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THE
Canadian Agriculturist,

AND

JOURNAL OF THE BOARD OF AGRICULTURE

OF UPPER CANADA.

VOL. XII.

TORONTO, APRIL 16, 1860.

No. 8.

AGRICULTURAL OPERATIONS.

Although winter may now be said to have finally departed, and we have already enjoyed many delightful days of spring, yet such is the fickleness of our climate, that great care and caution should still be extended to the various domesticated animals of the farm. The sudden changes in the temperature and state of the atmosphere to which we are so peculiarly liable at this period of the year, with the frequent recurrence of a scanty stock of nutritious food for cattle, often tax the ingenuity and anxious thoughts of the farmer, how he can keep his herds and flocks in a good, thriving condition up to the time when his pastures will be sufficiently advanced to receive and support them. Those who have got a reserve of turnips, mangels, carrots or parsnips to fall back upon at this season of the year, will find it much to their own convenience and advantage, and of the greatest benefit to their stock. To newly calved cows, and ewes that are lambing, a regular, though it be a small, supply of such productions, will be found economical and profitable. Breeding ewes and young lambs especially require and abundantly requite the best and most liberal treatment, both as regards food and shelter; as expo-

sure to a few hours wet and cold, such as are certain to occur occasionally at this season, will be sure to injure, if not destroy them. Horses should likewise receive special attention, and be supplied with the best provender, thoroughly and regularly ground, that they may be in proper condition for the arduous spring and summer work which they will have to perform. A few roots given daily to a horse at this season, will wonderfully assist in restoring the tone and strength of his system. Horses fed with a few carrots daily, with now and then a mash or a little cooked food, with good grooming, will seldom be troubled with broken wind, hide bound, or a difficulty in casting their old coat. One of the most prolific sources of heaves is feeding the animal with inferior hay, and giving him large quantities of water at long and uncertain intervals; a practice, though common, that is highly injurious both to the health and appearance of that most useful and indispensable creature.

Land intended for spring crops should by this be got into proper condition. Those who ploughed and furrowed their wet, heavy land in the fall will now experience the advantage. Although we would not recommend the farmer to get in any of his crops before the ground is sufficiently warm

and dry, so as to secure a good conditioned and promising seed-bed; yet we would remind him of the necessity of getting matters in as forward a state as possible. Oats and peas should be got in as soon as the weather and ground will admit: with spring grain that which is the earliest sown, other conditions being the same, will always be better and heavier, and come sooner to maturity. Our late sown grain is not in the ground sufficiently long to produce a good quality; there may be abundance of straw, but the kernel is certain to be deficient in weight, and consequently in nourishing ingredients. The practice of some farmers sowing late is exceptionable. For instance, many will not sow the Fife variety of spring wheat till after the middle of May, not because that kind of wheat would not be better if sown earlier, but by sowing very late, experience has taught us that the crop will be out of danger from the midge. It is of great advantage in this country to get our spring crops to cover and shade the ground before the hot weather sets in. A deep and fine seed bed is also of great importance, inasmuch as the seed, especially the smaller kinds, such as clover and the grasses, will more certainly and uniformly vegetate and mature, and find ample room for extending their roots in search of food and moisture. Under shallow cultivation, although the surface may be tolerably fine, plants will be sure to receive an irrecoverable check immediately after dry weather has commenced.

Carrots and parsnips should now be sown as soon as possible, always of course having regard to the character of the season and the state of the land. Even in this climate, where the important operations of spring work are always crowded into a short space, a week or two of latitude must be conceded. Still we again urge upon the farmer the importance of being early in readiness for the committing of his seed to the earth; as the losses, direct and indirect, arising out of a state of backwardness, are much greater than people in general ima-

gine. Carrots and parsnips should invariably be sown in rows, as by that means they can be more readily set out at proper distances, the ground cultivated during the period of growth and kept free of weeds, and the crop very much increased. No farmer that knows the value of carrots and parsnips,—the former more particularly for horses, and the latter for milch cows,—will be without them. Parsnips being particularly rich in saccharine matter, and imparting no unpleasant taste to milk and butter, as turnips do, are of essential advantage to dairy stock. They are likewise easily grown, and a portion may be left in the ground without detriment all winter, and taken up quite fresh in early spring, when they will be found a most seasonable auxiliary.

The procuring of genuine seed, of good quality, free from the seeds of weeds, is a matter of supreme importance, the theory of which every farmer is ready at once to acknowledge, but in practice unfortunately he too often underrates it. Much, or rather most of the failures experienced of late years in our principal farm crops, have arisen from defective cultivation and impure seed; the latter being a natural consequence of the former. Genuine seed plump and heavy, is cheap at any price, but seed of a contrary description, which too many for one reason or other seem willing to put up with is dear, *very* dear as a gift. This is a matter which lies at the foundation of any improved system of agriculture; and till more attention is paid to it generally in this Province, and we might add on this continent, our grain and other crops will continue both precarious, deficient and inferior. The selection of pure seed, and carefully preparing it by steeping, &c., as practised with the greatest success in the old country, are among the chief causes of the success and profits of British husbandry. It is satisfactory to know that the remedies for deficient crops, impure and diseased grain, and a host of lamented evils, are to a much larger extent than

commonly believed, *within the power of every farmer to apply.* Let our farmers but gain a practical belief of this orthodox doctrine, and a new era would dawn upon our general agriculture.

Land intended for turnips, mangels, cabbage, &c., should now be placed under a course of efficient preparation. It is a good practice for these crops to plough the ground deeply with rough dung in the fall, and to cross plough it in the spring, using freely the harrows, and if need be, the roller, in order to get a deep and fine tilth for the seed bed. Ground intended for these crops, in particular, should be worked only when it is dry, as the crop will depend a great deal on the mechanical condition of the soil, particularly during the earlier stages of growth. We would urge upon our readers, therefore, the importance of making the best preparations they can for these kinds of crop, which they will have to sow in the course of next month.

Winter wheat, in some situations, may be much improved by harrowing and rolling, as soon as the ground gets sufficiently dry for such operations, and the plant adequately advanced. A bush harrow, with short blunted tines, is the best form of the implement for this purpose. The improvement effected by these means, followed by genial weather, is sometimes of a very marked character.

