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VOL. II.

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HALIFAX, 12th Sept., 1872.

In March last the Board of Agriculture appointed a Committee, consisting of Jos. Northup, Esq., President, George S. Brown, Esq., of Yarmouth, and Professor Dawson, to make purchases of thoroughbred Stock this autumn. In course of a few days these gentlemen will proceed on their mission. They intend to be present at the Massachusetts State Fair at Framingham on 19th instant, and thereafter to visit some of the principal breeders of Ayrshire and Devon Stock in the New England States. They then proceed to Hamilton, Ont., where the great Annual Exhibition is to be held this year on 23rd Sept. and following days. The New York State Fair at Elmira will be visited during the next week of October. Opportunities will thus be afforded of seeing a very large number of the best animals owned in the United States and Canada, and of making advantageous purchases. The Committee are desirous, if possible, to bring this season, a selection of animals superior to any that have ever been brought

before into the Province. The importation will consist of about 8 Durham Bulls and 2 Heifers, 6 Devon Bulls and 2 Heifers, 6 Ayrshire Bulls and 2 Heifers, 10 Leicester Rams and 2 Ewes, 5 Shropshire Rams and 2 Ewes, 5 Cotswold Rams and 2 Ewes.

The animals will be sold at Halifax, by auction, between the middle and end of October. Due notice of the day fixed will be given in the newspapers; but we hope distant Societies will at once make their arrangements and commission some one in the city to make their purchases, or else send one of their members for that purpose. After the Stock arrives there will be no time to get up subscription lists, collect money and discuss resolutions.

A discount of 10 per cent. will be allowed to purchasers from Cape Breton, and of 5 per cent. to other purchasers who reside at a distance of not less than 30 miles from a Railway Station.

The Committee have also been instructed to obtain information respecting

improved Farming Implements, and the results of their enquiries will be made known at the October meeting of the Board.

THE ONTARIO EXHIBITION.

Through the kindness of Hugh C. Thomson, Esq., Secretary of the Agricultural and Arts Association of Ontario, we have received the Prize List of the forthcoming Exhibition at Hamilton, from which we extract the general Programme of Arrangements:—

1. MONDAY, September 23rd, will be devoted to the final receiving of articles for exhibition, and their proper arrangement. Officers and members of the Association, judges, exhibitors, delegates, members of the press, and necessary attendants, will be admitted on presenting the proper credentials, badge, or ticket of admission. Other persons will be admitted on payment of 25 cents each time. The rules for admission will be the same throughout the exhibition.

2. TUESDAY, 24th.—The judges in all the classes will meet in their respective Committee Rooms at 10 A. M., and will make arrangements to commence their duties. On receiving the class books,

they will also be furnished with the blank prize tickets, which they shall fill up and affix in each section so soon as they shall have finally determined their awards. The First Prize Tickets will be Red; the Second, Blue; the Third, Yellow; the Fourth, White; Extra, Green; the "Highly commended" and "Commended" Tickets, White. On completing the class, the judges will report to the Secretary. The main exhibition building will be closed all this day, for the purpose of affording the judges an opportunity of discharging their duties properly. Non-members admitted to the grounds on payment of 25 cents each time. The Annual Meeting of the Fruit Growers' Association will take place at the Court House, at 7 P. M.

3. WEDNESDAY, 25th.—The judges of the various classes will complete their awards as early in the day as possible. All the buildings and grounds will be open to visitors. Admission the same as on Monday and Tuesday. The Annual Meeting of the Mechanics' Institute Association will take place at the Court House this evening at 7 o'clock.

4. THURSDAY, 26th.—Admission, 25 cents. The Prize Animals will be exhibited in the ring at 2 P. M. The Annual Meeting of the Directors of the Provincial Agricultural Association, for the purpose of electing auditors, deciding upon the place of holding the next exhibition, and other business, will take place at 7 P. M., at the Court House, Hamilton.

The President will deliver his address at the Annual Meeting.

5. FRIDAY, 27th. Admission the same as on previous days, till 2 P. M. At 2 P. M., the exhibition will be considered officially closed, after which no one will be admitted into the Crystal Palace, and exhibitors may commence to take away their property.

6. SATURDAY, 30th.—The Treasurer will commence paying the premiums at 9 A. M. Exhibitors will remove all their property from the grounds and buildings. The gates will be kept closed as long as necessary; and none will be admitted except those who can show that they have business to attend to.

A Catalogue of all the Entries of Animals and Implements will be prepared, and will be on sale at the Grounds. Price Ten Cents.

GRAND PROVINCIAL PLOUGHING MATCHES.

Notice is hereby given that it is the intention of the Council of the Agricultural and Arts Association of Ontario, to hold two Grand Provincial Ploughing Matches, this Autumn, on such days as may be hereafter decided upon; subsequent to the date of the Provincial Exhibition; one in the eastern and one in the western section of the Province.

The sum of Four Hundred Dollars will be offered in Prizes by the Association in each locality that may be selected. Implement manufacturers and others are invited to offer supplementary special prizes, if they desire to do so.

Tenders will be received up to 1st September, of fields, of not less than 30 acres of land, for each match, the eastern to be within 20 miles of Belville, or between Belville and Kingston, and the western within 20 miles of London, if practicable. Full particulars as to Prizes, &c., will be published in due time.

HUGH C. THOMSON,
Sec'y Agri. and Arts Asso.

GARDEN HINTS FOR THE SEASON

(From the Gardeners Monthly.)

FLOWER GARDEN AND PLEASURE GROUND.

It has been for many ages customary with many minds to associate excessive heat with the eternal sum of all evils, and to judge by the chosen few who fly from the wrath to come; in every closely built city, from the sweltering heats of August to the cool sea side breezes, or to shady retreats in country places, there is no doubt this terrible city heat is a great trial, and may fairly be considered as one of the great recruiting agents in the constantly increasing army of lovers of country life.

But this heat which gives so powerful an impulse to country preferences, should teach the professional Horticulturist also its lesson; and that is, in laying out and designing country places, one of the chief studies should be how to make a place agreeable even in the hottest weather.

Not near enough attention is given to this matter even by many experienced men. Large plats of hard dry shadeless gravel, walks, and struggling flower beds, make up the gardening of by far too many places, the continued effort to keep which in order without much compensating advantage, makes many soon tire of what is thus miscalled "Pleasure" Gardening.

