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AGRICULTURAL REVIEW.

SEPTEMBER.

CONTENTS:—Editorial Department.—The County Exhibitions in September—The coming Provincial Exhibition—Our second volume—The Lower Canada Agriculturist in 1863—A young farmer on farming.—**Farm Operations.**—Seasonable suggestions—Benefits of Autumn ploughing—An hour in a pear Orchard—Ice-houses—Cutting fodder for stock—The pulping of roots—Flower garden in September—The cultivation of gooseberries and currants—The strawberry culture—How to cure ham and sides—Heavy iron work.

EDITORIAL DEPARTMENT.

THE MONTREAL PROVINCIAL EXHIBITION.

We are now confident that this exhibition will prove to be even more successful than we had contemplated. The best stock from Upper and Lower Canada will be in the field, and the relative superiority of both will be fairly tested. Never will Montreal have witnessed such a remarkable display of the Agricultural and Manufacturing districts of the whole Province as may be seen partly by the entries we now publish for the Agricultural department. A great deal is being done for the Provincial Rifle Match, the Volunteer Review, and the public entertainments, which will no doubt create a large attraction for visitors generally. Among these will be present His Excellency the Governor General, and the members of both houses of the Legislature. In short nothing will be wanting to give the greatest eclat to this great Agricultural and Industrial gathering. The following is the programme of the week.

OUR SECOND VOLUME—AND THE L. C. AGRICULTURIST IN 1863-4.

We now finish a second volume with the present number, and offer our sincere thanks to our subscribers for the very kind support we have received from them. We first thought that we could double the matter of each num-

ber, but a costly experience of five months soon proved the impossibility of such an increase in succession; and we were brought to the necessity of serving the last few months the deliverances made on the first few numbers. In future we will strictly adhere to the rule of paying in advance the annual subscription. We will increase to thirty-two pages the reading matter of each month, thus forming a volume annually of three hundred and eighty-four pages, more than we ever gave, with engravings. By a constant effort to improve the Lower Canada Agriculturist, we hope to meet the approbation and patronage of an Agricultural community.

Entries in 1st. Subdivisions—Horses.

Section.	Heavy	Middle	Light	Blood	Total.
1 Aged Stallions.....	18	4	2	3	34
2 5 years old stallions 2	5	7	1	9	
3 2 years old stallions 3	5	1	0	9	
4 Yearling Colts....	2	1	0	3	
5 Brood Mares.....	7	3	3	14	
6 3 years old Fillies..	3	1	2	6	
7 2 years old Fillies..	5	0	1	6	
8 Yearling Fillies... 1	1	0	0	2	
9 Spans of Horses.... 3	3	8	0	28	
10 S. Carriage Horses. 4	0	0	0	4	
11 Saddle horses..... 6	0	0	0	6	
Total.....	49	40	28	4	121

Entries in the 2nd Subdivision—Cattle.

Section.	Durham	Hereford	Devon	Ayrshire	Galloway	Canadian Breed	Fat and Working Oxen.	Total
1 Bulls, 4 years old and over.....	4	2	5	8	2	2	1	24
2 Bulls, 3 years old.....	4	0	1	5	0	4	6	20
3 Bulls, 2 years old.....	3	0	1	7	0	4	3	21
4 Bulls, 1 year old.....	5	1	2	5	4	3	4	28
5 Bull calves.....	7	1	4	7	3	3	10	45
6 Cows, 4 years old and over.....	16	3	6	11	6	20	0	62
7 Cows, 3 years old.....	4	2	2	12	2	6	0	28
8 Heifers, 2 years old.....	10	1	3	10	2	13	0	38
9 Heifers, 1 year old.....	5	1	3	6	4	12	0	31
10 Heifer calves.....	6	1	3	5	3	5	0	23
Total.....	65	12	30	76	27	72	41	320

Entries in 3rd Subdivision—Sheep.

Section.	Leicester	Cotswold	Long wool	Southdown	Cheviot	Merino	Saxon	Fine wool	Fat Sheep	Total
1 Rams, 2 years and over.....	20	10	19	4	3	4	2	2	3	59
2 Yearling Rams.....	12	5	7	2	1	1	0	0	9	37
3 Ram Lambs.....	13	3	6	3	2	2	1	1	0	31
4 Ewes, 2 steers and over.....	18	5	8	4	2	4	1	2	0	44
5 Yearling Ewes.....	15	3	3	3	1	1	1	1	0	28
6 Ewes Lambs.....	12	5	7	2	1	3	1	1	0	32
Total.....	90	31	42	18	10	15	6	7	12	231

Entries in 4th Subdivision—Swine.

Section.	Yorkshire	Berkshire	Large breed	BuSolk	Small Berkshire	Small breed	Total
1 Boar, one year old and over.....	2	0	2	2	1	3	10
2 Boar under one year.....	3	0	2	2	3	7	17
3 Breeding sow, one year and over. .	5	1	1	7	1	6	21
4 Sow under one year.....	3	0	2	6	3	7	20
Total.....	13	1	7	17	7	23	68

Poultry, 44 entries—Agricultural productions, 450 do —Agricultural Implements, 100 do.

COUNTY EXHIBITIONS.

Chateauguay, Ste. Philomène, Sept. 22.
 St. Jean, St. Jean, Sept. 24.
 Deux-Montagnes, St. Eustache, Sept. 24.
 Rouville, Rougemont, Sept. 26.
 Argenteuil, Lachute, Sept. 29.
 Bagot, Ste. Rosalie, October 1.
 Montcalm, St. Jacques, October 1.
 Soulanges, Soulanges, October 6.