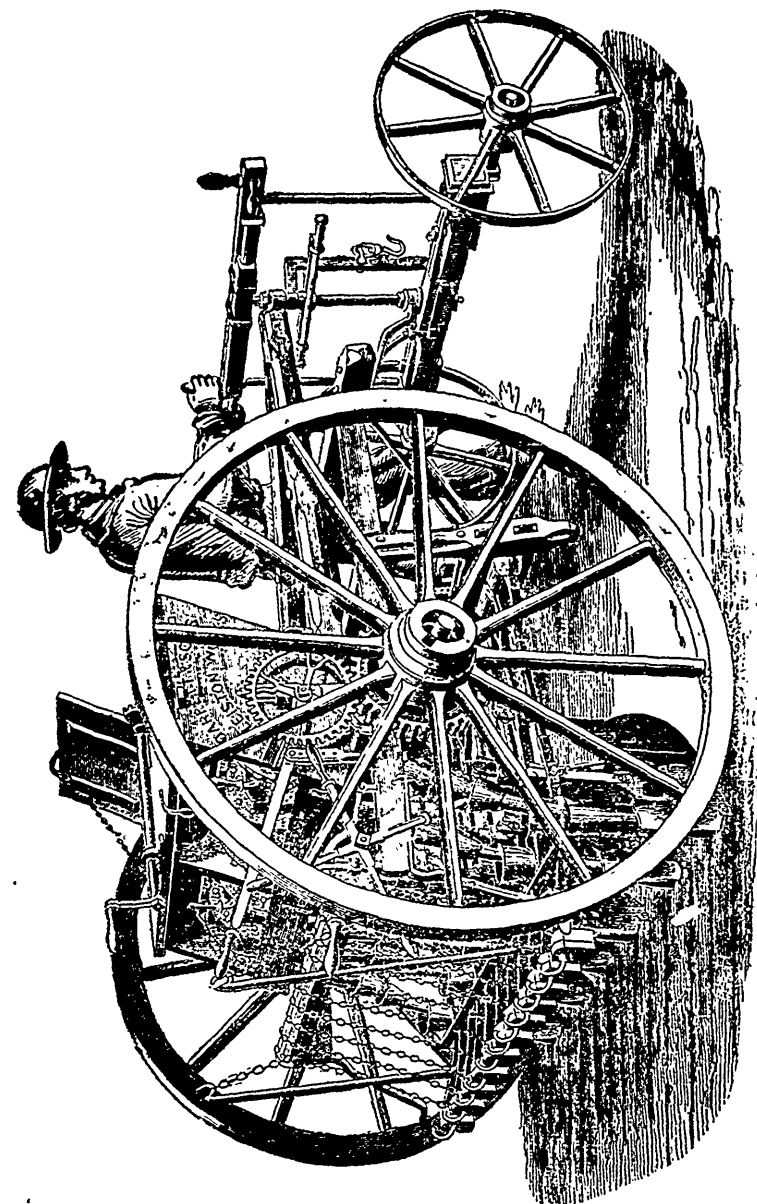
Fences, if not repaired before, should now be put in good order, before cattle are turned out to pasture. The neglect of complying with this precaution in time, is frequently attended by the most serious consequences throughout the grazing season. It is bad fences in spring that are the principal, and we believe oftentimes the only cause, of so many cattle proving breachy afterwards. And the losses and annoyances commonly suffered from the want of timely attention to the repairing of fences, is a matter, alas, with which but too many are practically conversant.

GRAIN DRILLS.

The cultivation of crops in rows, if not of very recent origin, may be said to belong to the most important characteristics of our modern agricultural advancement. With root crops the row system has many decided advantages, which more or less belong to most kinds of grain. The invention and improvement of machines for drilling the different kinds of seeds and grains, have, of late years, astonishingly facilitated this important process, and which, as a consequence, has, of late years, been widely extended. Various kinds of drills for sowing grain, turnips, &c., are now in use on this continent, as well as in Europe, and the results every where are acknowledged to be highly beneficial. In the case of wheat, for instance, there is a considerable saving of seed by using the drill, as compared with the common practice of sowing broadcast, and the seed being deposited at a uniform depth comes up more evenly, and much fewer grains perish in the soil. It has been found in Canada that winter wheat when drilled gets firmer root, and is much less liable to be thrown out by the action of frost, during early spring. Besides, drill crops allow of cultivation, either by manual labour or the horse hoe, during the earlier periods of growth; the advantages of which can scarcely be fully understood or overrated.

The accompanying engraving represents the Improved Suffolk Corn and Seed Drilling Machine, manufactured by the well known firm of GARRETT & SONS, LEISTON WORKS, SAXMUNDHAM, ENGLAND. This machine is fitted up with superior wrought iron levers, and several important improvements have recently been made in its construction, tending to simplify the working parts, and better adapt it to all the purposes for which it is required; but the main principle remains the same as has been in use in Suffolk, and made by the same firm, for a great number of years.

The coulters of the Drill may readily be



altered to deposit at any distances apart, wheat, barley, beans, peas, or other grain; and, by changing the delivery barrel, turnip, colewort, mangel-wurzel, and other seeds. The delivery is regulated by cog-

wheels of different speed adapted to from 5 to 18 pecks of grain, and from 1 to 6 lbs. of seed per acre.

The arrangements are so contrived as to insure an equally regular delivery of wheat

going up or down hill, as on level ground, by having two cog-wheels of different speeds, one placed on each end of the delivery barrel, either of which may readily be put out of gear, as required, to work the barrel from alternate ends; the small wheel when going up hill, and the large one when going down.

The engraving represents a *side view* of the drill, shewing it with a fore carriage steerage. With this steerage, which is adapted for lands ploughed flat, and acts as a fore-carriage to the implement, a man may keep the rows of grain perfectly parallel with the preceding course of the drill; this is done by a man holding the steerage handle as shown, and keeping the small fore-wheel in the track of the former large one; this, with a little practice, is very easy, and will amply repay by the perfect regularity in the crop, affording the greatest facility for the horse-hoe going between all the rows of plants, and with equal precision, where the drills join in their different courses through the field. The *swing* steerage, at a less cost, and managed without an additional attendant, is amply sufficient where the drill covers each stitch, or land, in twice, and where one wheel can be kept in the open furrow.

The seed-engine is sometimes made to affix to the grain drill, and is adapted to sow at the same time with spring corn, or may be used as a separate implement for grass seeds, broadcast, or turnips, or mangel wurzels, in rows.

In order to ensure an equal delivery of the different kinds of seed, the box is partitioned off into two departments, one for heavy seeds, such as clover, trefoil, &c.; and the other for lighter seeds; the former being delivered from cups, and the latter from brushes, down the same conductors with it. The required quantities of each seed are thus nicely mixed, and evenly sown all over the land, and may be regulated by turning the screw at the end of the box for lighter seeds, and changing wheels on the cup barrel, for clover, &c.

The price of this Drill varies according to size, from £18, having a spread between wheels of 3 feet 6 inches and sowing 6 rows; to £30, having a width of eight feet six inches, and sowing 16 rows. Messrs. Garrett, manufacture drills at lower prices, adapted to smaller farms, also agricultural implements and machines generally; for which they have won the gold and silver medals, and first money premiums, at the leading exhibitions in Great Britain and Ireland, as well as on the continent of Europe. Their establishment dates back as far as 1778.

THE BARLEY CROP.

The cultivation of Barley is yearly getting of more importance in Canada; and our readers will find the following extracts both interesting and useful. They are taken from a valuable serial work now in the course of publication, by Messrs. Blackie & Son, entitled "*Our Farm Crops*," by Professor John Wilson, of the University of Edinburgh, who is personally known to several of our readers in consequence of his visit to Canada, a few years since, and who has always manifested a desire to promote our interests at home, which he did with much success at the London and Paris Exhibitions.

TEMPERATURE.