Gardeners often express wonder that so and so with "plenty of money" takes no interest in keeping his grounds nice. Only a deep-seated love of country life, battling against discouragements, can keep so many in the good path that we find in it; and this, not because there is no enjoyment in country life, but because few study out properly the means to effect the good ends. We imitate too much the European styles of gardening, forgetting that our peculiar circumstances require peculiar treatment.

In all suggestions for the improvement of grounds, the subsequent cost of keeping in order should be studied well. This is the rock whereon so many strike. Walks

and roads are particularly expensive to maintain, and should never be made unless there is an evident necessity for them. Shady grass walks, with masses of flowering shrubs on each side, and kept mown a few times a year, are as pleasurable parts of a pleasure ground as can well be provided, yet we very seldom see them employed.

Rustic arbors, as they are usually made, are very mean things for summer comfort. They are too close and hot. They suit European climates better. They should be open all round.

The best arbors, however, are made by the weeping ash, grafted high, and spread out well, but not allowed to have their branches hang too low down. A circulation of air all round is essential to the comfort of an arbor.

So many fall in love with the country, and about this time make up their minds to permanently reside, that these general suggestions may have some value. We will now give some more particular directions for garden work, which may help those who have already commenced.

In preparing the grounds, it should be remembered that grass and trees are not only required to grow therein, but that they must grow well. The top soil of the lot is often covered by the soil from the excavations, trusting to heavy manuring to promote fertility. But this is a too slow and expensive process. The top surface soil should, in all cases, be saved, and replaced over the baser soil. Also, where it is necessary to lower a piece of ground, the top soil should be saved to place over again. The depth of the soil is an important matter, both for the trees and the lawn. It should be at least eighteen inches deep. In shallow soils, grass will burn out under a few days of hot sun. In a soil eighteen inches deep a lawn will be green in the driest weather. For the sake of the trees, also, the ground should be not only deep, but rich. If from thirty to forty loads of stable manure to the acre could be appropriated, it would be money well spent. Life is too short for it to be an object to wait too long for trees to grow, and planting large ones is an expensive, as well as unsatisfactory business. A tree in a rich and deep soil will grow as much in one year as in five in a poor one. So in preparing a lawn, it is fortunate that, while aiming at the best effects, we are helping our trees also. It is generally better to sow for a lawn than to sod, where much of it has to be done. The edges of the road must, of course, be sodded, the balance neatly raked over and sown. The best kind of grass to be employed in seeding is a disputed point, and it will, no doubt, depend in a great measure on the locality. In Philadelphia and northward, the perennial rye grass is excellent. It commences to grow very early, and

has a peculiar lively, shining green. South of Philadelphia it is very liable to get burned out in summer, and the Kentucky blue grass would be much better. It is much the best to have but one kind of grass for a lawn, provided it is suited to the locality. A mixture of kinds is apt to give a spotted and variegated character, not at all pleasing. Some people like to see white clover growing thickly in a lawn, and others object to any thing but green. However, if a good grass rake is employed freely in summer time, the heads of these flowers may be kept from expanding. Where there is a prospect of a month of growing weather, lawns may still be sown with grass seed,—the clover, where used, to be kept till April or March next. A small quantity of rye should be thinly sown with the grass, which, by the shade it affords, will prevent the grass from being thrown out by frost. The rye must of course be closely cut in the spring, to allow the grass to get ahead of it.

It is somewhat remarkable, that with the great love of cool shady spots which our climate excites in all of us, more attention is not given to making towers of living trees than is customary for us to do. We have "summer houses" in abundance, but these are seldom cool. If they are roofed, the heat radiated from the under surface makes it very hot, unless the sides are open all around; and if the sides are thus open, the sun at all hours, except mid-day, trespasses on our enjoyment. Besides this, as a matter of taste, summer houses, as we generally see them, are sadly out of character in relation to their surrounding. In some of our best parks, where there is indeed a great deal more than mere pretension to landscape gardening, the "summer houses," as they are called, too often mar the effect of the whole thing.

The green mass is in keeping with other trees, and the crowding necessary to accomplish the desired shade, can often be turned to the very best account. This is especially the case when weeping trees are employed. The peculiar drooping habit comes into play in numerous ways in the hands of a good landscape gardener. Of the fast growing things of this kind, and where the position is not particularly choice, there are few things more useful than the *Weeping Willow*. For more select places we suppose there is nothing better than the *Weeping Ash*. Indeed, taken all in all, it is one of the best trees of this kind we have. The branches can be trained over wires, and thus we can make the room beneath the tree as extensive as one could wish. For very large spots, a half dozen or so can be used. Set in one circle, and the trees about twenty feet apart. Such an arrangement would make a delightful croquet ground,—or a place for parties or

picnics—entirely in the shade, yet with an abundance of room and air all round. The *Kilmarnock Weeping Willow*, if grafted high enough, would make a very pretty shade for one or two persons; but as they generally are, they are not worked over five or six feet high; and thus we have to be satisfied with them as the lovely little ornaments we see on our lawns.

Recently we saw a very pretty thing formed out of half a dozen *Japan Catalpa*—*Catalpa Kœmpferi*. These seem to grow only from fifteen to twenty feet high, and the branches form a dense mass overhead, appearing in leaf as if the whole surface had been closely sheared. When not too closely confined, the whole stem pushes out leafy branches. A half a dozen of these set out by themselves, and trained up to single stems, will make one uniform mass of foliage if left to itself; and gothic arches, or arches of any other form, can be cut between each pair of trees. The leaves around each tree stem can be left two or three feet wide if desired;—and the whole can be made to have a remarkably unique effect.

The planting season will soon come around, and now is the time to look about and select the desirable kinds, and to decide on the proper places to set them.

It may be well to repeat what we have said in substance before, that the latter end of August is one of the best seasons of the year to transplant evergreens. The young growth of the past season has got pretty well hardened, so as to permit of but very little evaporation,—and the earth being warm, new roots push with great rapidity, and the tree becomes established in the ground before cool autumn winds begin. The chief difficulty is that the soil is usually very dry, which prevents much speed with the operation; and the weather being usually very warm, the trees have to be set again in the ground almost as fast as they are taken up; so that it is not safe to bring them from a distance. It is as well, therefore, to make all ready in anticipation of a rain, when no time may be lost in having the work pushed through. Should a spell of dry weather ensue—which in September and October is very likely—one good watering should be given, sufficient to soak well through the soil and well about the roots. A basin should be made to keep the water from running away from the spot, and to assist its soaking in. After being well watered, the loose soil should be drawn in lightly over the watered soil, which will then aid in preventing the water from drying out soon again.

