acres upon which they are grown, is kept by each member, and handed in yearly to the secretary, who arranges all in a table, for inspection and reference. What farmer cannot see that a club conducted like this must be attended with the best results in a social as well as professional way?—*Springfield, (Mass.) Repub.*

PATENT OFFICE.—The receipts of the United States Patent Office for 1856 were \$192,588, and the expenditures \$199,931, being an excess of expenditures of \$7,343 over receipts, caused principally by an act of Congress ordering extra compensation to Examiners. The number of applications for patents during the year was 5,960, and the patents granted 2,502, being 525 more applications and 475 more patents than any previous year.—The Commissioners recommend an increase in the patent fees.

THE TWIN QUESTION.

Sidney, April 20th, 1857.

SIR,—In the March No. of the *Agriculturist* I saw a letter from S. B. S. concerning Twin Colts, and also a letter from Francis Colman, stating that females of the horse kind do make good breeders, but as for the cow kind, he never knew a twin heifer to breed. Now, as to the latter, I can say with certainty, that I raised two twin heifers; one of them is still living, and will have, in a few days, the fourth calf; the other had two, and is now dead. If you think these facts worthy a place in the *Agriculturist*, please insert them.

Yours, &c.,

JOHN GILBERT.

REMARKS.—The question is not whether heifer twins will breed, but whether a heifer twin, of *bull* and heifer, will ever do so. The former is not disputed, the latter is. Though in the latter case, the female exhibits no marks of a hybrid or mule, she is called a *free martin*, and never produces young. So say the authorities. The doubt with S. B. S. was whether the same result happens in the case of twin colts, being male and female. That question does not appear to have been yet answered satisfactorily.

THE TANSY, AND ITS VALUE.—M. De Morogues announces that this plant—dried—is excellent sheep food, and that, when fresh, it makes capital litter for domestic animals. Its peculiar balsamic odor most effectually drives away fleas. A lapdog sleeping on a bed of fresh tansy, is immediately freed from these vermin. It should be renewed when the leaves are quite dry. This seems a better application of the plant than following the example of our grandmothers and making it into cakes.

HOW TO DO UP SHIRT BOSOMS.—We have often been requested by lady correspondence to state by what process the gloss on new linens, shirt bosoms, &c., is produced, and in order to gratify them, we subjoin the following receipt:—"Take two ounces of fine white gum arabic powder, put it in a pitcher, and pour on a pint or more of boiling water, according to the degree of strength you desire; and then having covered it, let it stand all night; in the morning pour it carefully from the dregs into a clean bottle, cork it; and keep it for use. A tablespoonful of gum water stirred in a pint of starch, made in the usual manner, would give to lawn, either white or printed, a look of newness, when nothing else can restore them after they have been washed.

SAFETY FRICTION MATCHES.—A recent English invention consists of matches made of sulphur and nitre only, without phosphorous, while the phosphorus, is applied to the sand-paper, with which the matches are ignited. To us, this seems only to transfer the danger of ignition from the match to the sand-paper. But if this is kept in a safe place, or if it be carefully fastened on the wall, near the place where the matches are to be used it may be a valuable improvement. It is a good fashion, in regard both to convenience and safety, always to hang up pieces of sand-paper, ornamentally bound and otherwise made tasteful in appearance, as we do a watch-case, by the side of our beds or bureaus, by the aid of which a match may be ignited without trouble. One will last, if properly secured, for a long while.—*Plough, Loom and Anvil.*

CHEAP PAINT.—If any of your readers wish to use a very cheap and substantial paint, of a drab color without lustre, let them mix water lime with skimmed milk, to a proper thickness to apply with a brush, and it is ready to use. It is too cheap almost to estimate, and any one can put it on who can use a paint brush. It will adhere well to wood, whether smooth or rough—to brick, stone or mortar, where oil paint has not been used, in which case it will cleave to some extent, and form a very hard substance, as durable as the best oil paint. J. M. CLARK. *Throopsville.*

LIME—GYPSUM.

To the Editor of the *Agriculturist*.

Mr. Editor,—I should like to have your opinion on the two following questions:

1st. What is the least, and what the greatest quantity of lime; and whether roche or slack; that may be applied with beneficial effect to land, supposed to be deficient in that necessary aliment of plants and vegetables?

2nd. Whether you think that the pretty generally popular opinion is correct, that gypsum or plaster is an exhauster of the soil? or whether the continued cropping of the land, without rest, rotation of crops, or manures, is not the real exhauster of the soil? May not gypsum or plaster be a stimulant; and under the present system, or rather want of system,—by causing a more abundant yield in the crops, the sooner deprive the soil of those ingredients which are the necessary food of plants, than if plaster had not been used; but which, nevertheless, would sooner or later, be the inevitable result, without rest, rotation and manure,—and so far, and no farther, may be considered an exhauster of the soil?

2nd April, 1857.

Yours, &c.,

PLOUGHMAN.

REMARKS.—Experiment and science both teach that lime is most beneficial when applied to soils rich in vegetable matter in its *caustic* state. When slaked by means of water, it still retains its quick or caustic quality; but when left uncovered in the air, after it has fallen into a powder, it slowly absorbs carbonic acid, and becomes re-converted into dry carbonate of lime. Its chemical action is then the same as chalk or crushed limestone. The use of caustic lime on certain soils has been found beneficial in a high degree. Its *modus operandi*, as laid down by the best authorities, would take more space to describe, than we have now at command. We advise "Ploughman" to procure Johnston's "Elements of Agricultural Chemistry and Geology," where the latest and most reliable information on the subject will be found. The advantages of *mild* lime, or carbonate, are also considerable, and is a good form in which to apply it to soils deficient in lime, and not rich in organic matter.

As to *quantity*, everything depends upon the condition of the soil. Land that is wet, or badly drained, requires a large application, and frequently repeated. Upon a thin soil, less will answer. On pasture lands, small and frequent doses are found most beneficial. In arable culture, larger and less frequent applications are necessary; on light soils it is preferable to apply the lime in the shape of a compost, and in smaller quantity. In England, the quantity applied in *ordinary* cases amounts to from seven to ten bushels a year. We are not aware of any reliable experiments in this country, for the purpose of determining the effect of lime upon our ordinary soils, or the quantity per acre that ought to be used. This is one of the points which the Board of Agriculture ought to ascertain by careful experiments.

The exhausting effects of lime, as well as gypsum (or plaster), depend evidently upon the same principle. Professor Johnston puts the question in a common-sense view as follows—"It is conceded that the crops we grow rob the soil both of organic and inorganic matter. A double crop will take twice as much, a triple crop three

times as much, and so on. And the more we take out in one year, the more rapidly will the land be exhausted. Now, if lime (or gypsum) by its mode of action enables us in the same time to extract three or four times as much matter from the soil, in the form of increased crops, it must so much the more rapidly exhaust the soil, in the same way as we should drain a well sooner by taking out 50 than by removing only 5 gallons a day." We must restore in the shape of manure what the crops carry off, if we would keep up the fertility of the soil. The old rhyme assures us that

"Lime and lime, *without manure*,
Will make both land and farmer poor."