A mean temperature of 46.4 deg. during the summer quarter, seems to be for Europe the only indispensable condition for the cultivation of barley; in the inland parts of the Atlantic Ocean, and in insular climates generally, a summer temperature of 3 deg. to 4 deg. higher appears to be necessary for its success. Iceland, indeed, where this grain cannot be grown at all, presents in its southern districts, at Reykavik, a mean summer temperature of 49.4 deg. It appears that there unseasonable rains are the means of preventing all cultivation of cereals. With the exception of districts where such counteracting influences exist, we may consider that the limit of barley cultivation varies between the zones of 46.4 deg. and 49 deg. of mean summer temperature (isothermal,) in those countries

where it is of importance as an article of animal food. On continents 46-4 deg. temperature is sufficient, but on islands generally the increased humidity requires to be compensated for by increased temperature in summer. Barley, however, is cultivated as an alimentary plant as far north as either oats or rye; towards the lower latitudes it loses its importance; its cultivation languishes, and ceases altogether on the plains within the tropics, as it suffers more from intense heat than either of the other cereals. It will grow, too, at an elevation far above the range of wheat cultivation. Humboldt met with barley growing at an elevation of 13,500 feet on the Andes, and in Switzerland it may be seen growing at an altitude of 1,950 metres (6,530) above the sea-level; while in our own country we see it cultivated in many districts where wheat cannot profitably be grown. In the south of Europe, Sicily, Italy, and Spain, two crops of barley are obtained in the twelve months; the one sown in autumn is ready for harvesting in the early spring, and the second is then got speedily into the ground, and comes to the sickle at the ordinary harvest time. This variety of barley was known to the Romans, and is fully described by Pliny. It came to maturity in April.

ROTATION.

The evidence already adduced shows that barley requires a large amount of available food (manurial matter) in the surface soil, and that from its habit of sending out its principal rootlets in a lateral direction through the surface soil in search of food, the soil must be kept in a comparatively loosened state during its period of growth, and be left so after the crop is harvested, and the roots have submitted to the usual process of decay. Hence we may assume that place in the rotation to be the best suited for barley in which the preceding crop has left a large amount of fertilizing matter on, or close to the surface, and in which the crop that follows it may not be prejudiced by the loose and open state of the soil it leaves behind it.

The order of cropping is seen in what is termed the four-course, or Norfolk rotation, which is especially adapted for the lighter descriptions of soils on which the finer qualities of barley are generally grown. Here we have barley grown between turnips and clover—wheat being the fourth crop, and preceding the turnips. The turnips, to which a considerable amount of manure has been given, are fed off on the land; and their manurial produce, fre-

quently enriched by the addition of oil-cake or corn, transformed into the shape of solid and liquid excrements from the sheep, is absorbed and mixed up with the surface soil. On such soils, especially after the deep ploughing and extra tillage of the turnip crop, a fine tilth, so necessary for the seed-bed, is readily obtained, and the roots are able to spread themselves quickly through the soil. The clover crop, which follows the barley, has large fleshy roots; these naturally thrive better in a loosened soil than if it were compact and hard, through which roots—those of wheat, for instance—could far more easily penetrate. As the clover roots are developed, the soil gradually becomes firmer and more consolidated; and by the time the crop is finally consumed the pressure on the surface has neutralized the loosening property of the barley, and given the land that compactness which is so desirable for the succeeding crop—wheat. The wheat stubble is ploughed up deep, and left for the weathering influence of the winter months, the manure being either ploughed in with it, or left for the spring ploughing; and the land is then well prepared and in condition for the turnip crop.

If we were to reverse the position of the two-grain crops, neither of them would meet with such suitable conditions. The soil would be too loosened by the preceding crops of barley and turnips to suit the requirements of the wheat, while the clover would leave it too firm and compact in texture to be adapted for the growth of barley.

Neither would the chemical conditions of the soil be more suitable than the mechanical. The food would be supplied in the surface soil of the wheat, which has root-power sufficient to seek for it low down in the subsoil; while the barley, whose habit it is to throw out its roots near to the surface, would find the supplies there more scanty than it would like. Thus this place in a rotation is both chemically and mechanically that best adapted to the special habits and requirements of barley.

We see it, however, frequently very differently arranged. The two and the three-course systems are only followed on strong clay soils, which in themselves are not suited for barley cultivation. In the five and six course systems, on soils suitable to barley, the same arrangement can be advantageously carried out. Here, however, it is that we meet with variable practices. Sometimes we find it following another grain crop—wheat commonly—where the soil is supposed to be in high condition, and the present rather than the future crops occupy the farmer's attention, the tempta-

of putting two consecutive crops in his pocket being too great to be resisted. Under the most favourable circumstances this a very questionable gain, and under ordinary circumstances a very certain loss. Both crops belong to the same order of plants; they require the same food from the soil, and in about the same quantities, to perfect their growth. The wheat occupies the ground first, and has about nine months to search about and abstract from it all the food it needs. It is then followed by the barley—a plant less vigorous in its growth which, however, is expected, during the short time it occupies the soil—four to five months—to obtain from it, in its now impoverished state, the same amount of mineral matter which the wheat had double the time to effect in. The consequence is, that the second grain crop is generally a very reduced one. It may look very well while it is growing; but when it comes into the barn, its yield will be found diminished in quantity, while the wheat of the sample shows its deterioration, and lowers its market value. The succession of crops of the same order, too, tells its tale of injuries sustained by the attacks of insects and plant diseases, which, though noticed probably to only a small extent in the first, may, with the powers of increase so remarkable in them, become enormously developed in the second. Where barley follows wheat, the seeds, generally containing grasses—again the same order—invariably suffer; and we all know the value of a good crop of seeds everywhere where mixed husbandry is carried out.

Again, in some rotations, barley is taken after a leguminous seed crop—beans, or peas, or vetches. These, especially the two last, generally leave the land in a very foul and dirty condition—a state very ill suited for barley with which seeds are to be sown down. For these to succeed and give their full return, the land cannot be too scrupulously clean. Besides which, the beans and peas require from the soil the same food as the crop of clover looks for, and are afflicted by the same diseases and injuries which so often diminish our seeds. As a rule, we should always bear in mind that the longer the interval between the same crops, the better, and the greater the chance of remunerative cultivation. Experience has long ago pointed this out to the diligent farmer, and science has now proved it, by showing him the cause of it.

DAIRY HUSBANDRY.

(Continued from page 143.)

CHURNING.—This is generally done out of the dairy, either, as in summer time,

in a paved shed adjoining, or in a back kitchen or washhouse, where the cream may be more easily kept warm during winter. In order to the separation of butter, agitation and mixture of the cream with air are both necessary. The agitation breaks and unites its oily globules, and the absorption of air appears to be a necessary thing in order to their appearance in the form of butter. This is proved both by the fact that milk or cream, however sweet, becomes sour by churning, and that considerable heat is given off, the bulk of the liquid rising in temperature 4 or 5 degrees Fahr. during the process; and both of the facts indicate considerable absorption of oxygen gas.