As soon in the fall as bulbs can be obtained, they should be planted—though this will not generally be the case till October,—but it is as well to bear in

mind that the earlier they are planted, the finer they will flower.

Towards the end of the month, and in September, evergreen hedges should receive their last pruning till the next summer. Last spring, and in the summer, when a strong growth required it, the hedge has been severely pruned towards the apex of the wedge-like form in which it has been trained, and the base has been suffered to grow any way it pleases. Now that, in turn, has come under the shears, so far as to get it into regular shape and form. It will not be forgotten that to be very successful with evergreen hedges, they ought to have a growth at the base of at least four feet in diameter.

When White Lillies, or any other spring-flowered bulbous plants have done flowering, and the stems died away, they should be taken up and re-set; the disease in Lillies often meet with, is probably caused by their being too long in one place.

Most of what is to be done now in this department consists of the routine duties of neatness,—tying up, pegging down, removing faded blossoms, collecting and destroying insects, etc.

Many suffer their flowers to produce seed, but this injures the flowering. If it be particularly desirable to save seed of some things, allow only just as much to ripen as will be needed. In some cases, cutting off the flowers as fast as they fade doubles the season of flowering.

Auriculas, Polyanthus, Pansies, Daisies and other of these early flowering, half hardy plants, commence their root growth about the end of this month, when the time has arrived for replanting. Good fresh, and yet half decayed, sod from a pasture field, is the best to grow them in. Those who have the advantage of pots and frames, can re-pot also at this season.

FRUIT GARDEN.

Another and most bountiful year is highly encouraging to the fruit grower. He must now take care that exhaustion does not follow. The wise orchardist has thinned his fruit at an early stage of growth, and will now be looking round for material to fertilize them with. It is not too late to do it yet to advantage. We should surface-dress with manure, compost, or rich materials, any time between now and frost; but the earlier the better. There is not much use in putting it on after the soil is frozen. Rains wash its best portions away. As to kind of manure, it makes little difference. If the surface is not disturbed much, the richer the surface soil the better. We have noticed but little difference between animal manure and mineral. Some of the best and healthiest trees we know, stand near the manure heaps in farm yards.

A little trimming is useful to most trees at this season. The Blackberry

and Raspberry may have their tops shortened so as to leave the canes about four feet. Some do this earlier in the season; but the buds are apt to burst if done too soon. In like manner, pear and apple trees that grow well, but produce no fruit, are benefited by having, say half of some of the young growth cut back. The buds then left are very likely to form flower buds, in place of growth buds for next season. Many take out the old shoots of raspberry and blackberry after they have done bearing, and we have in times past recommended it ourselves; but on further observation, we see very little good, if not positive injury. The partial shade the old stems make, seems rather beneficial than otherwise under our hot suns.

VEGETABLE GARDEN.

As soon as your vegetable crops are past kitchen use, clear them out. Never suffer them to seed. In the first place, a seed crop exhausts the soil more than two crops taken off in an edible condition; in the next place, the refuse of the kitchen is likely to produce degenerate stocks. Good seed saving is a special art by itself, always claiming the earliest and best to ensure a perfect stock.

Celery will require earthing up as it grows, to get it to blanch well. It is not well, however, to commence too early, as earthing up tends, in a slight degree, to weaken the growth of plants. Take care, also, not to let the soil get into the heart in earthing, or the crown is apt to rot.

As fast as Endive is desired for salad, it should be blanched. Matting thrown over is the best for this purpose, as the plants are not so liable to rot as when pots or boards are employed.

In cold or mountainous regions, Melons are hastened in the ripening process, and improved in flavor, by a piece of tile being placed under the fruit.

Keep weeds from your compost heaps, as they exhaust the soil, and bear seeds for future brow-sweatings.

BEET-ROOT SUGAR.

On several occasions we have called the attention of our readers to the efforts being made in Europe to extend the production of Beet-Root Sugar. The following article, which we extract from the *Canada Farmer* proves a useful *resumé* of much that has already been published:—

If appearances are not deceptive, the production of beet sugar seems destined to be one of the important industries of the future, both in America and Britain. In the former country Professor Goessman, and in the latter Mr. Crookes, have

recently endeavoured to show that it is quite possible to grow sugar-beets with profit, and the evidence, though still scanty, seems amply to bear out this assertion. During the year 1867 beet-root sugar to the value of one million six hundred thousand pounds sterling was imported into Britain, and there seems to be no reason why this large demand should not have been supplied from home sources. It is by no means requisite for the successful prosecution of this branch of agriculture to grow monster roots. On the contrary, the weight of each root should not be more than two pounds, because the larger roots are watery and poor in sugar; nor should the roots fall short of one and a quarter pounds in weight, as the smaller examples are frequently woody. The juice should have a specific gravity of from 1.060 to 1.070, though sometimes, when very rich in sugar, it rises to as much as 1.078. The percentage of sugar in the roots varies considerably, the minimum quantity being 3.62, whilst the maximum is 18.47. The next number below this maximum is 18.19, and is of interest as representing the amount of sugar found in red beet manured with London sewage. Feligot obtained as much as 18 per cent. from some French beets, and some American spicemens have produced nearly the same percentage—an amount, therefore, considerably ahead of the best English samples. In Ireland from sixteen to forty tons of roots may be grown to the acre, so that very satisfactory results might be anticipated in that country. On the experimental farm of the Massachusetts Agricultural College, on the other hand, the amount of roots raised per acre fell short of twelve tons; but there were special disadvantages and difficulties to be allowed for in this case. Calculating from the average yield of a five-hundred acre farm, it is estimated that the producer should possess machinery capable of working up one hundred and fifty thousand pounds of beet-root every twenty-four hours for five months. Such a factory would require nearly a thousand cubic feet of water per hour, and the first outlay for its establishment is calculated at something over fifty thousand dollars. The profits are calculated at nearly twenty-five per cent on the outlay, with six and a-half per cent of sugar increasing the profit seven and a-half per cent—so that if eight per cent of sugar could be obtained the profit upon the original outlay would not be less than forty-eight per cent. By the concreting process of Mr. Fryer, as applied to the raw juice, the refinery can now be carried on during the whole year, instead of only during crop-time; and the spent beet-root pulp left after the extraction of the sugar would appear to be a valuable food for stock. Indeed so far as chemical analysis goes, this pulp, when mixed with other materials, should prove

a more useful food for cattle than ordinary mangolds; but this point can only be properly established by a series of properly conducted comparative experiments on feeding. As regards the United States, it has been argued that the cultivation of beet sugar can never prosper, since the difference in the price of American and European labour renders hopeless all competition with foreign producers. This argument is vigorously met by Professor Goessman, who remarks as follows:—