HOW TO COOK SALSIFY OR VEGETABLE OYSTER—COFFEE MAKING.

To the Editor of the Agriculturist.

Through the winter and spring, Salsify is a favorite dish on our table. We usually prepare it by boiling in milk until the slices are tender, adding pepper and salt, and a good slice of butter. When ready to serve, stir in two or three well beaten eggs, taking care not to let it boil afterwards. This is very nice poured over slices of toast.

Another way I have learned by a few trials which husband pronounces decidedly good. Boil until tender a pint or more of salsify, mash fine, then add pepper, salt, butter, a few spoonfuls of milk or cream, a little flour, and two beaten eggs. Make into small cakes, and dip in flour or egg batter, and fry of a light brown. Perhaps some of your country friends who, like us, live far from market, will pronounce this a good substitute for fried oysters.

Would a few simple rules on "Coffee making," be out of place in your columns? Experience has taught me that it is *not* "the easiest thing in the world to make a good cup of coffee," but, on the contrary, a very easy thing to fail. I know that in my early housekeeping days, *my* coffee was often poor; why, I could not tell. If the few hints that experience has taught me, will save *one* young housekeeper the mortification I have felt, I shall be amply repaid.

First then, wash quickly through two or three waters as much coffee as you want to roast, then carefully look it over, taking out impurities and every unsound kernel. Put it into a dripping-pan, and place in the oven, with the doors open until the coffee is dry; then with a lively fire and frequent stirring, let it remain until the kernels are a light brown all through. Then pour into a close vessel and cover tightly. When wanted for use, take a table-spoonful or more for each person, grind rather fine, and stir into it sufficient cold water to wet every particle. Before adding to your coffee boiler, look to it that the vessel is perfectly clean. It is not enough that it has been rinsed out,—it must be thoroughly washed out with a cloth. You will, perhaps laugh, but I have seen many an otherwise good cup of coffee made bitter and black from not obeying this simple direction. Pour to the coffee as much boiling water as you require, and let it once boil up, when it will be ready for the table. Let your cup be warm if the weather is cold, and your cream too, and my word for it, every time you fill your husband's cup, you will say (to yourself I mean,) "how beautifully yellow it does look."

EDITH.

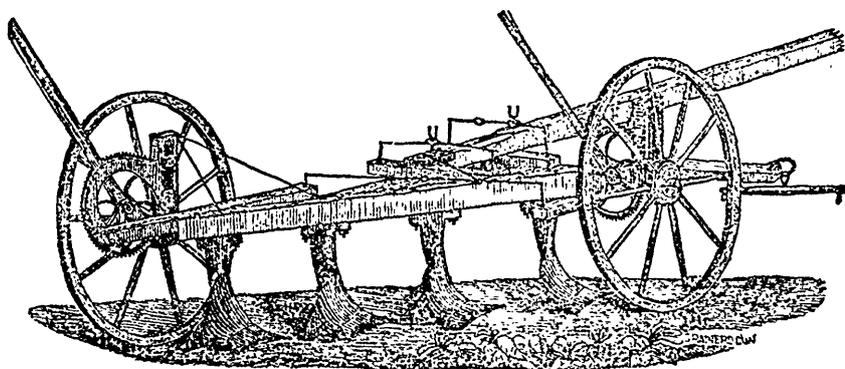
THE CURRANT.

There are no more desirable accessories to the garden than our small fruits, whether cultivated for profit or family use. We have before had something to say on the subject, and recur to it again, not alone for the benefit of our numerous new subscribers, but because Horticultural knowledge, like other kinds of knowledge, is necessarily conveyed by "line upon line, precept upon precept." We shall confine the present article to the Currant. Some may think it needless to give directions for cultivating the currant, since almost everybody who has a garden grows it. But we think not. To grow a plant involves the idea of cultivation and care; at least, it includes something more than sticking a plant in a hole, and gathering the fruit in the course of time. If this be true, then probably not more than one in a hundred grows the currant; it grows itself, and no thanks to anybody. We know of no plant more neglected than this, and we know of none that yields a more generous return for proper care. No fact in Horticultural science is better established, than that high culture is a wise economy. This remark will apply to the currant with peculiar force. It is true, so generous is its nature, it will from year to year produce a moderate crop under very bad treatment; but when judiciously cultivated, the product is wonderfully argued in quantity, quality and size. In addition to this later fact, a healthy, well-grown, symmetrical plant, gladsome with its peculiar treasure always produces an emotion of pleasure in the beholder; a matter of no small moment to those who would extract pleasure even from the sweat of our brow. If, then, additional profit, as well as no small degree of pleasure, will result from the application of skill and care to the treatment of the currant, let it by all means be done. Let it no longer be thrust into a corner, or some other out-of-the-way place, but bring it out into the open air and genial sunshine, and minister properly to its wants. It is almost useless to attempt to bring into shape, vigor and productiveness, old, unsightly, and half-decayed plants. It is better to begin anew. We do not like plants grown from suckers. Procure those grown from cuttings, and remove all the eyes and shoots so as to produce a clean stalk a foot or more high, above which the head should be formed. This stalk must always be kept free from shoots.

Let the ground be trenched a couple of feet deep, and incorporate with it an abundant supply of well-rotted manure. In planting, remove enough earth to spread the roots out in their natural position, cutting off all that are bruised; and be careful not to plant too deep. Tie the plant to a small stake till it becomes established; thin out the shoots so that a round, open head will be formed; shorten in all the remaining shoots about two-thirds of their length, and the work of planting will be complete. The subsequent treatment will only become difficult through neglect. An annual pruning is indispensable, which may be done during the winter, or very early in the spring, and which consists mainly in shortening in the last season's growth, leaving about six inches of new wood, and cutting out entirely all branches that cross or interlace each other, so as to keep the head well open and in good shape. Suckers must be eradicated as soon as they make their appearance. Fork in some good old manure in the spring, and keep the ground mellow and free from weeds. If the soil is stiff, the manure may be applied in the fall, and forked in in the spring. If you have done the work thoroughly and skillfully, you may look confidently for an abundant reward.

This article would be incomplete without a list of desirable kinds. The *Red and White Dutch* are, on the whole, about the best, and are recommended for the general crop. The *Cherry* is a large and splendid variety, but not very productive. The *White Grape* is also large and handsome. Large *White Provence* is a very large and handsome new variety. *May's Victoria* is late, and a good bearer, with long bunches of fruit. *Prince Albert* is a fine late red variety. *Black Naples* and *Bang Up* are the best black varieties, and are good for jellies. *Knight's Sweet Red* we grew four years before we discovered that the "sweet" was produced by the liberal addition of sugar. The *Meng-bunched Red* is a desirable variety. The list might be extended, but we think the above more than enough; they are the best, so far as our experience goes. We repeat, however, that the *Red and White Dutch* will give most satisfaction for a general crop.