L'Assomption, L'Assomption, October 7.
 St. Maurice, Yamachiche, October 7.
 Bonaventure, No. 2, Maria, October 7.
 Temiscouata, St. Arsène, October 13.
 Bonaventure, No. 2, Munn, October 14.
 Ottawa, No. 2, Thurso, October 15.
 Bonaventure, No. 2, Carleton, October 10.
 Bonaventure, No. 2, Cross Point, February 17.

FARM OPERATIONS.**SEASONABLE SUGGESTIONS.**

A little more attention to the picking and barreling of apples, we think would be of great advantage both to growers and purchasers of this fruit. A few years ago nearly all the apples were shaken from the trees. The consequence was more than one-half were bruised and rotted. Of late this has been corrected, and growers for market pick their apples by hand. Another difficulty is the packing in barrels. Apples, if put into barrels in the ordinary way and the head gently pressed on, move in shipping and rolling about, and become injured. Almost every specimen will be found bruised. To prevent this, screws have been used for pressing on the heads of barrels. This bruises and destroys about a peck on the top, but keeps those below in place, so that they come out sound, unless kept too long in barrels, until those on the top become rotten, and the decay injures those below. This is somewhat an improvement, but is a very defective plan, after all. We need some better method. If some elastic material were placed at the bottom and top of the barrel, and perhaps a layer in the centre, we think apples might be packed and shipped without injury to a single specimen.

This is the time to make preparations for fall planting. If not already done, make your selection at once, and forward it to some good nurseryman. Clean up the garden, make new walks, beds, &c., as may be needed, and leave nothing for the spring that can be done in the fall. The spring will bring its own work, and enough of it. Those who for many years have designed to make beds of bulbs, such as tulips, hyacinths, crocuses, &c., &c., should remember that is their last chance for another season. It will not do to plant bulbs in the spring. All nurserymen are annoyed by receiving orders for bulbs even when they are in flower in the ground. After the bulbs are set, cover the ground with a coating of manure or leaves from the woods, if you can obtain them. They afford good protection from the severe frosts. All herbaceous plants are better plants in the autumn, and we recommend to our readers who love flowers a small selection of perennial phloxes. Fine varieties can now be obtained at most of our nurseries. There are many herbaceous plants worthy of general culture, descriptions of which we have given in previous numbers of the RURAL, and catalogues can be obtained, by sending a stamp to pre-pay postage to any of the leading nurserymen of the country.

Celery should be well-earthed for blanching, and everything that needs to be done before

winter should be attended to at once, for we have no time to lose. In a very few weeks winter will be upon us in earnest. The long winter apples are allowed to remain on the trees the better, without being frozen, and they will endure more frost than any other fruit. Where farmers have but a few for family use they may afford to be a little venturesome, but those who pick for market should have this, like all other fall work, attended to in season, and without hurry or confusion. Clear away all grass and weeds and everything that will afford a harbor for mice from around orchard trees. A little work of this kind in the fall may save hundreds of dollars. Trees planted last spring will be benefited by having a cone of earth thrown up about the trunk. It protects the roots and furnishes a very good support to the trunk.

BENEFITS OF AUTUMN PLOUGHING.

The tillage and drainage of the soil are very closely related to each other. So indeed are the tillage and manuring the soil. And these, not merely as cause and effect are related—though drainage does enable tillage, and tillage does alter composition—as being operations of the same class and kind. And thus Mr. Baily Denton, though engaged in a lecture upon land drainage, could not help referring to the steam plow—as the great tillage implement of the future, and we had from him, too, the striking fact bearing on the composition of a fertile soil, that in a state of perfect tith one-quarter of its bulk is air.

Mr. Smith, of Lois-Weedon, says that in all clay soils containing the mineral elements of grain, perfect tith dispenses with the need of manure; and there cannot be a doubt that a deep and thorough tillage enables soil to draw immensely on the stores of vegetable food contained in air and rain. Mr. Hardy says that perfect tith dispenses with the need of drainage, and there can be but little doubt that deep and thorough tillage facilitates the operation of whatever drainage may exist, whether it be natural or artificial.

In both these cases the useful lesson is well taught, that it is true economy rather to put the cheap and copious storehouse of Nature's agencies to its fullest use, than by laborious and costly artificial means to imitate expensively their operation.

Such a lesson applies, beyond the advantages of tillage to the methods by which tillage is obtained. Among the earliest suggestions of cultivation by steam power was that of reducing by its means the soil to tith at once. The land was to be torn down as the deal is torn

down at the saw-mill; though before the machine it may have been as hard and firm as wood, behind the tool, as it advanced at work it was to lie as light and fine as sawdust. But it has at length been found that it is better, because cheaper, and more perfect, too, to leave this last refinement of the tillage process to the weather, which does it without cost. The land is now torn—smashed up—or moved and thrown about by plow or grubber in great clods and lumps. This is best done in dry autumn weather, and thus it lies till spring. Certainly no climate is better adapted for cheap tillage than the English—the rains and frosts of winter following a dry September and October must penetrate and thrust asunder the clung and hardened masses of the soil. No two particles shall remain adhering to each other, if you only give room and opportunity to the cheapest and most perfect natural disintegrator in the world. No rasp, or saw, or mill will reduce the indurated land to soft and wholesome tilth, so perfectly as a winter's frost. And all that you need to attain its perfect operation is, first to provide an outlet for the water when it comes—by an efficient drainage of the subsoil, and then to move the land while dry, and break it up into clods and fragments, no matter how large they be, and leave them for alternate rain, and drought, and frost, and thaw to do their utmost.