“Although duly recognizing the great weight of this point, for which the farmer rests the success of the enterprise in the end, I believe that its influence as an obstacle is frequently overrated and based upon somewhat obsolete assumptions. The government tax of from \$40 to \$50 per acre on sugar beets in Germany and France, as well as our higher prices of sugar, will go towards covering our more expensive labour. The interests of the Louisiana sugar planters and the sugar beet cultivators of more northern sections of the country are the same, as far as a proper protection of their industry is concerned; and the public opinion, in view of the requirements of the governments, is apparently prepared to accord to them, for some time at least, this advantage. Great improvements in agricultural implements and in modes of securing the juice have reduced labor by hand to a considerable extent. A short enumeration of the most conspicuous instances may place this statement in its proper light. Various seeding machines, improvements more or less on Garrett's famous seed drill, are used in planting the seed, in four or more rows at once, and at any desired distances from twelve to twenty inches apart. According to the size of the machine, one or two men, with one or two horses or oxen, may seed from eight to sixteen acres per day; the same implement can also be modified by replacing the seed boxes with suitable knives to be used as cultivators, to clean the space between the rows of plants, and to cover the roots. Ploughs with two knives are used to break up the soil on both sides of the rows of beets, to loosen the soil in such a manner, without lacerating them, that children may do the harvesting of the roots. In fact, the whole work in the field, after the soil is once properly broken up, calls for no extraordinary labour. A good deal of the work can be done by boys. Machines do the washing, the grinding or cutting and general handling of the roots to the centrifugal apparatus. The task of handling the pulp of beet roots for the press requires, comparatively speaking, a large supply of hands to do the business connected with that process, but Robert's diffusion method dispenses with a large number of the hands formerly required in the press room—nearly one half.”

BET SUGAR SUPPLEMENT.

COST AND EXPENSES OF LABOUR, AND GENERAL ESTIMATES OF ONE OF THE GREAT BEET SUGAR FACTORIES OF EUROPE.—This is copied from Crocky's work on Beet Sugar, which is the best and most reliable work yet published in English. The reader will see that the allowances for Wages and Salaries are most liberal.

The Factories work day and night, and the wages are reckoned at four shillings sterling *per shift* of 12 hours, which for the old country is very high. The amount of Beet roots worked up in this Factory is twenty thousand tons in a season. The following is Mr. Crocky's language and figures:—"With perhaps the exception of two or three men, no skilled labourers are required in New Beet Sugar Works, as most of the operations are of a simple mechanical nature, easily taught to inexperienced country hands by a competent superintendent and his overseers.

The only skilled hands really needed are, an Engineer, an hydraulic pump man, a defecater, a sugar boiler, and a bone black burner. Of these the defecater and sugar boiler should have already had some experience in a Beet Root Sugar Factory."

We have added as a separate item, the necessary additions to be made for the extra salaries to be paid to specialists in the various departments.

The calculation is based on a campaign of 100 working days.

WASHING AND PULPING.	
Transportation and washing of the Beets at 4s.	2800 sterling.
14 men 2 shifts per 24 hours, 2800 days labour at 4s.	£560 0 0
PRESS DEPARTMENT.	
23 men 2 shifts per 24 hours—5,600 days at 4s.	£1120 0 0
Sack washing and draining, 8 women 2 shifts, 1,600 days at 4s.	320 0 0
DEFECACTION.	
8 men per 24 hours—equal to 800 days labour at 4s.	160 0 0
SCUMS.	
6 Men for 24 hours, 600 days at 4s.	£140 0 0
CARBONATION.	
250 days at 4s.	50 0 0
Monte jus, (that is steam pump men) ...	40 0 0
Preparation of Carbonic Acid, (i. e. from the Charcoal)	40 0 0
FILTRATION.	
3 Men every 24 hours, at 4s.	60 0 0
CONCENTRATION.	
2 Men every 24 hours, at 4s.	80 0 0
BOILING.	
2 Men every 24 hours.	80 0 0
CRYSTALLIZATION AND CENTRIFUGALS.	
1,500 days' labour.	300 0 0
GENERATION OF STEAM.	
2 shifts of 3 men, 600 days, at 4s.	120 0 0
BREAKING AND PACKING.	
5 Men at 4s.	100 0 0
MEN IN THE YARDS, ETC.	
5 Men at 4s.	100 0 0
MANAGEMENT.	
1 General Superintendent and two overseers.	300 0 0
Book-keeper and Clerk.	320 0 0

EXTRAS.	
Carpenter, Plumber, Smith, 3 men.	300 0 0
Extra pay skilled labourers.	600 0 0
General total cost of labour for one year's Campaign.	
	£5,190 0 0
The quantity of coal consumed in such an establishment as we have described, would average 600 tons, which, at 15s. per ton, would cost.	
	450 0 0
The bone black, 30,000 lbs., would cost for the first outlay 2½d. per lb., £812 0s. 9d., but in succeeding years would only amount to replacing the waste.	
The lime used would amount to 4,500 bushels, and £980 0s. 0d.	
The cost 15,000,000 lbs. of Beet root to be worked up into Sugar would at 12s. per ton be.	
	£4,500 0 0
ANNUAL EXPENSES.	

Summing up the above we calculate that the yearly expenses will amount to :

Labour.	£5,190 0 0
Coal.	450 0 0
Boneblack Waste.	100 0 0
Lime.	230 0 0
Purchase of beet roots.	4,500 0 0
Add 20 per cent. for incidental.	2,100 0 8

We have a total of. £12,620 0 0

To which has to be added Taxes and Insurance, which we have computed at. 400 0 0

Interest on capital invested. 960 0 0

Making a Grand Total of. £13,980 0 0

The total cost of erecting the works for the above factory, is given at. £13,157 0 0

This factory is fitted for the manufacture of Sugar from Beet roots, for the produce grown on 500 acres of ground, which ought to produce at least 1,200,000. One million two hundred thousand pounds of raw Sugar.