PRESERVING EGGS.—I am convinced from numerous experiments, that eggs may be better preserved in corn meal or bran than in anything else. Mrs. ———, the lady knitting in the other corner there, last fall put down some twenty dozen, small end down, and only two came out worse for resting. To this present sitting, some four months, they are "good as new." Salt does not do as well. J. E. S. Barre, Mass.



KELLAM'S GANG PLOUGH.

The above is a Canadian invention, and on the authority of gentlemen well qualified to judge of its merits, we are able to speak very favourably of its performance. The improvement or "patent," we believe, consists in an adjustable arrangement of the wheels, by which the implement can be more easily turned at the end of the field. David Christie, M.P.P., is now using this implement on his extensive farm, and pronounces it superior to all others. He has tried all the kinds in common use. We have not seen, or used the implement, and can, therefore, only speak upon the authority of others. As the patentee does not advertise his terms in the *Agriculturist*, we cannot state the price &c. We believe it can be had at nearly the same price as other wheel-ploughs. The following is the patentee's description of its peculiarities:—

On the above plan any number of Ploughs required in a gang, can be managed with the utmost ease. The Plough is strong and not liable to get out of repair. The pole can be arranged for two or three horses abreast, as circumstances may require. Six or seven acres is a common day's work. The ploughs are balanced between the wheels, which gives a uniform depth to the furrow on the most uneven ground.

The pole has a horizontal motion, with which the wheels are so connected, that when you wish to turn, the wheel on the outside of the circle adjusts itself perpendicularly to the beam; the other, at the same time, forming a pivot on which the ploughs may turn.

The wheels can be raised so as to give the ploughs any required depth; or lowered, so that it can be driven any where on the farm. It does not require holding, the wheels keeping the plough steady in the roughest ground.

The draught comes wholly on the beam; consequently there is but little strain on the pole, and it never galls the neck of a team.

With the above plough a person who can guide a team can do three times the amount of labour, and can do it better than can possibly be done with a single plough.

There is a good deal of enquiry for implements of this kind in the better cultivated townships, and we have no doubt if the above shall prove as good as represented, it will come into general use. We may mention that the patentees reside at Waterford, C. W.

ON THE CHOICE OF STALLIONS.

To the Editor of the Agriculturist

Sir,—As the time is approaching when the choice of stallions must necessarily call for some attention from the farmers of Canada, perhaps a few hints may not now be out of place.

Whether the breeding and raising of horses will continue to be as profitable as it has formerly been, remains to be seen.

When beef and pork were under 20s. per 100lbs, cows from 8 to 12 dollars, Oxen 40 or 50 dollars a yoke, sheep a dollar each, oats less than a shilling a bushel, and other kinds of grain low in proportion, and no cash at even those low prices, nothing was more profitable than rearing young horses. I write from experience, I have found a good young horse worth more to me than a good crop of wheat. Things however are changed, and now when beef and pork are from 7 to 10 dollars per 100 lbs, cows from 25 to 50 dollars each, oxen from 120 to 160 dollars a yoke, sheep 5 or 6 dollars each, oats 2s. 6d. to 3s. per bushel, and other grain high in proportion, and all commanding cash, it is for the farmer to consider, whether the rearing of horses (even at their present high price) is as profitable as other stock.

One thing however is evident, and that is this,—it will never pay to raise poor horses, and for that reason breeders of horses ought to be more careful in the choice of stallions than they have generally been heretofore.

In this section of the country the worst stallions have generally most to do, merely because they are the cheapest, and those stallions that are calculated to improve the stock, have but little to do, unless they travel over a great extent of country; that the same penny wise and pound foolish system prevails in many parts of Canada is evident, from the number of miserable stallions we find all over the country, many of them having nothing to recommend them but the volubility of the groom, and it is certainly surprising how they sometimes impose upon the farmers, if their horse is spavined (for many of them are) the groom has some other name for it, a kick or something else. If he is blind, it has either been by some inflammation when a colt, or he has drawn himself blind, if he is low in flesh, it is on account of his great ambition and his having so much to do, in fact the groom will give a reason for every defect and actually gets some farmers to believe that those very defects show that *theirs* is a great horse. If they happen to get a farmer to patronize them who is considered a judge, it has a wonderful effect, and they often give such farmers the service of their horse gratis for the purpose of gulling others; one thing however is remarkable and that is this,—that these grooms seldom run down horses equally worthless as their own, but if there is a horse in their district calculated to improve the breed of horses, at all events if there is one that has been engaged by some Agricultural Society, that horse, and that horse alone, comes in for all their abuse, and it is surprising how much they are listened to. The time has now come when farmers must shun such miserable horses, and if that is only done, we will soon see their places filled up by a better class.

I do not intend to say anything about the different breed of horses which we have

now in the Province. We have all kinds, and all have their admirers, but in the choice of stallions let those be chosen which are the best of their kind. A dollar or two extra for a horse will put pounds in the pocket when the colt comes to maturity.

I remain sir,

yours, &c.

Perry, 6th April, 1857.

A BREEDER OF HORSES.

CHARCOAL AS A PREVENTIVE OF RUST.

To the Editor of the Agriculturist.

Sir,—In one of your early numbers of last year, (upon which, however, I cannot just lay my hand) you gave an outline of a Lecture delivered before an agricultural audience, in which it was suggested by the lecturer that charcoal, finely pulverized, might be used with success in preventing the ill effects of rust or mildew on wheat. But neither the time of sowing, the quantity, nor the *modus operandi* were so clearly stated, as to enable an uninitiated person to try an experiment, with any reasonable probability of a satisfactory result. Now if you, sir, happen to know anything about these matters, and would kindly explain them in your next number, you would very much oblige one of your subscribers at least; who would like to ascertain by experiment, how far pulverized charcoal may be a preventive of mildew or rust in wheat and barley sown on land which from the lowness of its situation is much subject to one or other of them.

I am, &c.,

2nd April, 1857.

A. B. C.

BRIEF HISTORY OF CHINA.—China is the most populous and ancient empire in the world; it is 1,300 miles long, and 1,030 wide. Population from 300,000,000, to 360,000,000. The capital is Pekin, with 1,100,000 inhabitants; next Nankin, 1,000,000, and Canton 1,000,000. China produces tea, 50,000,000 pounds of which are annually exported from Canton, the only place which foreigners are allowed to visit. Silk, cotton, rice, gold, silver and all the necessaries of life, are found in China. The arts and manufactures in many branches are in high perfection, but stationary, as improvements are now prohibited. The government is a despotic monarchy. Revenue \$200,000,000; army, 800,000 men. The religion is similar to Buddhism, the chief god being Foh. The Chinese inculcate the morality of Confucius, their philosopher, who was born 500 B. C. The great wall and canal of China, are among the mightiest works ever achieved by man. The foreign commerce of China amounts to \$35,000,000 or \$40,000,000 annually, the whole of which is transacted by appointed agents, called "Hong merchants." Foreigners are allowed to live at certain stations, "factories," below Canton. The chief trade is with England. The first American ship reached China in 1784; now the annual average of the United States ships visiting Canton is thirty-two. The revenue derived from foreign commerce by the Emperor varies from \$4,000,000 to \$6,000,000. According to Mr. Dunn, the opium smuggled into China, to the injury of the people, amounted to \$20,000,000 annually, for several years past, much of which was paid in specie, which found its way to London. The Chinese language has nearly 40,000 characters or letters.