(1.) In those cases where whole milk is churned for butter, the churn is a fixture. It is an upright, somewhat conical vessel, made so, however, only in order to secure the tightness of its hooping, and it is of various dimensions, from three feet and upwards in height, and from fifteen inches in diameter, and according to the quantity of milk to be treated. This milk is churned when about three days old, varying according to the weather, being first allowed to cool, and then placed in large wooden vats to become sour. The practice is to place it in coolers, as in ordinary dairies, until it has acquired the temperature of the air, thereafter to pour it into large wooden vats capable of holding two meals at a time, where it sours; and if churning is done twice or three times a week, to put into the churn all the milk which has become sour, whether it be sixty, forty-eight, or only twenty-four hours old; never, however, putting sweet milk into the churn along with the sour, as, if milk becomes sour by churning, or otherwise than in the natural way, the buttermilk soon becomes rancid and unsaleable, whereas the buttermilk from milk soured naturally retains an agreeable and saleable quality for a much longer time. The milk in summer is churned at the natural temperature; in winter hot water is poured in with it till it is raised to 65 or 70 degrees. In winter, too, when cows are fed on turnips, the milk is poured at once into the churn, and allowed to sour there; and being hindered as much as possible from cooling, and afterwards heated by the addition of hot water, the butter does not retain any taste of the turnip. The churning commences and is carried on for three hours, a regular stroke of the plunging float-board being an essential part of the process, and a rate of forty to forty-five strokes per minute being maintained. This regularity is attained by

the use of steam or water power, it being in the case of the larger churns too laborious for manual labor. The after-management of the butter, when it has "come," is the same, whatever method of churning is adopted.

(2) When butter is obtained by churning cream, this may be either sweet and fresh, or left to sour. In the former case it becomes sour by churning, and the process is somewhat longer; in the latter the natural sourness facilitates the separation of butter, and provided the natural change produced in the cream by keeping it is confined to mere acidity, the butter is as sweet in the one case as in the other. Whatever churn is adopted, it is washed out first with scalding water, and then with cold water before using it; the cream is then introduced through a coarse canvas cloth, which acts as a sieve, and in winter it is raised to a temperature of 55° to 60° by the addition of hot water; or, as in some churns is possible by standing the whole apparatus in a tub containing water of that temperature. In summer, again, when for the sake of cooling churning should take place early in the morning, Mr. Littledale, of Birkenhead, reports that he has found great advantage from placing in the churn fragments of the clear American ice, by which the temperature is kept down low enough. A common plan is to let cold water stand in the churn for an hour before using it in summer, and to let hot water stand in it for some time in like manner in winter. Another fact affecting all churns alike is, that there is no advantage in too rapid a process of churning. Cream churned from thirty to forty minutes, ought in that time to have yielded its butter; and to this end a regular, not too rapid movement of the agitator should be maintained. In some cases butter will not "come" till after hours of churning, and occasionally patience is exhausted first, and it never comes at all. In this last case a fragment of ice is more likely to be effective than the crooked sumpence, on which the hopes of superstitious dairymaids sometimes depend! A last rule affecting all churns alike is, that churning should cease after the butter has fairly "come" and been collected by the beaters. To prolong it tends to the separation and mixing up with the butter of cheesy particles, which add to the weight of the butter but take from its quality.

(3) Churns of very many kinds are made. The upright churn has been already named. The barrel churn, in which the cream fills one-half or more of a horizontal cask slung in a frame-work, provided with shelves

projecting from the inside half-way towards the axis, and the whole turned slowly with the handle, certainly makes more butter than any other in the country. The box churn, in which the vessel holding the cream is stationary, and the churn is agitated by a revolving series of beaters arranged around a horizontal axis, is very common. It has the advantage of requiring less force than when the whole cream and vessel revolves. It has also the advantage of being capable of being placed in a tub of warm water; and in some forms of it, when made of tin or zinc wrapped round two U shaped end pieces of maple or other white wood, it has the advantage of admitting of a double coat of the kind, the interval between them being filled with water of the temperature desired.* The beaters are generally a mere framework of rods parallel with the axis, and connecting the bars of two cross pieces of wood through which at either end the axis passes. In the American box churn, however, the beaters are a series of wooden cross arms arranged radially along the whole length of the revolving axis, and hollowed out on the front side, so that the cream filling the box but little above the axis, each arm carries down within it is arm full of air, which thus becomes thoroughly intermingled with the cream, so that both purposes of churning are effectively accomplished. In Rowan's churn an oval tub open at the top is divided by a longitudinal upright division, open, however, at either end, on one side of which the beaters revolve, while in the other is placed a transverse wirework screen acting as a sieve. The milk is thus beaten up in the manner of the pulp in a paper-mill, and passes forward round and round this longitudinally partial division, and the butter it "comes" is caught by the screen; the vessels of hot water, if necessary, stand in the unoccupied side, and so heat the milk, as it passes them, of the requisite temperature. The common Sussex churn is a fixed horizontal cylinder of tin, with horizontal axes and beaters of flat tin tubes, and the whole may be placed in a tub of warm water to be kept of the requisite heat. There are also many upright churns within which beaters revolve round one or more vertical axes. Thus, in Mr. Clyburn's churn, employed by Mr. Littledale, of Birkenhead, a vertical cylinder holding eight gallons is provided with fixed arms projecting inwards from its surface nearly to the central axis, and between them

* This form is manufactured by Robinson, of Burn, County Armagh.

arms on this axis revolve at the rate of 100 revolutions per minute, and butter "comes" generally within half an hour. How very rapidly the process may be carried out is apparent from the following remarkable statement by Mr. Littledale:—"We churn by steam, and last summer we tried the shortest possible time we could do it in; it was a hot day, and we accomplished it in five minutes and a half; the engine making 300 revolutions per minute, and the quantity eighty gallons of milk. We have also found out in this very hot weather that it pays us well to put American ice into the milk before churning, to reduce the temperature to get out more butter."

Let it be noted here, that however possible and even desirable, when an immediate sale is obtained for the produce, such rapid churning as this may be, it tends more to the permanent value of the produce when butter is obtained more slowly, as, for instance, in forty minutes, or within the hour.

Among other vertical churns, we may refer to Standing's (Preston, Lancashire,) patent "sun and planet" churns, in which two vertical axes are made, by a very simple arrangement of bevelled wheels above, to revolve each on its own axis, and each around the other, so that the whole mass of milk within the cylinder is made to undergo a beating, without generating any revolving motion of the milk itself within the vessel, which would, of course, so far enable it to escape the action of the beaters. A common vertical churn consists of a simple cylindrical vessel, with an upright axis, carrying three pierced flanges, extending from the axis to nearly the surface of the vessel, and worked by a handle and bevelled wheels above. In this case, it is well, with every two or three turns of the handle, to reverse the movement, because of the tendency of the motion one way to carry the milk or cream with it. Lastly, we may name Drummond's (Stirling) plunge churn, in which two plungers work alternately up and down alongside each other, and thereby produce sufficient agitation in the cream; the tub being separated into two chambers, one for each plunger, by a vertical perforated divider.

The following are the prices of the common forms of churn:—Barrel churn costs from £2 upwards, the smallest size being eighteen inches long, and as much in diameter at the widest part.