REALIZATION.
The products to be realized in our example of a Sugar Manufactory would be as follows:—

Sugar from 15,000,000 lbs. of Beets at 8 per cent of Sugar,—the Sugar being sold at 24s. per cwt. (of 112 lbs.)	£14,400 0 0
2,700,000 lbs. pulp calculated at ½d. per lb.	5,620 0 0
5,000 gallons of molasses at 40° Baume at 1s. per gallon.	250 0 0
Residues as fertilizers.	200 0 0
	£20,470 0 0

Deducting annual expenses and interest as above. 13,980 0 0

Leaves a net annual profit of. £6,490 0 0

There is every reason to believe that with careful management the quantity of sugar will range as high as 10 per cent, instead of 8 per cent, which we have taken as our basis.

In such a case the net income would be £24,470. 0. 0.; and the net annual profit £10,090. 0. 0.

Other authors make their calculations on an entirely different basis,—and arrive at results equally favourable, though somewhat in detail.

That the above is not too sanguine a view to take of the probable yield is shown by the fact that during the season of 1868—1869 in the Zellvereign, 2,500,000 tons of beet root produced 207,500 tons of sugar, a return of 8.40 per cent.

The foregoing quotations speak no doubt of land in the highest state of fertility, and which has been manured for years in the most scientific manner, and also, there is no doubt, of land which has been specially selected for the purpose, and which by repeated crops of Beet root very well manured with the refuse, and the results of the cattle fattened, has been brought into the most favourable state possible for the crop.

One of the most remarkable features of the growth of the sugar beet industry is, the constantly increasing crop and yield per acre which the proper culture of that crop produces, not only in the amount of roots grown per acre, and their richness in sugar, but also in the constant increase of other crops particularly wheat throughout the district.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

The annual meeting of this flourishing and influential Society was held at Kelso under very favourable auspices. The weather, which had been somewhat threatening, gradually improved, and the stock and implements were all placed on the ground in excellent condition.

The original type of Shorthorn was found in the valley of the Tees, but their good qualities were much developed by the Messrs. Colling, whose cattle were specially remarkable for their rapid and large growth, combined with aptness to fatten, symmetry, good temper, mellow handling, and gay colors. They have gradually acquired a world-wide celebrity, and have in a large manner displaced the Hereford and other breeds, once unrivalled south of the Tweed. To keep the breed of the Durham, Teeswater, or short-horned breed pure is an object of great importance, and at the Highland and Agricultural Society the first prizes are always given to bulls and cows of this stock.

There were 16 bulls shown in the aged class, and among them were three that had been conspicuous at the Cardiff Show of the Royal Agricultural Society.

In the class of aged cows there were ten animal shown, all of good quality, and the 1st prize was taken by the Duke of Buccleuch; the 2nd and 3rd going to Northumberland. For 2-year-old heifers the Duke of Buccleuch was again 1st; Mr. John C. Toppin, Musgrave Hall, Penrith, 2nd; after which came the Marquis of Tweeddale and Lord Kinnaird. For year-old heifers the Duke of Buccleuch again stood foremost of 16 competitors, and this whole class of stock looks very promising.

Polled Angus, or Aberdeen cattle, are not reared in the district where the show was held; and the show was not very large, but the quality was unexceptionable. The exhibitors were all, or nearly all, from the north of Scotland. The 1st premium, for bulls of any age, was carried off by Sir Thomas Gladstone, of Fasque, and this award was universally approved. There were seven 2-year-old bulls and eight year-olds. A couple of 2-year-olds belonged to Mr. McCombie, M. F., both of which were commended. For cows of any age Mr. McCombie carried off the 1st premium, with a beautiful cow, *Chamer*, aged five years

and five months. Sir George McPherson Grant, of Ballindallock, took the 2nd and 3rd prizes, and another of his animals was commended. In 2-year-old heifers there were also some excellent beasts. Of ten year-old heifers Mr. McCombe showed three, one of which took the first prize, and another was commended.

Of Galloway cattle there was only a modicum show, but among the exhibitors were most of the well-known breeders of that class. Prominent among the prize-takers was the Duke of Buccleuch, whose Drumlanrig estates are suitable for this class.

Ayshires were numerous and of fair quality. For the best bull, Sir Michael Shaw Stewart carried off the prize. In the second class, the Duke of Buccleuch came in for the second premium.

There was also a good representation of Highland cattle, which have a grand appearance on their native hills, but seem out of place in a showyard. Some animals of great size were exhibited as extra stock.

The show of horses was good, and of Clydesdales in particular there was a splendid show. Mr. David Riddell, Kilbowie, Duntocher, Dumfriesshire, was the most successful exhibitor, and in the first class showed a noble animal, "Prince of Wales," which has on all occasions distanced all competitors. It is a magnificent horse, and has splendid action. It is a brown horse, six years old, bred by Mr. Fleming, Knockdon, Maybole.

MANURES.

We find in the *Truro Sun* of the 8th of August, a suggestive and useful article on the subject of Manures, from the hand of a gentleman who writes under the name of "Cloverdale." His communication is specially intended for the farmers of Colchester, but contains so much common sense in addition to its special suggestions, that we have no doubt many of our readers in other Counties will be glad to peruse it:—

In previous articles I have endeavored to draw the attention of your readers to the quality of the soil in this part of the Province, and to the necessity and method of thorough drainage. I hope they will at this time accompany me in an examination into the nature of ordinary farm manures. I wish to point out to them, that by the most certain laws of nature, our best manures are liable to wholesale waste, and are continually wasted, through undue access of air and water; and that these, although chief agents in producing vegetation, become, to the neglectful farmer, subtle and unscrupulous thieves, that hourly bear away his property into the ambient atmosphere, or by drain, brook, and river, to the hungry ocean.

A book might very well be written to our farmers, about their manures; I, however, intend writing only an article or two on the subject for this paper. I shall not trouble the farmers with many statements about making manures—only about saving what they do make. Nor shall I ask them to read tabular lists of

chemical constituents, or bother them with the abstractions of science, or ask them to do what they cannot do, or to do any more than they now do, or to understand any difficult thing, or, above all, lay out any money.