To commit a falsehood is like the cut of a sabre; for, though the wound may heal, the scar of it will remain.—*Sadi*.

There is a small chance of truth at the goal, where there is not childlike humility, at the starting-post.—*Coleridge*.

THE ONION—*ALLIUM CEPA*.

Why is it that the large markets of Upper Canada, Toronto, Hamilton, &c., are supplied with this useful vegetable from the United States? Surely onions can be grown as well, as cheaply, and as profitably on Canadian soil as elsewhere? We were surprised to see a dealer in our markets last fall from Rochester with immense quantities of onions, and to hear him say that he realized a ready sale and a handsome profit. It seems unaccountable that with all the gardeners, and small, as well as large farmers, in the vicinity of this city, we must go to a foreign country to purchase our onions. With a view to amend this state of things, let us attend to their cultivation in future. No crop pays a more steady and uniform profit than this. The market is never glutted, and as a good quality of the article keeps well, it always brings a remunerative price.

VARIETIES.

Though these are quite numerous, the sorts cultivated are principally the *Large Red* or *Wethersfield*, *White Silver skinned*, *Yellow Dutch* sometimes called *Strasburg* or *Flanders Portugal* or *Madeira*, *Large Spanish*, *Potato* or *Under-ground Onion*, and the *Welsh* or *Tree Onion*. The first two are more generally raised than others, they being the best known and commanding the best price. The white Portugal grows to a large size, frequently reaching five, six, and sometimes eight inches in diameter, but does not yield so many bushels to the acre, and does not keep as well. For general purposes and for export, the red is the best variety to cultivate. For home use, and the supply of the city and village markets, the silver skin and the yellow are the best varieties. They usually bring a higher price.

PREPARATION OF SOIL.

No crop pays better for a thorough preparation, and for high manuring. As a large part of the expense is for weeding and tending, it should be the aim of the cultivator to get a maximum crop from every acre that he devotes to this purpose. The wants of the plants are a fine deep light soil, through which the roots may easily penetrate. Accordingly, when a piece of ground has once been broken up, and cleared of stones and roots for this crop, it is common to keep it in onions for a long series of years. Ten and fifteen years are common terms, and we are told that fields in Wethersfield have been cropped with onions for half a century.

Of course such constant cropping demands large supplies of manures, and where the aim is to raise six or eight hundred bushels to the acre, it will pay better than to have a succession of crops, the most of which will not pay a fourth part of the profit of onions. It is the best way to work in the manures in the fall, and to turn them in with the plow twelve inches deep. The quantity of manure to be applied, and the depth of the plowing must depend something upon the previous treatment of the land, and its previous condition. We would increase the depth of the plowing with the quantity of manure added. We have not so much faith in the application of special manures to this crop as some have. There is no difficulty in getting excellent crops with stable manure, and that of the pig sty, and such composts as you are to make upon your own premises. Any man who makes his own manures, is safe in plowing in thirty or forty cords of stable manure or compost, in the Fall, for every acre. In the Spring we would cross plow, not quite so deep, and harrow, so as to make the tilth as fine as possible. Now, the whole ground is to be raked over with garden rakes, and cleared of all small stones and clods. If top-dressings of ashes are used, we would put them on previous to harrowing.

SOWING THE SEED.

The old process of sowing by hand will not pay. The work is better done with a brush seed-sower, if you plant in drills, or with an onion planter, if you plant in hills. Where this crop is much cultivated, they have a machine for the purpose, which drops the seed with perfect uniformity, two rows of hills at the time, covering and rolling at the same time. With a brush seed-sower, a man can plant about as rapidly as he can walk. With

this it is easy to drill in with the seed any fine fertilizer like bone dust, ashes, or superphosphate of lime. The latter, if you can get a genuine article, will give the young plants a good start.

CULTIVATION.

When the plants begin to show themselves, the push-hoe should be immediately run between the rows, to loosen the surface of the soil, and to cut off the springing weeds. If weeds have been kept under in former years, they will not be very troublesome. If they have been allowed to go to seed, the cultivator has a job before him. A week or ten days after the plants are up, the push-hoe should be run through again, and the rows be thinned and weeded. If you desire large onions, thin out to six or eight inches apart. If you want them smaller, and more of them in bulk, let them grow thicker. The usual number of hoeings in the season is four, but we think six would pay better than any less number.

KIND OF LABOUR EMPLOYED.

A saving is frequently made in the expense of cultivation, by securing the labour of boys or women in weeding. The work does not require great strength or skill, and a smart lad a dozen years old or more, will accomplish nearly as much as a man, at less than half the price.

CULTIVATION WITH OTHER CROPS.

In Rhode Island, a favourite mode of cultivation in the field is to sow onions and carrots in alternate rows. The onions are out of the way by the middle or last of August, when the carrots have the ground. This root, it is well known, makes the most of its growth in the latter part of the season, and is left out with safety until the middle of November. In this way five or six hundred bushels of onions, and as many or more of carrots are frequently grown upon an acre. This is a good method, if we manure high enough to keep the land in good heart.

The mode of culture pursued by market gardeners is somewhat different. With them it is a matter of prime importance to get onions into the market very early, before the harvests of field culture are gathered. They take bulbs or pipes of a previous year's growth, raised for the purpose, and set them out as soon as the ground opens in Spring. These mature very early, and are mostly marketted in June and the fore part of July. They are tied up in small bunches, with the green tops on, and bring two or three times the price of field onions. The ground is then devoted to some other crop, very frequently to late cabbages. The seed for making the pips is sown very thick, so that the bulbs cannot grow too large. Potato and the top onions are also used for this early crop.

But this course can only be pursued by a few near cities and villages. The field culture may be indefinitely extended, and the demand is likely to exceed the supply for generations to come. It is far more profitable than Indian corn, and pays better than any ordinary farm crop. A common yield on land that will grow fifty bushels of corn to the acre is four and five hundred bushels. A large yield is six hundred bushels, on better land. Eight hundred are sometimes grown with high manuring and extra care.

VISIT YOUR SCHOOLS.—You could not do a better thing. Your boy has the idea that you care scarcely a fig's value about his progress there; your girl thinks you are too busy about *more important* matters to worry about her recitations. Grammar is dry as dust to her, geography is tedious, arithmetic is a bore, reading is horrid, writing is her especial abomination. If she speaks of either at the table, she is hushed up. You talk of stocks and senatorship, of the war and free trade. The young ones learn to think their studies very small matters in comparison with yours.