Rowan's churn varies from 50s. to £4, according to size. The Sussex churn costs from 30s. to two guineas. American box churns vary from £2 to £5 or £6, accord-

ing to size. Standing's "sun and planet" churns are advertised at from 33s. to 118s. *i. e.*, as capable of churning two gallons to thirty gallons of cream.

In every case after churning and the removal of the batter and buttermilk, the churn is to be well scrubbed and cleaned with cold water; and then, being washed out, scalded with hot water, which should stand in it for an hour, and the churn may then be left open to the air to drain and dry.

Correspondence.

GOOD COWS, WALKING HORSES, &c.

MR. EDITOR—What is the principle by which Judges award prizes to the best cows for milk? Is it by their appearance only, if so, this, I apprehend is not always a sure sign. Should not some facts be produced proving what the cow has yielded as evidence of her goodness?

What are the best marks or signs of a good cow?

In raising calves are there any marks by which we may know that the one will be a good milker, and that the other will not be as good? Can any one give us any information on this subject?

In the *Genesee Farmer* for the present month, I find an article on walking horses, and the writer suggests the offering of premiums at our Agricultural Shows for fast walking, as well as for fast trotting horses. I am quite of this opinion, as fast walkers are of more importance to the farmer than fast trotters; this quality is much needed at the plough, the harrow, and when taking off loads. And should there not be a prize for the oldest team in good working order?

This may lead to the choice of the best stock of horses, and the kind of treatment they have received.

I often see a fine animal passing my place before a load of wood, and the owner informed me that she was twenty-four years old.

I hope this will draw out others on these subjects.

S. KING.

Ryckman's Corners.

HUNGARIAN GRASS.

To the Editor of the *Agriculturist*.

Pine River, March 13, 1860.

In an early number, will you oblige a new subscriber with instructions as to the

proper time for sowing the Hungarian Grass Seed; I am told it may be sown in *May* for a crop in July, or in July for a crop at the end of August—and that two crops may be got from the same piece of ground, in the above respective months. The land in which I propose to try the experiment, was last year cropped for the *first* time, and with potatoes and turnips. How many pounds per acre of seed ought to be sown on this new and stumpy, though in other respects tolerably clean land, which, in composition, consists of the natural *top soil* of decayed vegetable matter, loam and clay.

I learn that the Hungarian Grass is not suitable as constant food in winter for horses—is this a fact?

R. GREENHAM.

REMARKS.—Hungarian grass seed may be sowed any time during the months of May and June, at the rate of 16lbs to the acre, and will come to maturity on a good, suitable soil in about three months. We think that two crops could not be profitably got in one year in this climate. If sown early it might be ready for making into hay about the end of July, and a crop for forage in a green state may perhaps be got afterwards; but we should very much doubt the expediency of the proceeding; at least as a general rule. The Hungarian grass, (which is a species of millet,) has not been as yet much tried in Canada, but in some parts of the United States it has been experimented on rather extensively, and in the majority of cases with satisfaction in the result. All animals are fond of it in a green state, and when fully grown it may be made into hay—yielding, according to several statements which we have seen, from 2 to 3 tons and upwards per acre. Our correspondent's soil, we should think, is well adapted to this crop, which can no doubt be cultivated with advantage where clover and timothy have failed; or as summer provender on farms partially cleared, when it might be sometimes advantageous to make it into hay. We have heard that horses having eaten largely of the hay in winter, have sometimes done badly, being afflicted with stiffness in the

joints; but we have not been able to trace such reports to any very authentic source. Probably if it is allowed to ripen its seed before mown, the large quantity of seed which it usually yields, may not, when taken in great quantities, agree with horses or cattle generally. Upon these and other points, however, we need information from well directed experiments. We have no hope, however, of ever seeing the Hungarian grass supersede, in any degree, our ordinary timothy and clover.—Ens.

PREPARED CATTLE FOODS.

Editors of the Agriculturist.

Cobourg, April 2, 1860.

Instead of drawing on my *own* resources for something hardly worth printing in your very excellent paper, I prefer using the Editor's friend, *Mr. Scissors*, and clip an article from the "Field," which will well repay a pointed study from every feeder of a *horse, cow, sheep, or pig*.

Farmers are shaved in many ways besides on pro. notes, and the following extract will show very clearly whether *Chemistry* is entitled to become part of a farmer's education, or be scouted, as fit only for those who can't hold the plough.

Yours truly,

P. R. WRIGHT.

HORSE AND CATTLE FOODS.—Those who have watched the progress of agriculture in these days, have no doubt observed that it is not in one branch alone, but that agriculture as a whole has made rapid and important strides. While the mechanical department has received full attention with marked improvement, the growing of seed has become a matter of varied research and experiment. While greater care has been taken of the different breeds of animals, the progress has undergone alterations and received additions; hence many new kinds of food have been introduced, resulting in a quicker and greater develop

ment of saleable carcass. When chemical analysis had once shown how food should be applied so as to produce the greatest amount of flesh, the point for consideration was the limit of price of these flesh-producing substances, so as to bring feeding within the bounds of a profitable operation, for there is necessarily a pecuniary limit beyond which the cost of food would be more than the product of feeding. We may assume that this has now been ascertained by direct experiment, and that the different kinds of cake which now form the basis of feeding are within the range of a reasonable return.

It is not surprising, when artificial foods should thus come to be adopted as so much fattening power, that various mixtures should be employed largely impregnated with stimulating substances. They are thus made extremely palatable to the animal, who naturally enough thrives upon the good things provided for him. We will not now stop to inquire how far this stimulus may be permanently beneficial, even admitting the temporary advantage; our object is simply a cash account. If the price of cake, ranging at about £10 a ton, forms the limit from which any ordinary return can be expected, how can an article, sold at a price realizing from 300 to 400 per cent. on the cost price of the materials of which it is composed, ever bring any return at all? Such savoury condiments, dished up at from £40 to £50 a ton, have no more fattening powers than the ordinary cakes and meal, of which, indeed, their bulk is principally composed. Locust beans, the different oilcakes, and Indian corn form the basis of these cattle foods so often paraded before the public, with which sundry stimulants, making a kind of curry-powder concoction, are mixed up. This, though it may be highly agreeable, yet at the price above stated forms a most costly addition to the ordinary feeding cost, and an animal once fattened on such material can hardly fall back on ordinary food; hence the price of fattening is greatly enhanced, but without any increase of the saleable carcass, for there is a natural limit in this direction. A compound at £40 a ton will make no more flesh than oilcake at £10; but if the farmer approves of and will have the compound, let him simply mix the materials himself. There is no secret in the composition, for the test is at hand in a simple

analysis. The following is an ordinary formula:—

TO MAKE ONE TON OF MEAL.