When our forefathers came to this country they found the dykes and marshes pretty much as the French had left them. By a very short inference they found that the intervals, if cleared, would yield grass; and many strips of what they called meadow through the country also yielded grass supposed to be proper food for cattle. Then, by squatting about in such districts as these, they cut what grass naturally grew, fed their cattle in such shape as generally enabled them to exist, and, with such a residuum of manure as they found behind their barns in the spring of the year, they raised crop enough to exist in a homely and primitive manner. Some of them went a fishing.

The uplands during this time have been worked about as well as the people knew how to work them. The Highlanders cultivated these lands after their manner, the Dutch after theirs. And perhaps the Nova Scotia people at present know as much about farming as they did in Europe fifty years ago.

But within a century the science of chemistry has grown from infancy to its present stature. Within fifty years it has been applied to farming generally throughout some parts of Western Europe and some parts of America. But in Nova Scotia people do not yet much understand scientific farming. With the most of them upland is still upland in its originally wet and uncultivated state; the farmers still struggle to exist on the old water-grass farms of fifty or a hundred years ago; and they still endeavor to raise crops with the manure as they find it behind their barns in the spring of the year.

Young, Dawson, and others, have written on the subject of manures, but to little purpose. Our farmers are pretty well up in the importation and exchange of seeds and breeds. They have done creditably in fruit. They are A 1 in politics. But they don't save their manures.

Natural manures, as they are produced on the farm, are very perishable. Our business is to arrest them, that is to arrest them from perishing. To perish means that they become transformed into something else, or they are carried off not wholly changed. Further, our business is not to allow them to lie in stagnation, as some parts of them will do under certain circumstances.

Our natural barn and house manure we find in two forms—the solid and the liquid. The solid manure loses only a minor proportion by sun, air and water in the course of a single season, if retained in a heap. The liquid manure is destroyed very quickly and almost wholly, if unprotected from

the elements here mentioned, and the most valuable part of the manure is the liquid. In order, then, to save, preserve, retain, or arrest the liquid manure, we must have some means of either enclosing or absorbing it, and getting it mixed with the soil with as little loss as possible. It must be understood here, however, that the urine is to undergo certain chemical changes, requiring the presence of perhaps, sun, air, and water, which, if my opportunities of observation have been fully useful to me, will be provided for in a simple process of absorption that I shall describe.

In Britain, they have a method of collecting the urine in tanks under the stable, afterwards carrying out and mixing with a larger quantity of water, and applying it to the soil. An objection to such a method in this country would be the interference of frost. Again, the retaining vats would require to be very skillfully contrived, to ensure against loss by evaporation; for, where air comes in, water will evaporate, and take with it ammonia and carbonic acid, and other constituents, in the form of gas—in fact nearly all the valuable portion of the manure.

What I imagine now to be most necessary to present to the attention of the farmer, and which I think goes nearly all the way towards remedying the great loss of liquid manure, is the application of an absorbing medium. And in making this suggestion I know that I address principally the farmers of Colchester, whose circumstances are of this character that an absorbing material can be easily obtained by most of them, the most of them are in very bad need of the like, and a good absorbent would very completely answer their purpose.

The best absorbents I know of in this country are two—black swamp muck, and earth containing a large portion of clay. Having seen them both tried, I know them both to answer well, at least so far as I observed their operation. Some farmers have their buildings on sandy or gravelly ground, and have no convenient access either to clay or swamp muck. I should think they ought to try the British method, on some scale or other. I have been told that it is used to some extent in Nova Scotia, and very successfully.

When a farmer works mostly clay soil, some evidence leads to the belief that if he has the right kind of swamp muck convenient, he can make the best combination by its use. When dry, and placed as a receiver directly under all parts of the stable, or, as some are in the habit, used as bedding for the cattle, pigs and sheep, the capillary structure of it seems as it were to drink in the liquid, with all its richness; and the original muck is to a more or less extent itself a fertilizer, especially on clay ground. But I am not prepared to say that the muck is quite as

retentive as the clay, although I have seen this compost act very powerfully in fetching a crop of timothy and clover after first sowing down—better, in fact, than the first crop after clay compost.

I find that this present article has already grown too long. Before concluding I wish to impress upon the farmers this general rule: do not let your green manure touch ground. Let there be at least three feet of absorbent under the liquid portion. I have this summer seen two feet and a-half saturated completely to the bottom. In this instance the material was clay earth, but not a very stiff clay. Perhaps two and a-half or three feet of stiff clay earth, well dished on top, would save the most of a winter's urine, under a stable. Of the black mud I would put at least as much.

CROPS IN PICTOU.

The *Eastern Chronicle* says that "for some weeks past the weather has been broken and somewhat unfavorable for haymaking. However, the greater part of the hay throughout the country has been secured, although some of it has been considerably damaged by the rains. So far as we can learn the hay crop in this County falls below the average. The grain crops for most part look remarkably well, as do the root crops. We have not yet heard of the potato blight making its appearance. Very little grain has yet been cut, in fact, very little ripe grain, except in a few localities, is to be seen throughout the country. Clear, dry and warm weather is essential to the ripening of the grain crops. Tuesday was a dark day, threatening rain, and on Tuesday night about ten o'clock, heavy rain began to fall, and continued all day yesterday without intermission, thoroughly saturating the ground, and flooding the streams in all directions."

THE EARLY ROSE POTATO.

Here is an English opinion of the Early Rose Potato as a forcer, from a correspondent of the *London Gardeners' Chronicle*:—

For the information of Mr. Stevens (p. 974) and others, let me say that I think the Early Rose will not only be a good forcer, but it is my opinion that it will ultimately banish the old Ashleaf, now become so uncertain as a cropper, from cultivation. I have grown it these two years both from home-grown and imported American seed, and find it one of the finest earlies we have got, white and dry as flour. Last year was not a fair test of its quality, as nearly all our Potatoes were cut off on July 9, and the tubers never ripened for want of leaves; hence, what Mr. Stevens calls their "soggy" condition. I imported this season a quantity in barrels,

and on trial found them excellent. My present crop is also fine, and, as Mr. Stevens found with his, have turned out both white and dry, in fact, it is the whitest-fleshed Potato I know—and I have 20 sorts this season under trial, and during many years in which I have tried something over 200 sorts I have not found another so purely white and promising. I will, however, dissent a little from Mr. Stevens about cooking Potatoes "slowly;" for I find from long experience, that the faster a Potato is boiled the better, that is, boil fast till they are nearly cooked, pour off the water, and let them steam until fully ready, then take off the cover to let them dry, giving them a shake or two, so as to separate them a little; then if there is any goodness in your potato, it will show it. Your lady readers will owe me their smiles for the above recipe.