But visit your school to-day. Hear a lesson or two recited. Learn from their teachers what their standing is, in what they oftenest fail, and in what they excel. See who sits next to them in the school-room. See how they compare in personal appearance, whether they look happy and at home. If acquainted with their school habits, you cannot but be interested in them, and then you cannot possibly avoid talking of them. Making these matters subjects of home conversation will certainly stimulate them to better efforts—make better scholars of them. By all means, then visit your schools. Go alone, if no one will go with you. You will always be welcomed by the teacher, unless he is a fit one to be turned off.

HOW TO TREAT CATERPILLARS.

The following is from an American journal, called the *Plough, Loom and Anvil*, and as caterpillars have committed extensive depredations upon Canadian orchards, it may be worth while to copy the article for the benefit of our readers:—

“You may keep off the caterpillar, if you will; and it will cost you nothing to do it—nothing but what you will be paid for in dollars and cents as you go along, leaving the pleasure of seeing a clean orchard, and the reputation of being a tidy farmer, to be set down as so much clear profit; and certainly it is not small, if self-respect and the esteem of the neighborhood are worth having. You should keep a clean orchard for your own sake, and for the sake of your neighbors. It will be more for them to keep clear of pests when your orchard is a hot-bed for them.

Perhaps you say, your neighbors propagate the pests, and it is vain for you to attempt to keep your orchard much cleaner than theirs. There is something in this. You cannot drive them. Mankind are a little like the Irishman's pig—“won't be driven.” But they are like that nobler animal, the horse, in another respect—“love to be led by the nose;” especially if they like the man that leads them. Suppose now, that you clean your own orchard, and then say to your neighbors, “Come on, let's have a clean neighborhood of orchards.” “Come,” is a softer word than “go.” More are persuaded by it.

Yes, clear off the caterpillars. The time is from now as long as you live, for the Giver of all good never meant that there should be a rose without a thorn; or good, fair, delicious fruit, without care and labour. If he had made the earth prolific of all good things, with no enemies in the shape of caterpillars, canker-worms, weevils, frost, drought, tempest, something to keep man awake, to burnish up his powers, to scrape off the rust, the human race would have been extinct long ago. In baffling, therefore, with the farmer's enemies, think that you are fulfilling one of Heaven's merciful appointments; and do the work cheerfully, hopefully. You'll conquer, if you *will* to conquer.

We have said the time is while you live. Rather discouraging. Not very. If you do the work well from January to August this year, there will be little to do next year, and less year after next, and so on. But how? is the question. Your agricultural papers will tell you a score of ways, all very good perhaps. The agricultural papers are about as good as they can be, till the readers will let us give them better. Farmers miss it, that they do not let us pour the light of science on them; give them hard words when necessary, pages which it would take them a winter evening to conquer, but which they *could* conquer nevertheless, and become scientific men, but for the ridiculous idea that a farmer cannot learn much. The way would become easy, when once entered, just as the caterpillars are more easily kept down the second year than the first, and still more easily the third. But as the farmers will not come to us, we will go to them. Science is bound to bless the farmer. This is its benignant mission.

Science *should* be clothed in her own beautiful garb, and the farmer should learn to look upon her with the same pleasure as upon his own neatly-clad wife and daughter.—but in our practical recipe for expelling caterpillars, we will dress her in a less comely garb—will use no word that would be new to a child; not because this is the best way, but because the farmers, *mistakenly*, as we think, will have it so. Aye! we humor them at their own bidding, but to their own hurt. They are a little like spoiled children in this respect. The naughty schoolboy says, ‘It will do me no good to learn English grammar; what's the use of algebra for me? I care nothing about geography; I'm to be nothing but a farmer, or a mechanic.’ So, too, many farmers refuse to learn a few scientific terms, which would be the key to a flood of light on their business, and do more than a little to raise their calling and themselves to a high pinnacle of glory in the eyes of mankind. But let that go.

There are two batches of caterpillars that infest apple and other trees, which have a bitterish and tonic bark and leaf. The apple and the choke cherry, and the common black, or rum cherry, seem to be their favourites. Hence, if the farmer would keep his orchard clear of these pests, he must either cut down the wild cherries and cast them into the fire, or must consent to watch them with the same vigilance as his apple trees. If cherry trees are tall, it is more difficult even to keep them clean. We once had a large orchard with a single black cherry tree in it, tall, straight and beautiful, productive of abundant fruit, a feeding place for flights of birds, which we loved to see gathered there for their food. The tree had grown up spontaneously, and we could not but feel that

God had given its fruit for the birds, and as they were willing to take the fruit in its simple God-given state, without adding fire-water, we suspected our right to cut it down. But tall ladders, long poles, and much climbing, were all in vain. It was next to impossible to keep that orchard clean. In spite of all vigilance, the caterpillars bred in the cherry-top, made it look like a scarecrow, and came down in swarms upon the apple trees. It was more labor to keep a dozen trees in its vicinity clean, than all the rest of the orchard. We spared the cherry tree, nevertheless, and the caterpillars and birds, under a less vigilant owner, divide its leaves and fruit to this day.

The batch of caterpillars which comes out in April or May, according to the latitude and season, seems to prefer the apple leaf to the cherry, and will do considerable mischief, though not very great, if let alone. Larger broods come off in June or July, and do their mischief in July or August. These seem to have a stronger liking for the black, or the choke cherry, but will do great mischief to the apple tree, if not headed off, or fought down. The eggs from which the apple tree caterpillars are produced, are deposited on a small twig, in August or September, in a ring extending quite round the shoot, but a little protuberant on one side. Each egg is deposited in a separate cell, like the cells of a honey-comb; but, if possible, arranged with more exactness, and in more beautiful order. The whole are covered with a transparent water-proof cement, leaving the color so much like the natural color of the branch, that they are not easily discovered. A person might tend an orchard a life-time without seeing one, if his attention was not specially called to it. These, if let alone, will remain till the warmth of spring hatches the young, when they burst the cement, and crawl downward to the first convenient offset of shoots, a little army, where they make their encampment, spin their thread, and weave it into a sort of web, spread their white coat, and thus become so distinctly visible as to be a fair subject of attack; and if taken in time, it is no great trouble to eject them. The branch, if not large, as it seldom is, should be cut off and burnt. If the branch is large, or if you insist upon sparing the small branches, rub the encampment down with a leather glove, and the enemy is extinct.

The June or July broods may be treated in the same way. The work, in this case, should be a little more thoroughly done, because, at this season, the weather being milder and less subject to north-east storms, if you let a few stragglers escape, they will sometimes rebuild their tent, and continue their mischief; whereas, in May, if the nest is broken up, little harm need be anticipated from an occasional wanderer. The limbs, if high, may be cut by a long pair of pruning sheers, or just as well by a sharp scythe affixed to a pole. But the limbs should in all cases be gathered and burnt. There has been much said about blowing these nests with powder. An active boy would destroy ten of them in the way we have named, sooner than he would load his gun. It has been recommended to burn them with a torch at the end of a long pole. If the torch light is hot enough to extinguish the insects, it would do the limb no good. Washes of vinegar and pepper, of salt and water, of lime, of soap-suds, and, we believe of cheap rum—which certainly would kill if anything would; at least does kill—have been recommended. Those who want to increase the labour of extermination would do well to try them.