Too little regard is paid in this country to advantages that are to be derived from ploughing heavy lands in the fall of the year, and leaving them rough and exposed to the action of the frost throughout the winter. This winter fallowing is of great service in other respects; it tends to rid the land of weeds and of the seeds of noxious plants, which would otherwise germinate, but which to a very considerable extent are destroyed by exposure to the frost. So highly is fall ploughing esteemed in Flanders that the farmers of that country make use of an instrument unknown among our agricultural implements, but which is especially adapted to elevating the soil and leaving in ridges so that the largest possible surface may be exposed to the beneficial influence of the winter frost. The action of frosts mellows even the stiffest clays, breaks down the clods, and leaves the land in the spring far more light and friable than it could possibly be made with any number of ploughings, or even by the plough, the clod crusher and the harrow. In fall ploughing it is of course essential to the perfection of the work that the furrow slices should not be laid flat, but that they should be so turned as to lay at about an angle of forty-five degrees, the outer edge of the furrow resting upon the inner edge of the one that preceded it. The advantage of this mode of ploughing is two-fold—you present a much larger surface to the action of the frost, and at the same time an open drain is formed between the furrows, which not only carries off the surplus water, but allows the air to permeate through the mass, and thus renders the soil fit for tillage at an earlier day in the spring. Moreover the harrow breaks down more thoroughly a soil which has been thrown up into ridges, than furrow slices that have been merely

reversed and lie flat upon the ground. Neither sands nor sandy loams are at all benefited by autumn ploughing, but wherever there is a soil that has a tendency to bake and clod, exposure to the frost renders its subsequent tillage much easier, and exerts a singular beneficial influence upon the future crop. The action of the frost also upon such soil is peculiarly valuable in one other respect—it exerts a potent influence in rendering soluble the inorganic constituents contained in the soil, and setting them free for immediate use in the spring. All clay soils, says Mr Smith of Lois Weedon, whose experiments in spade husbandry, and in growing heavy crops of wheat upon the same soil for many successive seasons without the use of manure, have made his name known to the generality of farmers—"All clay soils," he remarks, "contain the elements of wheat, and perfect tilth dispenses with the need of manuring." This is pushing a theory a little too far. It was propounded years ago by Jethro Tull, but can never be accepted in its entirety. The reason is obvious. The richest soil contains only a certain positive amount of plant food, which must be exhausted eventually by constant cropping if a portion of those constituents are taken from the soil annually, and the loss is never replaced by manures and fertilizers; but it is nevertheless true that an immense amount of plant food lies dormant, which in heavy clay soils can only be rendered soluble and therefore actively useful by thorough disintegration, whether that work be effected by spade husbandry or by action of the frost. English experience has come to the conclusion of late years that nature's agency in this respect is superior to the more costly agricultural implements, and that on such soils as those to which we refer, the most laborious and artificial means of reducing them to a fine tilth, and thus rendering their mineral constituents available, do not compare with the action of frost upon a rough exposed surface. The London Agricultural Journal in discussing this question declares that after all the expensive appliances which science has invented or industry has brought into play—"It has at length been found that it is better, cheaper, and more perfect too, to leave this last refinement of the tillage process to the weather—which does it without cost. The land is now torn up—smashed up—or mowed and thrown about in large clods and lumps. This is best done in dry autumn weather, and thus it lies until the spring. The rains and frosts of winter following a dry September and October, penetrate and thrust asunder the hardened masses of the soil. No two particles shall remain adhering to each other if you only give room and opportunity to the best disintegrator in the world. No rasp, or saw, or mill, will reduce the indurated land to soft and wholesome tilth so perfectly as a winter's frost." All that is needed is to provide an outlet for the water when it comes, by efficient drainage, and that drainage is accomplished when the land is deeply ploughed, and the furrows are thrown on edge just lapping each other, and presenting, as they rest on the subsoil, a channel through which the surplus water may pass off.

—*Baltimore Rural Register.*

AN HOUR IN A PEAR ORCHARD.

We recently had the pleasure of visiting the Pear orchard of W. Bacon, Esq., of Roxbury, and of fully realizing some of the marvellous stories we have heard, of pear raising, in relation to both trees and fruit. Mr. Bacon was accustomed to the farm in his youth, and cultivated there his natural taste for rural pursuits. He has "an eye for trees," as others have for paintings, or fine animals, or beautiful landscapes, and knows all their names and peculiar habits, as a parent does those of his children. But that "Divinity that shapes our ends," called him away from the profession which he loved, and placed him in a dry goods store, where forty years of devotion could not obliterate his early tastes. Gallons and laces, muslins, and Tibets, and collars might bring profits to his till, but never could satisfy his desire for the swelling buds, fragrant blossoms and graceful branches of favorite trees. So at the end of more than sixty years, he snatched an hour now and then from the counter, raised a piece of land a yard wide from the salt marsh, dressed it, planted his trees, fashioned their limos to gratify his critical eye, and now, one among them stands the handsomest Dix pear we ever saw! Six or eight other trees comprised his first effort. They were planted directly behind his store, which stands on the main street in the city of Roxbury, and were placed upon a sort of terrace which he threw up from the marsh, and which answered the double purpose of a dike to keep out the returning tides, as well as a bed for the roots of his favorite trees. These eight or nine trees are now each about eight inches through, and pay the interest of more money than we dare state in this notice.