YARMOUTH COUNTY SOCIETY.

YARMOUTH, 17th Aug., 1872.

The season has been a most unfavorable one for agricultural prosperity, through which the Society will probably not show any advance for the year. A severe winter, with extreme steady cold and frequent heavy snow storms, almost from the 1st of November to the 1st of March, and then another winter on top of all this. No spring,—not half the usual crops got in; a wretched season for hay, seldom two fine days in succession; no fruit, although there seemed abundant bloom; insects destructive; club-foot unusually prevalent, destroying whole crops of cabbage, cauliflower and turnips. Per contra—we have had since June a greater average here than for the last few years, so that with no frequent rains vegetable growing has been wonderful, and crops of all kinds early and good. No appearance of potato blight yet, and the crop is nearly matured—Early Rose quite so, selling to-day at 75 cent per bushel. This is by far the most popular and most valuable variety in cultivation in this county, and we have experimented on varieties pretty thoroughly. It is extra early, enormously productive, good size and shape, and, in good soil, of excellent quality. If the county's Society had done nothing else since its organization than introduce this variety of potato, there would be a large balance to its credit to-day against all its expenditures.

CHARLES E. BROWN.

MINUTES OF YARMOUTH CO. AGRICULTURAL SOCIETY.

After long correspondence, and additional expense through the loss of the "Emperor," the two Alderney Bulls, "Tyler" and "Past Tyler," were shipped at Boston in the schr. "Minna," on Saturday, 1st June, and arrived on Monday,

3rd. in good condition and were placed in charge of Geo. S. Brown until Saturday, 8th, when, having been duly advertised in the *Herald*, they were offered at public auction, by Messrs. Wm. Law & Co., on the usual conditions:— "Purchaser to be a member of the County Society, and to give bond to keep for breeding purposes for three years."

"Past Tyler" was much admired, and considered without question by far the handsomest specimen of the breed we have yet had in the county, still there seemed no disposition to pay what might be considered a near approach to his value. His breeder assured us that there was no better blood in the United States, and that as breeders, for the market value of such animals, he was well worth \$300. He had cost, with expenses, about \$100, (bills not all received), and was bought by Charles E. Brown for \$42.50, with but little competition.

"Tyler," the one year old, sired by the same bull and a two year old imported heifer, less attractive in appearance, being small and apparently had not received as good care and feeding as the other, was bought by John Cann for \$29.

CHARLES E. BROWN.

8th June, 1872.

Secretary.

COLCHESTER COUNTY AGRICULTURAL EXHIBITION.

UNDER THE AUSPICES OF THE AGRICULTURAL SOCIETIES OF THE COUNTY, OPEN TO THE COMPETITION OF THE PROVINCE OF NOVA SCOTIA.

1. Exhibition to be held on Thursday, 26th September, or, if unfavorable, first following fine day, in and near the Drill Room at Truro.
2. Premiums to be awarded to competitors for articles of their own growth or production, or three months possession in case of stock, except animals imported for breeding purposes.
3. No person shall be allowed to enter for exhibition more than one specimen in any one section of a class, unless the additional article shall be of a distinct named variety or pattern from the first, this rule not to apply to animals, but to apply to all kinds of grain, seed, vegetable products, fruits, manufactured articles, &c., &c., in which additional specimens would necessarily be precisely similar to the first.
4. No person shall act as a judge in any section of a class in which he is an exhibitor.
5. No person will be allowed to interfere with the judges while in the discharge of their duties. Exhibitors so interfering will forfeit their right to any premium to which they might otherwise be entitled.
6. An entrance fee of ten cents will be taken at the Drill Room door from non-

exhibitors and non-subscribers to Exhibition Fund at 11 a. m., when the public will be admitted.

7. All entries of live stock must be made in writing, and handed to the Secretaries on or before the 15th day of September, and all other entries in writing not later than the 20th day of September, after which nothing will be entered.

8. All stock will be received on the day of exhibition from 7 till 10 o'clock, a. m., after which none can be received, except animals coming by trains, and draft, carriage and saddle horses, which will not be required before 1 o'clock, p.m.

9. No animal can take two prizes, and all stock and articles exhibited must be taken charge of by their owners, the Committee giving their assistance in providing the necessary accommodations and doing all in their power to ensure safety.

10. Stock, etc., cannot be removed from the grounds without the consent of the Managers under forfeiture of any prize awarded.

11. Entrance fee \$2, inclusive of any sums subscribed by competitors to exhibition funds.

12. The Committee reserve the right of withholding prizes in cases where there is no competition.

13. All cattle must be accompanied by a rope to fasten them securely, and no provision will be made for stock, etc., not entered for exhibition.

14. All bulls must be ringed and securely fastened, with keepers at hand.

15. All sums of money, etc., subscribed to exhibition prize fund, shall be paid the Treasurers of the exhibition not later than 1st day of September next.

WM. BLAIR, Chairman,
SAMUEL RETTIE,
ADAM DUNLAP,
WM. SUTHERLAND,
WM. N. DICKSON,
EC. BLANCHARD,
A. C. PAGE, M. D.
JOHN BLACK,
I. LONGWORTH.

Central
Exhibition
Committee

Israel Longworth and William N. Dickson. Secretaries and Treasurers of Exhibition.

LIST OF PREMIUMS.

	1st.	2nd.
Best Stallion of any age or breed	\$6 00	4 00
" Brood mares and colt	5 00	3 00
" Pair of team horses	5 00	5 00
" Single draft horse	3 00	2 00
" Pair of carriage horses—first prize a Silver Watch, given by W. H. Pollock, Esqr., worth	16 00	4 00
" Carriage horse not one of a pair, a gold chain, given by Caleb McCully, Esqr., worth	10 00	2 00
" Saddle horse	3 00	3 00
" Colt 3 years old	3 00	2 00
" Colt 3 years old	3 00	2 00
" Colt 1 year old	3 00	2 00
" Sucking Colt	2 00	1 00

THOROUGH BRED CATTLE.