But prevention is always better than cure; and we will now propose a plan in which we should put the greatest reliance, and will suggest a method of carrying it out most effectually. Those deposits of eggs, of which we have spoken, are hard to be seen.—But a quick eye will detect them; and the best time is in the winter; and if the ground is covered with snow, so much the better, because it reflects the light advantageously. Go through the orchard on a clear sunny day; and with your back towards the sun, look for a slight enlargement of the twigs, a swell in those from the size of your little finger down to that of a pipe stem. If you notice one, examine it with a microscope. A glass from grandmother's spectacles will do if you have no better. If you observe something of the appearance of a honey-comb, you may calculate that you have a host of embryonic enemies in your power. Note the appearance carefully, and you will detect another tribe more easily. But this is the best work for the boys. Their eyes are better. Let them cut off and burn these enemies, while yet in the egg. But will the boys do it? Yes, if you will inspire them with a motive. We do not much like the idea of hiring boys to work for their parents. And yet, why not a boy have an opportunity to earn something for himself, while other boys are at play? There can be no harm in it, if he will at the same time learn to value money, and to spend it wisely.—You may have two or three sharp-eyed boys from ten to sixteen years old. We propose that you show them a half-eagle. Explain its value. Tell them you will hold it for

them, subject to their drafts for such little expenses as you approve of their making, on the condition that they will break up all the caterpillars' nests before spring, or that if any should escape their search, they will destroy the young before you find them; the money all to be theirs with interest, if they succeed perfectly: but you to deduct a shilling for every nest not destroyed in the winter, or broken up before it meets your eye in the spring or summer.

We fancy, that by such an arrangement, the boys would learn something useful to them in after life, and that the caterpillars would learn not to trouble your premises."

CLINCHING HORSE SHOE NAILS.

As I once passed through this town, one of my horses' shoes became loose, and I went to the shop of a smith named Lovelace, to get it fastened. The shoe was nearly new, and had become loose in consequence of the nails having drawn out of the hoof, although they had been clinched in the manner universally practiced. The smith remarked that all the other shoes were loose, and would soon drop off, and when I requested him to take them off and replace them; and then did I perceive the different mode which he adopted for fixing them, which I will here detail. As fast as he drove the nails, he merely bent the points down to the hoof, without, as is customary, twisting them with the pincers; these he then *drove home*, clinching them against a heavy pair of pincers, which were not made very sharp; and after this had been very carefully done, he twisted off each nail as close as possible to the hoof; the pincers being dull, the nail would hold, so as to get a perfect *twist round* before it separated. These twists were then beaten close to the hoof and filed smooth, but not too deep, or with the view to rasp off the twist of the nail. "Oh ho!" said I, "I have learned a lesson in horse-shoeing." "Yes," said he, "and a valuable one; if I were ever to lose a single shoe in a long day's hunt, I should have to shut up my shop; my business is to shoe the horses belonging to the hunt, and the loss of a shoe would be the probable ruin of a horse, worth perhaps a thousand pounds; but I never am fearful of such an accident." "Simply because you drive home and clinch the nails before you twist them off," said I. "Yes," replied he, "by which I secure a *rivet* as well as a *clinch*." The thing was as clear as the light of day, and I have several times endeavored to make our shoeing smiths understand it, but they cannot see the advantage it would be to *themselves*, and guess, therefore, *it would never do in these parts*; but if my brother farmers cannot see how it works with half an eye, and have not the resolution to get it put in practice, they ought to see the shoes drop from the feet of their horses daily, as I once was accustomed to do. Now, let any one take up an old horse shoe at any of the smith's shops on the road, and examine the clinch of the nails which have drawn out of the hoof, and he will soon perceive how the thing operates. In short, if the nails are driven home before twisting off, and the *rivet* formed by the *twist*, be not afterwards removed by the rasp, I should be glad to be told how the shoe is to come off at all, unless by first cutting out the twist?—*Farmers' Cabinet*.

EGYPTIAN, OR MUMMY CORN.—Perhaps the most wonderful and interesting specimen of the earth in the Horticultural Exhibition recently closed, was some *Egyptian Corn*, raised in the garden of Gen. Wm. H. Sumner, of Jamaica Plains, and kindly sent by him for exhibition, thus giving thousands an opportunity of seeing one of the greatest curiosities within our knowledge. The seed from which this corn was raised, was taken from the *folde of cloth wrapped around a mummy three or four thousand years ago*, and wonderful as it may seem, after being entombed for so many centuries, like a resurrection from the dead, it springs up in new life and vigor. It is undoubtedly the kind of grain for which Joseph's brethren went into the land of Egypt—the same "corn" of which the Bible speaks. It is luxuriant in its growth, and the heads resemble wheat, but are very much larger, forming in inverted conical clusters as large as the closed hand; the kernels are large, and very sweet to the taste, and the stock and leaves are similar to our Indian corn. There seems to be no reason why it may not become a valuable addition to our cereal productions, and thanks are due to the gentlemen who are multiplying it, and bringing it into notice.—*N. Y. Evening Post*.

THE FAMILY FIRESIDE is a nursery of virtue. How many vices are suppressed and temptations to evil overcome that there may be no *bad* example? How many exertions made to so act and live as to inculcate a *good* one?

HINTS WORTH READING.

Some of the following suggestions may be a little too late, but the lateness of the season may render them appropriate even yet.

1. Clean your cellars at some odd time soon. Look into your pork and beef tubs, and see that all is right. Sort out the bad potatoes and from fruit the good. Separate the different varieties, if they have mixed in any way. Remove from your cellar all decaying matter; and as soon as the weather becomes warm enough; give the cellar a thorough airing and white-wash its walls neatly. Do not, however, remove the winter embankments, till all severe frosts have passed.

2. Select, if you have not done so, the best kinds of seed for sowing and planting; use your best judgement in this matter or take the advice of some competent and disinterested person. Provide *now*, for all you want this spring. A little care and expense in this line, will reward you well.

3. Repair your fences, or make new ones, when needed; the frost is out, and the sooner this work is done, the better. Make all your permanent fences strong and durable; this is the only mode that will pay.

4. Keep your hogs out of all fields, except those you design for their range. Be especially careful that they do not get into your clover fields; they will do harm enough there in a day, to pay for putting up a good many fences.

5. If your land is sandy, or a heavy turf, you may plow, with safety; but if it is clayey, and has been plowed recently, wait till it is thoroughly dry; plowing it while wet or damp, will make it hard the whole season.

6. Your hens are laying, you have plenty of eggs; preserve those you don't want for cooking or for setting your hens; pack them in salt, with the little ends down, or keep them immersed in highly saturated lime-water. In either of these ways, eggs may be kept for months; if not years.

7. By the way, if you have a warm place for nests, let two or three hens *sit* as soon as they please. A little care will preserve the brood when hatched, and early chickens are delicious for the table, in the fall; or the pullets, if kept, will lay eggs next summer, if well cared for.