At length the old love got the mastery; the store and all its interests were abandoned to his sons, and he went forth into the cheerful light to indulge his early tastes, and grow young again. He now entered upon his plans with avidity, by making ditches through the marsh, and diking out the salt water that returned with the flood tides. Where paths were to be made, the earth was thrown out to the depth of three feet and its place supplied with oyster shells. Over this earth was thrown street sweepings, old mortar, ashes, and all similar rubbish that he could obtain. To this was added large quantities of *tan bark*, and to this, mainly, he imputes the wonderful success he has had in producing his almost unrivalled crops of pears! Not that the trees find in this the principal aliment they require, but that it forms a soft, moist and porous root bed, where the roots can range without obstruction in search of other and richer substances which he applies to the soil. The land is so thoroughly drained, and so open and light, that a fortnight's rain, he says, makes no difference in its appearance.

The piece of land we went over is something less, we should think, than one acre. On this he has *six hundred* standard pear trees; that is, trees set in place and not to be removed, though most of them are on quince stocks,—beside large numbers of young trees which are for sale, and plum and peach trees, currants,

gooseberries, raspberries, flowers and ornamental shrubs. Between these he manages to raise his potatoes and such other garden stuff as he needs for his table.

Passing a tree, Mr. B. remarked that it produced four bushels of pears this season, which he sold for *forty-eight* dollars! Another near it a little less, and a Beurre Diel, three years ago, gave him the neat sum of *eighty-two* dollars for a single crop!

The ground upon which all his trees stand, is made ground—redeemed from the salt marsh first by digging ample ditches, and using the material as far as it would go for filling up, and following with loam, leaves, street sweepings, weeds, old mortar, decaying chips, and almost all sorts of rubbish which he could obtain, but, chiefly—he emphasised—*tan bark*, which he applies to this small space at the rate of twenty-five cords per year! He dwelt upon this part of his process with unusual earnestness and gratification.

Passing along, we thought if the ditches could talk, they would tell a favourable story. It seemed to us that they partook in some measure of the nature of common sewers, and collected at the hands of the proprietor an abundance of the richest materials both for trees and their crops. Be this as it may, Mr. Bacon has achieved a success nearer perfection than anything else in that direction which we have ever witnessed. That success has been gained, mainly, by three things, viz:

1. Thorough Drainage.

That the drainage in this case is perfect, is evident from the fact stated by Mr. B., that a fortnight's rain makes no perceptible difference in the appearance of the land. Those who understand the philosophical principles involved in such drainage, will readily comprehend the advantages gained beside that of the passage of rain water through the soil.

2. The Depth and Richness of the soil.

The depth of soil under these trees is not anywhere less than *two feet*, and probably varies from that to *three feet*, and from the surface to bottom, it is thoroughly mixed with the rich substances which have already been named. This is kept light and porous by frequent digging, so that nothing can be more convenient or inviting to roots of any sort of energy to run and feed in, than the bed which is prepared for them.

3. The third material point is that of *Shelter*. The importance of this is not yet fairly appreciated by our gardeners, even, and by the farmer is scarcely thought of in connection with his fields. Mr. Bacon's orchard is surrounded by buildings, only separated from it by passages perhaps twenty feet wide, and by a fence next to the trees some eight feet high. On the south corner of the lot stands one of the largest trees in the number, and he remarked that he "should head that down, because the wind had too much power upon it."

It may be objected by the reader, that we cannot imitate this example in all of these points. We should not, however, plant pear trees where we cannot avail ourselves of the first, *drainage*—and the true policy is, not to

set any more trees than we have the means of providing with a root-bed something like his, and then it will not be expensive to plant evergreens or put up fences for shelter.

Those of us who have already planted pear trees may find many valuable hints from Mr. Bacon's practice. If we cannot reach his excellence, let us, at least, attempt to imitate it, by occupying the entire ground with trees, say six or eight feet apart, and keeping them enriched and cultivated in the best manner, *as far as we go*. This course pursued with a dozen trees, will give us more profit than will three times the number managed upon the common plan.

We saw nothing in the practice of our friend in regard to setting or shaping the trees, that required comment. The trees themselves were as clean and bright as the morning face of a pretty baby. The limbs and spurs were remarkably stout, and of a light gray color.

In reply to the question, "when should pears be gathered?" he said a "little before they are ripe." When gathered, he places them on shelves in single tiers, in cellars. They are well ventilated, and a little moist, and so arranged that he has considerable control over the temperature. Many of his pears he sells himself, at prices ranging from \$1.50 to \$4 per dozen.

ICE-HOUSES.

The best time for building ice-houses being now at hand, and as it is not generally known that with a little additional expense, an ice-house can be constructed so as to answer the double purpose of keeping ice, and preserving milk, butter, &c., I will give your readers a description of one, which I built in the Fall of 1859, with a preserving chamber for this purpose.

Ice can be kept in large quantities during the whole summer season in houses built entirely above ground; but where it is desired to have a preserving chamber, and to insure a sufficiently low degree of temperature, to attain good results it is indispensably necessary that the earth should be banked up to the height of several feet against the outside of the building. In constructing my ice-house, I took the advantage of a convenient and descending spot; sunk a pit fifteen by eighteen and from 4 to 5 feet deep; walled it up to the height of 9 feet; banked the earth up to the top of the wall all around, except a space for the door way; upon the wall I put a frame 6 feet high which gives a height inside from the bottom to the comb of the roof of over 20 feet. I put in heavy sills in the bottom, except in a space of 4 feet square for the preserving chamber. Upon the sills, I put a floor of two inch oak plank, and on the top of this a floor of one inch pine plank, jointed closely. The floor has a descent of two inches towards the preserving chamber, and it conducts the waste water from the ice to this chamber. I put in an inside frame, and lined it inside; this left a space of six inches between the lining and the wall to fill in with sawdust, and the partition between the ice and preserving chamber is also double, and filled in with sawdust well packed.