	Cwt.	qr.	lb.	Price.
Locust Bean, finely ground, at £6 a ton.....	6	0	0	£1 16 0
Indian Corn, at £7 a ton.....	9	0	0	3 3 0
Best Linseed Cake, at £10 a ton.....	3	0	0	1 19 0
Powdered tumeric, at 5d. a lb.....	0	40	1	6 8
Sulphur, at 2d. a lb.....	0	40	0	6 8
Saltpetre, at 5d. a lb.....	0	20	0	8 4
Liquorice, at 1s. a lb.....	0	27	1	7 0
Ginger, at 6d. a lb.....	0	3	0	1 6
Aniseed, at 9d. a lb.....	0	4	0	3 0
Coriander, at 6d. a lb.....	0	10	0	7 6
Gentian, at 8d. a lb.....	0	10	0	6 8
Cream of Tartar, at 1s. 8d. a lb.....	0	2	0	3 4
Carbonate of Soda, at 4d. a lb.....	0	6	0	2 0
Levigated Antimony, at 6d. a lb.....	0	6	0	3 0
Common Salt, ½ a lb.....	0	30	0	1 3
Peruvian Bark, at 4s. a lb.....	0	4	0	16 0
Fenugreek, at 9d. a lb.....	0	22	0	16 6
Total.....	20	0	0	£12 18 5

Looking at this composition, it will be evident at a glance that the chief ingredients, are the ordinary commercial locust bean, Indian corn, and oilcakes. These form its bulk, and constitute nine-tenths of the whole; the remainder being made up of condiments and stimulants, the sulphur and antimony being intended to act upon the skin in the production of a fine coat, and the fenugreek forming a kind of mucilage to prevent any ill effects that might arise from the stimulating character of the food. These ingredients have, no doubt, been selected with skill, and an animal may be expected, and not unreasonably, to thrive upon such savory substances. For this precious article (which unquestionably is) the modest sum of about 42s. a cwt. is demanded, or at the rate of £42 a ton, or upwards of 200 per cent. on the cost prices, even taken at the valuation given above, which, for the one-tenth or stimulating portion, might be considerably reduced if the several materials were bought at wholesale prices. We prefer, however, to take the ordinary trade valuation, in order to give the widest margin possible for the cost—this, after all, being the simple point at issue. If a farmer wishes for the article, the use of which, containing as it does so much stimulating matter, is very questionable, and chooses to pay from three to four times the intrinsic value, it is, of course, at his option to do so; but as the whole question of farming is one of paying, we will put it plainly—Can it pay to feed animals on substances costing from £40 to £50 a ton? A knowledge of the constituent elements of these foods may induce a pause before the outlay is made. Some supposed great secret has, no doubt, with a few, acted as a charm, on the

principle of *omne ignotum pro magnifico*; but the analysis at once dispels this allusion, and nothing remains but the cost and its result, mere matters of ordinary calculation,

Which each man will do well to try
Ere he commits himself to buy.

—*The Field.*

Agricultural Intelligence.

DOGS AND SHEEP.—We regret to notice in the local papers that many valuable sheep have lately been destroyed in the neighborhood of Guilph, by dogs. Messrs. McGrea, Pipe, Chipcase, and Edward Brown have been among the sufferers. Mr. McGrea had about 20 valuable sheep killed. Mr. Pipe lost 6 pure bred Leicester ewes in lamb, which he had lately imported at great expense. Such losses from such a cause are lamentable, and show the necessity of some stringent regulation in regard to such dangerous animals. The dogs which effected the damage in this case, broke into the pens in which the sheep were confined at night.

F. IX.—The cultivation of flax is now attracting a large amount of attention in various parts of the Province, and it would seem that this question, so long discussed, is at last to be seriously taken up. The great difficulty heretofore has been the want of a local market, and of mills to prepare the fibre for market. We now hear of several projects of erecting mills. One is proposed to be erected at Georgetown, on the Grand Trunk Road. Mr. James Young proposes to furnish seed to 100 farmers, on condition that they sow five acres each, and bring the flax to the mill. Payment for the seed will not be exacted until the crop is harvested. The *Ayr Observer* says that upwards of seventy farmers in that neighborhood have engaged to sow a greater or less quantity of land the ensuing spring.

THE CROPS.—We hear rather conflicting statements of the condition of the winter wheat in this Province. Some accounts state it to be much heaved out of the ground, while others represent it as very promising. Of course a good deal depends upon situation, and the quality of the land, the precautions taken to secure drainage, &c. On the whole we are disposed to think that the prospects of the crop are favorable. We have had, so far, rather early spring weather, but the frosts at night have been injurious. A few genial growing days would soon place the crop out of danger.

ILLINOIS.—The early sown fields are generally looking well. There are fears that the

late sown wheat is entirely killed out; that put in with a drill or plough is looking well.

INDIANA.—The winter has been unusually favorable, and the wheat in the central part of the State looks well. Unless a great deal of thawing or freezing takes place without snow before the middle of April, it will have every chance of a fine start. In other outlying districts it is considerably injured.

NEW YORK.—The *Buffalo Express* reports from travellers that the growing wheat looks promising and apparently safely through the winter.

KENTUCKY.—The late sown wheat in this State, it is feared, will be of little use, but the earlier sown is safe. From other western States, the information, as far as it goes, is also favorable, and on the whole the prospects for the harvest of 1860 are equal to any of former years.

CANADIAN OATS IN SCOTLAND.—In Oats of any other variety, there were some very remarkable specimens of Canadian oats. Mr. Hutcheson's third prize sample was of that species of grain, but did not by any means show its qualities so strikingly as a sample of Mr. Souter's, of Strocheries, which was excluded from a prize by its having been partially "sheeled," in the process of being threshed. The grain was so very large and well matured that the "sid" by which it was covered, on being struck in threshing, had in some cases flown off, and gone with the chaff in dressing. This sample was said to be of the extraordinary weight of 50 lbs. per bushel.—*Banffshire Journal.*

[These Canadian oats were shown at the Banffshire District Agricultural Exhibition, held on the 7th of February last. It is not stated from what part of this Province the seed was obtained, nor the name of the variety. The climate of the Lower Province is more favorable to the oat, than that of the western section, but the contrary is the case with regard to wheat. Scotland is peculiarly adapted to the growth of the oat; and from the above facts, it would appear, that Canadian varieties when introduced improve both in weight and quality.—Ebs.]

Horticultural.

HORTICULTURAL SOCIETIES.

ANNUAL REPORT OF THE TORONTO HORTICULTURAL SOCIETY.

We are glad to see that this important and long established society continues to

flourish. The spring and summer exhibitions were as successful as could be expected under the circumstances; the unusually severe frosts that occurred in June, and the general failure in fruit of most kinds, operated most injuriously on Horticultural Exhibitions throughout the Province. The Fall Exhibition was held in the Crystal Palace, in connection with the "Electoral Division Society," and formed one of the principal attractions of that show. The vegetable department was excellent.

We learn from the Report that the ground given by the President of the Society, Hon. G. W. Allan, for the purposes of a Botanical Garden, has been put under a course of improvement and preparation. Nearly £400 having been expended in draining, levelling, mounds, roads, &c., under the superintendance of Mr. Edwin Taylor, Landscape Gardener, of this city, who furnished the plan which is so generally admired. It is expected that the garden will be sufficiently finished this year for occupation by the society in the fall. These grounds, when completed, will reflect great credit on the Society, will be a lasting monument of its President's enlightened generosity, and will afford delightful walks to the members and citizens generally, amidst the most attractive and delightful objects of nature.