8. You may do certain work in your garden, as soon as the ground is dry enough to work safely. Lettuce, onions and early peas may be put in as soon as you please. In clay soils, we repeat, *never stir the soil when damp*. Currant bushes may be transplanted, or new cuttings set. Manure may be prepared, and that which is well rotted, may be spaded in. Mulching may be done, when you do not wish to stir the ground for some months.

9. Do not allow hay or straw to be wasted; preserve all that is not needed, for use at some future time; it will perhaps be needed when least expected.

10. When the ground is dry enough, transplant whatever trees need to be transplanted. Do this with the hardest trees, as soon as you can. Take great care in transplanting, to tear the roots as little as possible, and to do the work well. When you finish setting out a tree, mulch the ground well, with some coarse manure; this will prevent the effects of drought. When you buy trees for transplanting, be sure to get the kinds you wish. Nurserymen sometimes make loose statements. Deal only with responsible and reliable men.

ASPARAGUS.—Those who have asparagus beds, must not expect that they will take care of themselves. If a good top dressing of short stable manure has not already been dug in, we recommend that as soon as possible a compost of stable manure and marsh muck mixed with three bushels of wood ashes to every cubic yard of the compost be spread over the bed to the depth of two to three inches. When this is done, then sow two or three quarts of salt to the square rod, and it will be found that the asparagus beds will repay the owner handsomely for his trouble. The asparagus plant is greedy and exhausting, and when not supplied with manure, the young shoots come up in the spring like pipe stems, and one can hardly cut a good sized bunch from a square rod of ground. Now we might just as well have asparagus coming up in the spring with shoots like hoe handles, but the ground must be made rich in the fall. A good coating such as is recommended above, protects the plants from the winter, and even when late applied,

Monthly, large, red, bears late and valuable; and *Brinckle's Orange*, regarded by many as the best of all Raspberries, vigorous, hardy, productive, handsome and excellent.

The Blackberry requires nearly the same treatment as the Raspberry, but as it is a more rampant grower, it needs particular care in keeping it clear of suckers, and in shortening in the stems to promote fruitfulness. It should not be allowed to grow more than three or four feet high for bearing.

The best varieties are the *High Bush* and *New Rochelle*. The former are oblong, and often measure an inch and a half long. The latter is becoming a general favourite, being very large, more nearly round, and exceedingly productive.

The *New Rochelle* Blackberry, of which, according to Charles Downing, "a dozen or so in full bearing, will give fruit sufficient for an ordinary family for some six weeks," requires good cultivation and management. The following directions, founded on experience, are copied from the *Horticulturist*, from Geo. Seymour, & Co. :—

"We prepare the ground by plowing and manuring as for any ordinary crop. We then take young plants, cut them back within six inches of the roots, and plant in rows eight feet by four apart. The first season we use the plow and cultivator both ways between the rows, keeping the ground in good tilth. Next, or the second season, we train the plants into the four feet spaces, leaving the eight feet spaces for the plow and cultivator to work in. When the plants are five or six feet high, pinch out the leading shoots to induce the growth of vigorous side branches. In training, we prefer the bending mode to the upright.

"We regard this Blackberry as a very valuable addition to the list of small fruits, because it is so simple in its cultivation, bears regular and abundant crops, and when perfectly ripe is of a highly agreeable flavour."

"We have only to add," says P. Barry, the editor, "that from what we have seen and heard of this fruit, it cannot fail to be an object of very profitable culture within any reasonable distance of large cities. It ripens after Strawberries and Raspberries, and before Paaches, and therefore comes most opportunely as to season. And then its cultivation must be of the easiest possible kind—only give it rich soil, and keep it clean and well cultivated, and an abundance of large fruit is certain. No one need expect such large fruit, however, as people have witnessed at *New Rochelle* and *Norwalk*, in ordinary soil and with ordinary culture. Manure must be applied unsparingly, and the ground must be kept clean and friable as work can make it. *Rich soil and clean culture* are indispensable to the growth of large fruits of any kind."

THE HOG CHOLERA.

A fatal malady has prevailed among hogs in the Ohio valley during the last six months. It is computed, that between 60,000 and 70,000 have fallen victims to the destructive distemper within a circumference of a hundred miles surrounding Cincinnati. The disease is considered incurable, having baffled the most critical investigations into its nature, and as steadily resisted all remedial agents. The malady has been vaguely denominated "cholera," from the failure to discover its true character, and upon that principle which a few years ago prompted mankind to apply the same term to all ills which resemble "cholera" in the human body, and which they did not comprehend. The distemper of which we treat, is similar in some of its operations to cholera, and in others it resembles erysipelas.

Mr. Thomas Graff, proprietor of the extensive distilleries and hog-pen apartments at Lawrenceburg, and who has lost about four thousand hogs this season by the ravages of the hog-distemper, has devoted his time patiently and indefatigably in seeking to fathom the profound and alarming mystery, but with indifferent success. His examinations, observations, and experiments, however, have satisfied him that the malady is infectious.

He at first attributed the disease to the "still-slop," with which his stock was fattened, although he entertained many doubts, from the fact that cattle fed on similar food were not affected. He, however, instituted inquiries among farmers remote from distilleries, and who fed their hogs on corn exclusively, and found the mortality equally great in their droves. He then procured four or five perfectly healthy hogs and enclosed them in a "hospital pen," where many others had died. He fed them exclusively on corn and water. In a few days they sickened and speedily died, thus proving the infectious character of the disease. He also observed that hogs belonging to farmers along the road on which the dead distempered hogs were hauled to be thrown away, were swept off by scores, thus confirming his previous test.—*Southern Planter*.

LAYING OUT ORCHARDS.

We have often observed a good deal of inconvenience and perplexity in measuring off and laying out orchards, from a want of accuracy at the commencement. If the rows are begun crooked, stake after stake may be altered, without being able to form straight lines and with only an increase of the confusion. If the first tree, in a row of fifty, be placed only six inches out of the way, and be followed as a guide for the rest, the last one will deviate fifty times six inches, or twenty-five feet from a right line, even if the first error is not repeated. We have seen large apple orchards with rows nearly as crooked as this. To say nothing of the deformed appearance to the eye, they proved exceedingly inconvenient every time the crooked space between the rows was plowed, and every time the ground was planted and cultivated with crops in rows.



FIG. 1—COMMON OR SQUARE ARRANGEMENT.

The most simple and convenient arrangement for orchards in all ordinary cases, is in squares, as shown in Fig. 1. But planters are often puzzled to know how to lay out such orchards with trees at equal distances throughout, and in perfectly straight rows. The easiest and most successful mode is first to measure off one side along the boundary, with a chain or tape-line (a chain is best,) and drive in a stake perpendicularly at equal distances, (say two rods or 33 feet,) in a straight line, and at a proper distance from the fence for the first row of trees. Then measure off each end in the same way; and between the two last stakes in these end rows, form another line of stakes like the first, which will be parallel and opposite to it. The more accurately the measuring is done, the less labor will be required in rectifying small errors—no stake should stand half an inch out of a straight line. These rows are represented by the letters a, b, c, d, e, f, g, h, i. Then measure off the distance between a and a, driving in a small stake or peg at each distance of two rods; and then in the same way between b b, c c, &c. If accurately done, these will all form perfectly straight rows. The holes may then be dug without the least difficulty or embarrassment, and the trees dug out. But a difficulty arises,—as the stakes must be removed in digging the holes; this is at once obviated by the plan here proposed by placing the tree in a line with the row of stakes on one side, and with the newly set trees on the other, as the holes are successively dug, and the trees set.