To complete the preserving chamber, I first put in clean sand to the depth of four inches, then paved it with a medium of burned bricks, they being preferable to hard, on account of their capacity to absorb and retain a large amount of water. Pains were taken to have the floor exactly level in the one direction, and also very tight, so that all the waste water from the ice shall be conducted to and distributed regularly upon the bricks. This keeps them so constantly cold as to preserve milk, during the hottest season, for from thirty-three to thirty-six hours, perfectly sweet, and butter very hard.

One valuable feature belonging to this mode of preserving milk and butter is, that during the warmest weather of summer season, when cold sweet milk and butter of a degree of solidity equal to that of the winter season is appreciated as one of our greatest luxuries, we can have it so from the simple fact that at that particular time the supply of the cold ice-water is greatest.

Butter made and kept in this way does not become as soon soft after being brought to the table as that which has been kept in a spring of water, nor do thunderstorms appear to hasten the development of lactic acid. We have noticed no perceptible difference in the length of time which the milk has remained sweet in regard to clear or stormy weather. I have observed at different times, by placing the thermometer within one foot of the bricks in the preserving chamber, that the temperature was about 54 degrees, while it was 95 in the shade outside. The sand underneath the bricks subserves an important purpose, by retaining the water, and supplying it to the bricks by capillary attraction at such time as there is not a great supply coming from the ice.

The space above the preserving chamber should be open and unobstructed to the roof, and over the ice there should be good ventilation to the roof, to carry off all the vapors which may arise from the milk.

CUTTING FODDER FOR STOCK.

We are decidedly in favor of it; not from any precise and accurate experiments by weight and measure, but from a close and interested observation of the spending of cut and uncut fodder, and from its effects upon the stock that consumes it, through a period of several years. The difference in feeding out a certain quantity of hay, cut and mixed with a given amount of grain, and feeding out the same amount of hay whole, with the same amount of grain, has been too great with us, to admit of a single doubt of the profitableness of cutting the fodder. Especially is this the case with corn fodder. Fed whole, the cattle will select the husks and leaves, and reject the stems, wherever the crop is a stout one—but when cut, mixed with a small quantity of grain, moistened, and allowed to stand twelve hours, cattle will eat every particle of it, excepting perhaps, some of the rank and hard points of the stems.

In most hay fed to cattle, some portion of it will be less attractive than the rest, and where cattle are well fed, they will leave the poorest which is quite apt to get under them as litter, or to be at once thrown through the scuttle to the manure heap, or at best, scattered over the

yard to be pitched over again or trodden under foot. This is the case with much hay that is too valuable to go to such purposes. When hay is cut, this loss is entirely prevented, as it is rare to find anything left but bits of stick or the stems of rank weeds, if such were on the hay.

That the cutting adds anything to the amount of nutriment contained in the fodder, we do not argue—nor does it to the potato we eat, and yet we find it vastly more convenient in a smaller form. It may be urged that cattle are provided with the means of cutting long fodder, and therefore do not need it in a comminuted form—but the buffalo, in his native ranges eats no tall grasses and rank herbage if he can avoid it, but traverses over vast plains to graze upon the short, tender grass, thereby showing a decided preference for his food in smaller dimensions than is afforded in corn fodder, or in hay that affords two or three tons to the acre.

We have cut the fodder for a stock of fifteen to twenty head of cattle, watching the effect with interest, and came to the conclusion that the process is an economical one—but tested by accurate weight and measurement, this apparent advantage might not be sustained after all.

THE "PULPING" OF ROOTS.

The Scottish Farmer has the following remarks on the advantages of feeding roots *pulped* by machinery made for the purpose, instead of whole or simply cut into small bits:—

When the cattle feeding season begins, we know what quantities of turnips are consumed (wasted we might call it) just at the first start. Experience teaches us that the consumption of roots is in nowise commensurate with the improvement of the animals, but exactly the reverse. The quantity of water in the turnips at this season sets the bowels of the cattle out of order, and they fall off instead of improving in condition.

With the successful experiments as to the pulping of roots now before us, we cannot help thinking that those feeders who continue to give whole or even partially cut turnips to their cattle, instead of pulped ones mixed with chaff, are sitting in their own light as regards the question of profit and the saving which can be effected by the use of the improved machinery now in use for the manufacture of roots for cattle.

It has been authenticated by recent experiments with the pulper that there is a clear saving of 40 per cent. from the practice—that with ten tons of turnips, given at the rate of 84 lbs. daily, along with 4 lb. of oil cake, a bullock can be fattened as well as he can on 15 tons given cut or whole.

The philosophy of profit lies in the quantity of cut straw which the animals are forced to swallow with the pulp. It has been found a good plan to send the leaves through the pulping machine along with the bulbs. We have seen the food prepared in this way and mixed with chaff, and it really seemed a tempting looking salad; a capital introduction to roots one would suppose for cattle just taken off grass, instead of filling their stomachs with cold watery turnips and bringing on the se-

our. It is allowed that, to be successful on a large scale with the pulping of roots, the motive power must be either water, steam, or horses—as the manual labor will never be realized or even executed by farm laborers in Scotland, although the case appears different in England, for out of several thousand machines sent out by one firm in the implement trade, no more than a moiety of them are for other than hand power.—VERY. ED.