We are glad to find from the prize list of the present year that the President again offers three silver medals:

For the best collection of Roses (all kinds).

For the best collection of Grapes and other Fruits (grown under glass).

For the greatest number of first Prizes in Vegetables and smaller Fruits.

SPECIAL PRIZE OF \$5,

For the greatest number of new or rare Plants and Flowers shown during the season, and not previously exhibited.

The Report concludes with the following just tribute to the character and services of an old and tried friend of Canadian Horticulture, who has lately been removed from among us by the destroying hand of death.

Your Committee, before concluding this very imperfect report, feel it to be their melancholy duty to make a brief allusion to the loss the Horticultural community has sustained in the lamented decease of Judge Campbell, of Niagara. By the members of this Society, to most of whom he was personally known, his general kindness of disposition, and readiness to enter into any scheme for the furtherance of our common object, will—while we cannot but express deep regret for his sudden and unlooked for departure from amongst us—be ever pleasingly remembered; in fact his indefatigable exertions and enthusiasm in every thing pertaining to Horticultural matters, will form a subject of conversation for years to come, more particularly during the holding of the "Annual Exhibition of the Provincial Agricultural Association," at which he was on every occasion, we can safely affirm, the largest, most valuable, and successful contributor in his department, and it will be long ere his place can be supplied.

TENTH ANNUAL REPORT OF THE HAMILTON HORTICULTURAL SOCIETY.

This valuable society continues to pursue the even tenor of its way, making a gradual and consequently a healthy progress. It embraces many able cultivators of the Horticultural art, both professional and amateur, and Hamilton possesses within itself all the elements of a good permanent society, and the means of getting up first rate exhibitions, some of which we have attended with great pleasure and profit. We subjoin a few extracts from the Report that will generally interest our readers:

EXHIBITIONS.

The Exhibitions of the Society have been unusually successful, and the quality of all articles exhibited, especially Flowers and Vegetables, has been superior. Stone fruit, having entirely failed in this district, (owing probably to the severe frost of the winter of 1858-9, when the thermometer sank to more than 30° below zero, and also to the late frost on the 12th of June, which was very severe) there was a falling off in this department. It was, however, more than made up for by the great excellence of the others.

The following table shewing the progress of the Society is deemed worthy of preservation:

PROGRESS OF THE HAMILTON HORTICULTURAL SOCIETY.

YEARS.	JUNE SHOW		JULY SHOW		SEPT. SHOW		Total prizes offered.	Total prizes taken.	Total entries made.
	Entries Made.	Prizes offered.	Entries Made.	Prizes offered.	Entries Made.	Prizes offered.			
1851	174	82 $\frac{1}{2}$	—	—	219	140	223	196	393
1852	115	83	—	—	270	135	221 $\frac{1}{2}$	168	385
1853	150	77	118	59	234	101 $\frac{1}{2}$	237 $\frac{1}{2}$	197	562
1854	193	97 $\frac{1}{2}$	148	64 $\frac{1}{2}$	361	135 $\frac{1}{2}$	297 $\frac{1}{2}$	264	697
1855	185	103 $\frac{1}{2}$	—	—	343	177 $\frac{1}{2}$	281	264	526
1856	225	107 $\frac{1}{2}$	179	77	374	202	386 $\frac{1}{2}$	324	778
1857	217	117	241	96	445	221 $\frac{1}{2}$	437 $\frac{1}{2}$	339	902
1858	207	131 $\frac{1}{2}$	229	118	392	240	489 $\frac{1}{2}$	348	825
1859	318	125 $\frac{1}{2}$	382	126 $\frac{1}{2}$	712	252	498	387	1418
Totals.....							3072	2608	

DECEASE OF JUDGE CAMPBELL.

The Board cannot leave this subject without paying a tribute to the memory of the late Judge T. C. Campbell, of Niagara, who so often officiated as a Judge at their Exhibitions. As a Horticulturist, as well as in other walks of life, he was eminent, and his death must be a serious blow to the progress of the Gardeners' art. Men, like flowers, must die, yet Judge Campbell seemed likely to live usefully so much longer that we grieve over him the more; just as the last of a plant which an untimely frost destroys is more severely felt than if it had lived until its usual time to droop. We may perhaps find other men, like the deceased judge, not sparing time or money or effort, in urging on the cultivators of the soil to greater achievements, but we fear his loss will not be soon replaced.

SCIENCE AS WELL AS ART TO BE CULTIVATED.

The Board would urge upon the working members of the Society that their labors would be more beneficial to themselves and the community if they would study the science as well as the art which they have daily opportunities of cultivating. Botany presents a wide field, and Canadian Botany especially, is a rich and almost untouched mine. It is to be hoped that the visit of Sir William Hooker, which is to be expected, will give an impetus to its study, which will not die away when he leaves our shores.

FIRST REPORT OF THE COBourg HORTICULTURAL SOCIETY, 1859.

We are glad to find that a Horticultural Society has been established in this town. If horticulture be at all supported in the

same enlightened and enterprising spirit as agriculture has been for many years in this well cultivated and improving district, we shall confidently anticipate for Cobourg a first rate society in a few years.

"At this the first Annual Meeting of your Society, your Directors cannot help congratulating you on the complete success which has attended your first efforts in establishing an Horticultural Society. The prompt and energetic manner in which all classes joined in their endeavors to aid, both with the products of their gardens and their greenhouses, in making our first Exhibition succeed, fully convinced its originators and promoters, that it only required to be brought before them (the public) to be at once appreciated and supported.

At our first Exhibition, although we had to contend against a very late frost in June, which destroyed nearly all our spring flowers and seriously injured the early vegetables, still the Exhibition then made was creditable in the highest degree; in fact, in some varieties of flowers (Geraniums and Pansies,) we could well compare with Societies of many years' standing."

The following suggestions we recommend for general consideration:

"Your Directors would beg to draw the attention of yourselves and the public generally to the value of Horticultural Societies, inducing, as they do, persons to study the science of Horticulture, which, when fully understood and employed, will enable them to enjoy the profits and pleasures of their gardens without incurring any more expense than is now had by many without having the satisfaction which would then accrue; and in reference to this matter we would suggest that some steps should be taken either during the ensuing summer or in the course of the following winter to have a course of lectures delivered by competent persons, giving us useful, practical and scientific information on the culture of the different products of the garden, and which may easily be done if the energy exhibited this last year be again brought into action."

As we have resolved to assign a department to Horticulture in each number of this Journal, we earnestly request nurserymen, gardeners, both professional and amateur, and others interested in this refining and useful pursuit, to aid us by forwarding information and the results of their own experience. Articles however short will always be acceptable.

TROUBLES IN THE FRUIT GARDEN.

"EXPENSIVE NOTIONS."

No. II.