These directions may seem quite simple, but for want of being generally understood, a great many crooked lines of trees are seen through the country.

The second mode of arranging trees is in the old *quincunx* form (fig. 2) which is nothing more than a series of squares laid off diagonally, and has no special advantage to recommend it except novelty.



FIG. 2—OLD QUINCUNX ORDER.

The *hexagonal* or *modern quincunx*, (fig. 3) possesses two important advantages. One is its more picturesque appearance, and its consequent fitness for proximity to ornamental plantations; and the other is its greater economy of space, as the trees are more



FIG. 3—HEXAGONAL OR MODERN QUINCUNX.

evenly distributed over the ground. This is shown in fig. 4, where each tree stands in the centre of a circle surrounded at equal distances by six other trees, and each single circle leaves but little vacant space beyond it. If cultivated with horses, the furrows may be drawn in three in three different directions, instead of only two as in the square arrangement.

One principal reason why the hexagonal mode is so little adopted, is the supposed difficulty in laying out the ground. But like many other apparent difficulties, it becomes very simple and easy when once understood.

A BAD HABIT.—It has been said, to “*break* a horse of the habit of *breaking* his halter, you must *break* his neck;” and some person, desirous of saving time by performing the three feats at once, has recommended that the horse be tied on the bank of a stream, in such a position that when he breaks his halter he may turn a somerset into the water. But, on the contrary, a horse can be broken of the trick, and that without endangering his life or limbs. The remedy is simply to tie the horse, with a good stout halter, to the end of a stout limb of a tree near the ground. A horse does not break his halter by a steady pull, but by jerking at it, and as the limb will spring whenever he jerks, it will prevent his snapping it. Tie the horse in various places. (to limbs,) because if he is kept tied in one place he soon gives up pulling at the halter there, but when tied to a post he soon resumes his old tricks.—*True Flag.*

The best way to break the animal of the above habit is not to halter him, but let him remain loose in the stall, merely tying a rope across the entrance of the stall.

A MISER'S EPITAPH.—What I spent, I saved; what I gave, I have; what I saved, I lost.

THE FARMER'S WIFE.

[Dear Sir,—The following stanzas, which I have entitled “The Farmer's Wife,” are taken principally from the 31st chapter of the Book of Proverbs. If you judge them suitable you can give them a place in the *Agriculturist*.—About a year ago I sent you a few stanzas entitled “Success to the Farmer,” which you inserted, and which were afterwards copied into the *Mark Lane Express*.

Kind Heaven, bless the farmer's wife
With happiness and health;
Her virtuous ways shall speak her praise
Better than rank or wealth.

Her husband's heart—O happy man!
Shall safely trust his wife;
In drink and food she'll do him good
Through all her useful life.

For winter, and for summer wear,
She works in wool and flax,
And while she spins she sweetly sings
The honours of her sex.

She rises e'er the morning light
To give her household bread;
New work prepares, and old repairs,
While sluggards are in bed.

She mi'ts her kine, she makes her cheese;
Her butter's sweet and clean;
Her linen's white, her bread is light—
She's happier than a Queen.

In time of need, she'll clothe and feed,
The industrious humble poor.

She's not afraid of frost or snow,
For all her household band—
Happy and glad, are warmly clad
By her industrious hand.

Her husband through her pious deeds
Is known where'er he goes;
He's not afraid to lift his head
'Midst friends or haughty foes.

The law of kindness rules her tongue;
She eats no idle bread.
Honour and truth, in age and youth,
Shall well anoint her head.

Her children (happy is their lot!)
Shall bless their mother's name:
Her husband's praise, shall crown her days,
And herald forth her fame.

Though favour may deceitful prove,
And beauty bloom in vain;
The virtuous wife of pious life
In bliss supreme shall reign.

No wilful waste, or woeful want,
Shall come within her door;

Sparta, April 16th, 1857.

WILLIAM PETHERICK.

HARD OR SOFT WATER IN COOKING.—Nearly every one knows that *hard* water is such in consequence of its containing a small quantity of carbonate of lime, whereas *soft* water is nearly pure. It may not have occurred to every one that this difference often becomes an important one in the daily process of cooking. When vegetables are boiled in hard water, a deposit of this lime is made upon the surface of the vegetables, as peas, beans, corn, &c., by which process the food is not only not so thoroughly cooked in a given time, but even when done is not so well done. It is always harder when cooked, and less healthy. The minute deposit of lime upon the surface of such vegetables, not only impairs the taste and diminishes the softness of the food, but also acts unfavorably upon the digestion—an effect important to those in health, and doubly so to invalids. This subject might be expanded at some length, but we merely suggest it, and leave it for the reader's consideration, whether a pure soft water is not preferable to hard, for all the ordinary processes of cooking.—J. E. S.

WATER-PROOF TEXTILE FABRICS.—Take one pound of wheat bran, and one ounce of glue, and boil them in three gallons of water in a tin vessel for half an hour. Now lift the vessel from the fire, and set it aside for ten minutes; during this period the bran will fall to the bottom, leaving a clear liquor above, which is to be poured off, and the bran thrown away; one pound of bar soap cut into small pieces is now to be dissolved in it. The liquor may be put on the fire in the tin pan, and stirred until all the soap is dissolved. In another vessel, one pound of alum is dissolved in half a gallon of water; this is added to the soap-bran liquor while it is boiling, and all is well stirred; this forms the water-proofing liquor. It is used while cool. The textile fabric to be rendered water-proof is immersed in it, and pressed between the hands until it is perfectly saturated. It is now wrung, to squeeze out as much of the free liquor as possible, then shaken or stretched, and hung up to dry in a warm room, or in a dry atmosphere out-doors. When dry, the fabric or cloth so treated will repel rain and moisture, but allow the air or perspiration to pass through it.

The alum gluten, gelatine and soap, unite together, and form an insoluble compound, which coats every fibre of the textile fabric, and when dry, repels water like the natural oil in the feathers of a duck. There are various substances which are soluble in water singly, but when combined, form insoluble compounds, and *vice versa*. Alum, soap and gelatine are soluble in water singly, but form insoluble compounds when united chemically. Oil is insoluble in water singly, but combined with caustic soda or potash, it forms soluble soap. Such are some of the useful curiosities of chemistry.—*Scientific American*.

SALE OF NORTH DEVON CATTLE.

We would call attention to the Sale of North Devons by Mr. Wainwright, advertised in our present number. We are assured that this is one of the best herds in the United States, and the animals advertised will be sold.

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