FLOWER GARDEN IN SEPTEMBER.

This month is a busy month in the flower garden, for in addition to the ordinary work there will be the collecting of seeds, re-potting of such tender plants as have been plunged in the borders during the summer, the growth of cuttings of Pelargoniums, Geraniums, Heliotropes, &c., the preparation of beds for bulbous roots, and the sowing of some kinds of flower seeds, as Double Rocket Larkspur, which do better when started in the fall than when planted in the spring.

In collecting seeds, those from the finest flowers should be procured, put in small paper bags, and *carefully labeled*. For want of this precaution, in the spring there will be an infinity of trouble in the difficulty of ascertaining the names of the seeds, and many it will be impossible to identify until the plants from them have flowered. Therefore make your bags now, and label them before you wish to use them. It is amusing to watch the overhauling of an old seagr box, or other receptacle of seeds, in a family where order and precision are unknown—packages of every size and shape, some of muslin, others of newspaper or wrapping paper, some tied up with a piece of yarn or thread, others with the ends twisted, and many with no security against the dropping out of the seeds. On some of the packages there has been an attempt to label by writing the name with pencil, but of course it is impossible to decipher it after the friction it has undergone. In one package there are seeds which are either cucumber or melon seeds, which it is a great satisfaction to know, as you will be sure of either one or the other when they grow. At the bottom of the box there is a pint or more of miscellaneous seeds, which have escaped from the loosely fastened packages, and perhaps a score of labels written on small pieces of paper or wood, and which, having been tucked under the strings, or into the ends of the packages, have fallen out. Now all the confusion and trouble arising from this, might have been avoided by ten minutes' labor in the beginning.

In preparing a bed for bulbs, due attention must be paid to digging and manuring the soil. This should be dug eighteen inches deep, and well enriched with thoroughly decomposed manure. The bulbs need not be planted until October.

Seeds of the Pansy may be sown in rich soil in a situation where they may receive protection in the winter from a frame, as they will bloom much better by covering them.

Plants that have been in the borders and are taken up for house cultivation, should be carefully lifted and potted, that they may receive

as little check as possible. They should be kept in the shade out of doors for a while, unless frosts are apprehended, when they must be protected in some manner or removed to the house. Heliotropes should be well cut back, and also any other plants which have been blooming during the summer season. After a season of rest they will start vigorously, and will bloom finely in the winter.

Chrysanthemums which have been planted out must be raised carefully before severe frosts, and potted with as little disturbance to the roots as possible. Those which have been kept in pots and plunged in the border through the summer will bloom a month earlier than those planted out. This is a good way of prolonging the bloom of this handsome plant, desirable especially for beautifying the green-house or parlor at a time when there are very few flowers.

As flowers decay, remove them, unless wanted for seed, and all plants which have finished their bloom may be thrown away. Sweet Williams, Hollyhocks, and other biennials, may be transplanted from the seed bed to the borders, where they are to remain.

THE CULTIVATION OF GOOSEBERRIES AND CURRANTS.

The most reliable gooseberries are those of American origin, being free from mildew. *Houghton's Seedling*, *Downing's Seedling*, and *Mountain Seedling* are the principal varieties. The first two are well known, and the latter somewhat new.

We have a good variety of good currants,—all of European origin,—we believe,—red, white, and black. The following are most desirable:

RED.—*Red Dutch* is an old and well known sort, with fair-sized bunches and berries. It is a good bearer and a free grower, and a much better currant than most people suppose, as any one can ascertain by giving it good culture. The *Cherry* is, perhaps, the largest red currant, having berries of extraordinary dimensions. The bunches are short and the fruit somewhat acid. *La Verseillaise* has berries about as large as the *Cherry*, but much longer bunches. It is a French variety not much disseminated in this country, except around Boston, where we understand it is grown quite extensively for market, proving more productive and more popular in market than any other sort. *Victoria* is a late variety; light, bright red; berries medium size to large; bunches very long. A productive and beautiful variety. *Prince Albert* is also a late variety, similar in color to *Victoria*, or a little lighter; berries larger; very productive.

WHITE.—The *White Dutch* like the *Red Dutch*, is a good currant; but, as a general thing, it has been so badly neglected that its true character is little known. It is a high-flavored fruit; berries larger and bunches rather shorter than *Red Dutch*, of a yellowish-white, and very transparent skin; very productive. The *White Grape* is now the favorite white currant. This and the *Cherry* have been for some years the most popular sorts. The bunches are long and the berries very large, whitish-yellow, sweet and good; very productive.

BLACK.—The *Black English* is the common well known black currant. With good cultivation and plenty of manure, it produces a good crop of fine fruit. It has a bad habit of dropping its berries at the time they get about ripe, so that the bunches when gathered have but few berries remaining. The *Black Naples* is larger and better than the *Black English*, and is the best of the black currants. Bunches rather short, but berries very large. This is now about the only black currant planted, and is a most desirable variety. The *Bank Up* is an English black variety, with short, heavy bunches, and shouldered. The berries hang on the bunches well, and we are much pleased with it. It bids fair to be a very valuable sort.

The roots of the black currant are short and fibrous, and consequently it has a small space in which to gather food. It is also a great feeder, and therefore requires a liberal supply of manure. One season of good treatment will convince the cultivator of this fact.