	1st.	2nd.
Best Durham Bull 2 years old or upwards	3 00	2 00
" Durham Bull under 2 years	2 00	1 00
" Ayrshire Bull 2 years and upwards	3 00	2 00
" Ayrshire Bull under 2 years	2 00	1 00
" Devon Bull 2 years old and upwards	3 00	2 00
" Devon Bull under 2 years	2 00	1 00
" Durham Cow	3 00	2 00
" Ayrshire Cow	3 00	2 00
" Alderney Cow	3 00	2 00

GRADED CATTLE.

	1st.	2nd.
Best Bull 2 years old and upwards	\$3 00	2 00
" Bull under 2 years	3 00	2 00
" Bull calf	3 00	2 00
" Milch Cow	5 00	3 00
" " 3rd best	2 00	1 00
" Heifer, 2 years old	3 00	2 00
" " 1 year old	3 00	2 00
" Heifer calf	2 00	1 00
" Fat cow	5 00	4 00
" Pair fat oxen	12 00	8 00
" Single fat ox, not one of a pair	6 00	4 00
" Pair working oxen	6 00	4 00
" " 3 years old steers	6 00	4 00
" " 2 years old steers	5 00	3 00
" " 1 year old steers	4 00	3 00
" " Steer calves	4 00	3 00
" Steer calf	3 00	2 00

SHEEP.

	1st.	2nd.
Best Ram 2 years old and upwards	\$4 00	3 00
" " 1 year old	4 00	3 00
" " lamb	4 00	3 00
" Pen of 4 ewes, 2 years old and upwards	6 00	4 00
" Pen of 4 ewes, 1 year old	6 00	4 00
" " " ewe lambs	4 00	2 00

SWINE.

Pure Bred Chester White.

	1st.	2nd.
Best Boar of any age	\$3 00	2 00
" Spring pig	3 00	2 00
" Sow of any age	2 00	2 00
" Litter of sucking pigs	4 00	3 00
" Boar of any other breed	3 00	2 00
" Sow	3 00	2 00
" Spring pig of any other breed	4 00	3 00
" Fat hog of any breed	5 00	4 00
" Litter of sucking pigs of any other breed	4 00	3 00

FOWLS.

	1st.	2nd.
Best Coop of fowls of any improved breed	\$3 00	2 00
" Coop of fowls of any common breed	3 00	2 00
" Coop of chickens of any breed	3 00	2 00

GRAINS AND SEEDS.

	1st.	2nd.
Best Bushel Wheat	\$2 00	1 00
" " Chevallier, Annat or Hal-let's pedigree barley	2 00	1 00
" " Barley, any other kind	2 00	1 00
" " Surprise or Norway oats	2 00	1 00
" " Oats of any other kind	2 00	1 00
" " Peas	2 00	1 00
" " Beans	2 00	1 00
" Dozen ears corn	1 00	0 50
" Bushel timothy seed	2 00	1 00

ROOTS AND VEGETABLES.

	1st.	2nd.
Best Bushel early potatoes	2 00	1 00
" " table potatoes, late	2 00	1 00
" " Potatoes for stock	2 00	1 00
" Collection potatoes, new varieties, 1 doz. each kind	2 00	1 00

	1st.	2nd.
Best Bushel Carrots	2 00	1 00
" " Turnips	2 00	1 00
" " Mangold Wurtzel	2 00	1 00
" " Beets	2 00	1 00
" " Parsnips	2 00	1 00
" " Onions	2 00	1 00
" Collection roots, exclusive of potatoes, 6 each variety	2 00	1 00
" 6 heads Cabbage	1 00	0 50
" 6 " Cauliflower	1 00	0 50
" 2 Squashes	1 00	0 50
" 2 Pumpkins	1 00	0 50
" 6 heads Celery	1 00	0 50
" Bouquet of Flowers	2 00	1 00

FRUIT, ETC.

	1st.	2nd.
Best collection of apples, 12 each kind	\$4 00	3 00
3rd best collection, do	2 00	1 00
Best doz. apples any variety	2 00	1 00
" " pears	2 00	1 00
" 1/2 peck plums	2 00	1 00
" crock or tub butter, not less than 20 lbs	3 00	2 00
" cheese, not less than 30 lbs. Factory	2 00	1 00
" cheese, not less than 15 lbs. Dairy	2 00	1 00

FARMING IMPLEMENTS, ETC.

	1st.	2nd.
Best double mould board plough	\$4 00	3 00
" Single do do	4 00	3 00
" Iron Plough	4 00	3 00
" Harrow	3 00	2 00
" Cultivator	3 00	2 00
" 3 Dyke Spikes	2 00	1 00
" 3 Potato Forks	2 00	1 00
" Collection of Furniture	5 00	3 00
" Washing Machine	2 00	1 00
" Collection of Harnesses	6 00	4 00
" " Trunks	3 00	2 00
" " Leather	3 00	2 00
" Buggy	5 00	3 00
" Open Wagon	5 00	3 00
" Express Wagon	5 00	3 00
" Model of Portable Fence	5 00	3 00
" Grindstone	3 00	2 00
" Collection of Hats	4 00	3 00
" " Stoves	4 00	3 00
" " Men's Boots	3 00	2 00
" " Women's Boots	3 00	2 00
" " Boys & Misses	2 00	1 00

DOMESTIC MANUFACTURES.

	1st.	2nd.
Best 10 yds all wool filled and dressed cloth, hand loom	\$3 00	2 00
Best 10 yds all wool Sheep's gray twilled homespun	3 00	2 00
Best 10 yds cotton and wool, twilled grey homespun	3 00	2 00
Best 10 yds all wool, women's wear, hand loom, any color	3 00	2 00
Best 10 yds all wool flannel, plain	3 00	2 00
Best 10 yds all wool flannel, twilled	3 00	2 00
Best 10 yds cotton and wool flannel, twilled	3 00	2 00
Best 6 pairs men's socks	2 00	1 00
" 3 " women's hose	2 00	1 00
" 16 yards all wool carpeting	5 00	3 00
" " rag carpeting	4 00	3 00
" woollen yarn hearth rug	3 00	2 00
" rag mat	2 00	1 00
3rd best ditto	1 00	0 50

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