There are other varieties of currants, but the above are the leading and best sorts.

The currant and gooseberry require a somewhat similar treatment. The currant bush, as we generally see it, is but an ungainly stump, surrounded with a thicket of suckers. Let the pruning knife be judiciously applied. Remove all suckers, and have a clean stem from six to ten inches high, and a pretty round head, with the branches kept sufficiently thinned out to admit light and air freely. Then, every year give a good dressing of well-rotted manure, and you will have plants that you will have good reason to be proud of, and fruit that your friends will mistake for grapes. The shoots of the previous year's growth should be shortened in every spring, as this will induce the formation of fruitspurs. The black currants, however, bear principally on the wood of the previous year's growth.

We have succeeded in making good plants and in growing fine fruit, by allowing about four branches to start from the ground. As soon as the plant has borne a crop, cut one of these main branches down to the ground, and a new one will start from below the surface. Next year cut another, or two, if deemed necessary; and in this way all of the plant above the ground is renewed every three or four years. This would be a very valuable plan, were it not for the fact that young plants are so easily obtained, and come into bearing so early.

We would recommend the training of the currant on walls or fences. The finest fruit we have ever seen was raised in this way. Thus cultivated, they occupy no room in the garden, give no shade to injure any other plant, but make beautiful the ugly fences and walls that disfigure even the best kept American gardens. Those who have travelled in Europe know that there, even in cottage gardens of little or no pretensions, not a foot of unsightly wall or fence is to be seen. All are covered with currants, vines, or fruit trees, presenting a barrier of foliage, fruit, and flowers, delightful to behold.

STRAWBERRY CULTURE.

A small work has lately been published in New York, by Andrew S. Fuller, entitled—"The Illustrated Strawberry Culturist." It is an interesting and valuable manual, and will be of great service to inexperienced cultivators. It comprises the history, and botanical character of the strawberry, with remarks on field and garden culture, the production of new kinds by hybridization, raising plants from seeds, &c. The following remarks from the work refer to the subject:—

Time to plant.—Although the strawberry may be planted with safety at any time from early spring until fall, yet there seems to be two seasons of the year in which it may be done more successfully than any other, namely April and May in spring, September and October in the autumn. August is sometimes chosen, but it is usually a dry month, and the heat being so great, the plants are more liable to die or be very much injured. Besides, the young plants are not so well rooted as they are when allowed to remain until September. I have always had better success by transplanting in September than earlier in the season, unless it be in the spring.

There is but little choice between April and September, except it be that plants carefully planted in autumn will give a fair crop the next season, while those planted in spring will bear scarcely any fruit until the following year. Some cultivators make a practice of planting in September and taking a crop from the plants the following season, and then plough the plants under and plant again. To have this plan work successfully, it is only necessary to have the ground very rich, so that the plants will become very strong by the time they come into fruit.

Preparation of Plants.—When transplanted in the spring, the half-dead leaves should be pulled off and the roots shortened one-third or one-half their length. This shortening induces them to throw out a new set of fibrous roots from the ends cut off, which they would not do otherwise.

It also causes other roots to push from near the crown of the plant. The shortening of the roots is beneficial to plants that are set out in the spring, no matter whether they have been a long time out of the ground, or have been taken up but recently, as the roots have become ripened during the winter, and the ends are always broken off in taking up, and it is necessary that they should be cut off smooth and clean before planting again. Not so with plants in the fall; for the roots of the strawberry continue to grow from the extreme end until cold weather sets in, and when carefully taken up before this, the ends are not broken, and if soon planted again they immediately grow.

Choice of Plants.—Young runners that are well rooted are always the best, and old plants should never be used if it can be avoided. When a variety is very scarce and valuable, the old plants may be taken up and pulled to pieces, roots and tops trimmed and then planted.

Planting.—Choose cloudy weather for planting, if possible. Draw a line where you are to put the rows of plants, keeping it a few inches above the ground, so that you may plant under the line; this is much better than to let the line lie on the ground, for then it will be in the way of the transplanting trowel; spread out the roots evenly and on every side; cover them as deeply as you can without covering the crown of the plants; press the soil down firmly around them with the hands.

If the weather should prove dry, give them a good soaking with pure water (no mere sprinkling will do) as often as they require it, which will be as often as the foliage droops. The rows should be two and a half feet apart, and the plants one foot apart in the rows. When pistillate varieties are used for the main crop, then every fifth row must be planted with a hermaphrodite variety, for the purpose of fertilizing the pistillates. Pistillate varieties will not bear alone, nor will they bear a full crop or perfect berries unless abundant supplies of perfect flowering varieties are placed in close proximity. Let no weeds grow among them, and stir the surface of the soil as often as possible; the oftener the better. We know that some cultivators assert that there is much injury done to the roots by frequent hoeing; but we have never found the plants as much injured by hoeing or forking among them as they were by neglecting to do either. Take off all runners as they appear, so that all the strength of the plant shall be concentrated, and not distributed among several, as a dozen small plants will not produce so much or so fine fruit as one good strong one. When plants are wanted, make a separate plantation for that purpose.

At the approach of winter, the entire surface of the soil, plants and all, should be covered with straw, hay, or some similar material, to the depth of one inch; the object being not so much for the purpose of keeping out the frost as to prevent the frequent freezing and thawing during the early part of winter and the approach of spring. As soon as the plants start in the spring, the covering should be pushed aside, so as to allow the plant to grow up through it. The question is often asked, whether it is necessary to cover the hardy varieties in this locality during winter? and if we should judge from the difference in the appearance of the plants in the spring, we might doubt the expediency of such a practice; but I have found it highly beneficial to cover all varieties, having tried several experiments the results of which were that on an average we obtained about one quarter more fruit when the plants were covered than when they were not.

The embryo fruit buds are formed in the fall, and are often injured during the winter and spring, and of course if there are but few fruit stems put forth, there is but little call on the plant to support them, and consequently the leaves have more food.

Usually the plants grow strong or weak in proportion to the quantity of fruit they bear. This would often lead cultivators to suppose, from the luxuriant growth of the plants, that

covering was of no benefit, if not positively injurious.

Keep off all runners at all times, and pull up all weeds that come up through the mulching. No stirring of the soil is needed if a good depth of mulch is sustained. It will generally be necessary to add a small quantity of mulch every fall, depending, of course, upon the nature of the material used. Salt hay is a material that is much used near New York, and it is cheap, lasting, and easily applied; but straw, hay, carpenters' shavings, leaves, tan bark, &c., are all good. Strawberry plantations that are kept well mulched, and freed from weeds and runners, will last for many years, depending, of course, somewhat upon the variety planted and the nature of the soil.

On very dry or sandy land it is well to mulch the ground very soon after the plants are set out, or so soon as they take root in the soil, as there is but little danger of being troubled by weeds the first season, and the mulch keeps the earth moist, a thing which it is very difficult to accomplish in any other way.

HOW TO CURE HAMS AND SIDES.

There are many ways to cure hams, but some of them are not desirable, unless we are satisfied to eat poor hams in preference to good. A ham well cured, well smoked and well cooked, is a favourite dish with most people; but there are very few indeed who can relish ham which has been hardened and spoiled by salt, or tainted for the want of salt in curing, and may be worse spoiled in cooking; but if ham is spoiled by too much salt, or too little, or becomes tainted before the salt has thoroughly penetrated through it, I defy any cook to make a good dish out of it. I have tried many ways in curing hams, and have lost them sometimes by having them become rancid and tainted in warm weather, and also by having them so salt and hard that they were unpalatable.

I have for some twenty years practised the following simple recipe in curing pork hams and shoulders, and find it preferable to any recipe I ever tried, and when I have had any to sell they have taken the preference of sugar cured hams with those acquainted with them.

I trim the hams and shoulders in the usual way, except I cut the leg off close up to the ham and shoulder, to have them pack close, as being worthless smoked; then sprinkle a little fine salt on the bottom of a sweet cask, and pack down the hams and shoulders promiscuously, as they will best pack in, and sprinkle a little fine salt on each laying, just enough to make it show white; then heat a kettle of water and put in salt, and stir well until it will bear up a good-sized potato, between the size of a quarter and a half dollar; boil and skim the brine, and pour it on the hams boiling hot, and cover them all over one or two inches deep with the brine, having put a stone on the meat to keep it down. I sometimes use saltpetre, and sometimes do not; consider it useless, except to color the meat. I now use my judgment as to the time to take them out of the brine. If the hams are small, they will cure in three

weeks, if large, say five weeks; again, if the meat is packed loose, it will take more brine to cover it, consequently more salt will penetrate the meat in a given time than if it is packed close; on this account it is useless to weigh the meat and salt for the brine, as the meat must be kept covered with the brine, let it take more or less. Leave the casks uncovered until cool. When the hams have been in brine long enough, I take them out and leave them in the collar if the weather is not suitable to smoke them. I consider clean corn cobs better for smoking meat than anything I have ever tried, and now use nothing else; continue the smoke until it penetrates the meat, or the skin becomes a dark cherry brown. I then wrap the pieces I wish to keep in paper, any time before the flies or bugs have deposited their eggs on them, and pack them down in casks with dry ashes, in the collar, both hams and shoulders will keep as good as when packed through the summer or year. Cured in this way, it is hard to distinguish between the shoulder and ham when boiled.

A large ham will often taint in the middle before salt or brine will penetrate through.

HOW TO CURE SIDE PORK.

So much for smoked meat; now if any one wishes to have his side pork a little better, and keep better than any he has ever had, let him try my way, and if he is not satisfied, let me know it through the *Ohio Farmer*.

Take out the bone and lean meat along the back, cut and pack the pieces snugly in the barrel, put more salt on the bottom and on each laying of meat than will probably penetrate the meat; then boil and skim the brine (if it is sweet,) and add enough to it to cover your meat two or three inches over the top, made strong like the ham brine; and as soon as you pack your meat, pour the brine on boiling hot; it will penetrate the meat much quicker than cold brine, and give it an improved flavor.

While I was making and pouring the brine on my hams and pork just now packed, I thought the public might be benefitted by a knowledge of my way of curing meats. I therefore publish it. Try it.

HEAVY IRON WORK.

The crank shaft about being forged at Bridgewater, Mass., for the Italian frigate, to weigh over 40,000 pounds, though exceeding in length previous forging of this character, is not the heaviest ever successfully made. The center shaft of the steamships *Illinois* and *Golden Gate* forged in New York city in 1851, each exceeded it, one of those weighing in the rough a little over 54,000 pounds.

Crank-shafts are forged much heavier than they are finally finished. They are found to be strongest and cheapest when hammered in a solid mass or lump, not crooked, and the shaping done by cutting away the iron cold. The cranks of most of our iron-clads and other double-engined propellers are produced in this way. The American forges make the heaviest work and form the strongest material in the world.—*Exchange*.