Some men having fallen into a beaten path of thought or labor, appear to be unable to leave it, or to think that other paths and other modes may be as desirable. In gardening, this obstinate attachment to old plans and methods has been as detrimental to its advancement as it has in other pursuits. Many a man, and for that matter also woman, in possession of a garden spot, would delight in making it produce the choicer as well as the commoner sorts of fruits, but they are deterred by the expense. If one should take up a book upon the subject, say the culture of the luscious foreign grape, he is at once appalled by the endless preparations required, even when the writer professes to give directions for its culture in the most inexpensive way. The authors of these books assume that this grape can be cultivated only in one way, and that so costly as to put it out of the power of those who are afflicted with that universally lamented but very general malady the "Augusta res domi." But I feel confident that the powers of the grape—its power of adaptation to an endless variety of circumstances—its power of drawing nutriment from apparently exhausted sources, and its power of maturing fruit under apparently adverse conditions, are exceedingly underrated. Indeed people in general, and horticulturists, seemed leagued to prevent the vine doing its best, and proving itself to be the most vigorous and productive of all plants, ever ready to yield its beautiful fruit and grateful juice under the most ordinary treatment and in the most inexpensive way. We purpose now to answer the question. "Can the foreign grape be raised cheaply?" We answer yes, and very cheaply, as will be seen from the succeeding observations:

1. And first for the size of the border, or ground to plant the vine in. Read almost any Grape Grower's Guide, and how appalling the preparations detailed as requisite. Allen's "Culture of the Grape," a very good work for those who have plenty of spare cash, on this point has the following:—"The border should be twenty feet wide for each set of vines—if thirty the better—and 2½ or 3 feet deep. If you

have but little room, you can manage to grow very fair grapes with 12 feet border." Now this involves great labor and expense, and it is not at all necessary. A border four feet wide is abundant for at least the first few years. It is very certain that the first prize given by the Royal Horticultural Society of England for grapes, was taken by those which were grown in a border not more than *two feet* wide. (See *Horticulturist* for October 1856.) The *London Gardener's Chronicle* says on this instance:—"Wonders will never cease. All the grape growers were beaten the other day by an interloper. Seldom have practical men received a more heavy fall. Great rules were violated. The wisdom of our forefathers was thrust aside like a piece of useless lumber. It is incredible though true. The large silver gilt medal, the highest offered for grapes, was awarded to Mr. Glendinning, of the Chiswick Nursery, for three dishes of grapes. The fortunate winner in the instance before us, built a glass shed or lean-to with a border and walk at the back. This back border is *two feet* wide, and in this the vines were planted. Again, fine grapes are borne by vines produced in pots. Buist says, that he has seen a vine in a pot of the Chasselas kind, with 29 bunches of fruit on it. Allen himself says, that "grapes in pots may be grown successfully, proper attention being paid to watering them. A vine in a 12 inch pot may mature from 5 to 10 bunches. A wooden box, or the half of a large keg is preferable, as the soil is less liable to dry and form into a lump; when this is the case, the water is very apt to run away by the sides of the pot, leaving the middle of the soil perfectly dry." And Judge Harrison of Toronto has, we are informed, practised, and prefers pot culture of the vine, with great satisfaction and good results. Hence, a narrow border will, at least for a time, answer every purpose. The labor and expense of preparation of it will be small, and you have this decided advantage that you can, if you choose, add to it when convenient. But now—

2. As to the formation of this border. Hear Allen again—"If the soil is a good loam, begin at one end and trench it; mark off ten feet the entire width, throw out the soil two feet." Harken to Charlton, *Cold Grapes*, p. 32—"Take out to the depth of *two feet* the whole of the upper surface, then dig a trench two feet wide and one foot deep, with one or more outlets for the water to escape all around the margin of the excavated space." Now why all this excavation? Is the sky so low where these

writers dwell that they must bury thus deep? Is there no deep, blue vault of heaven above them? Far easier to make the border on the surface—since the vine must have dry and firm footing. Chorlton says, "The grape vine is not so capricious in its food as is generally supposed, but a *dry bottom it must and will have.*" In this opinion every other writer on the grape coincides. What easier mode then to secure this drainage than by making the border on the level ground. Of course you must be guided by the position of your garden. It may have a slope, or it may be a level, but in any case, by the formation of the border on its surface you can secure, without fail, adequate drainage.

The materials of this border need by no means be as far fetched and as costly as is in general recommended. Suppose you build a grapeery of the following dimensions—(a small one indeed, but quite large enough to afford you ample and delightful occupation, and fruit in abundance for a family)—in middle 8 feet, in length 15 feet—for this the border required will be 15 x 16—cover this space with bones, old shoes, or old plaster, two or three inches, then a foot of the very coarsest manure you can get—cow and sheep droppings are excellent if mixed with it—and then a foot of sod from the roadside, or an old pasture, or if these be wanting, use your own soil. In this, after it has well settled, your grapes will grow finely, and if they should, as they most certainly will, find their way into the soil below, and into the subsoil below that again, unless you take measures to keep them to the surface, that is their business. Nor are they likely to suffer, for grape growers are just beginning to discover that the subsoil, even though a clayey one, is not one from which the roots shrink, or are likely to be injured by its damp. When we recollect that these roots are in rocky formations sent many feet down into the crevices, and there, amidst cold and moisture, remain without detriment to the vine, as is proven by the annual abundant yield, we need not be so apprehensive as many appear to be, of their descending into the common and not inimical soil in the garden. But then—

3. As to the structure. We have above stated the dimensions, 8 x 15, span roofed. The sill 6 x 6; studs 4½ feet; plate 3 x 4; rafters 6 feet, 1½ x 8. On the upright sides there will be at the bottom a foot board, leaving 3½ feet for glass. On the roof the sash bars will be a fixture, 4 ft. long, leaving 2 feet nearly, for a board, to be hung on hinges, and which may hereafter be replaced

by long sashes. Small as this house is, it will contain 12 vines, and will the second season almost certainly produce 50 lbs. weight; the third 100; the fourth 150; and so on until it yields 300 lbs. weight; as much as it ought ever to be allowed to give. Glimpses of the truth with regard to the vine appear to have been enjoyed by the writers above named, for Allen says:—"Experience convinces me that fine grapes may be grown in a house of quite small dimensions."—Most certainly they may, since in England they have often been grown in structures not much, if any, superior to good hot beds.

The last particular on which we shall have to remark, and a most important one is, the

4. Choice of varieties—and here there can be no hesitation, for the Black Hamburgh and the white Chasselas take the lead, and are far before others the ones with which a beginner should have to deal. I have obtained fine plants of these varieties from the excellent nursery of Mr. Leslie, and doubtless they can be obtained there still.

This vinery, built in a neat but plain and substantial style, would be far more satisfactory and scarcely more costly than what is called the Curate's vinery. This is simply a ditch covered with glass. But it would take five or six times as much glass to cover the number of vines as in the above, and would be much more inconveniently attended to. Mr. Roberts covered some old sand pits with old sashes, planted grapes on the edge of the pits, trained them under the glass, and without further trouble obtained good crops of fruit. If any thing more were needed to prove the inherent vigor, ease of adaptation to varying circumstances, readiness to repay even ordinary attention and culture of the noble vine, this may do it. There is indeed no reason why superior varieties should not be produced in every yard or garden in our large cities and towns. Planted there, they might be trained to advantage on the extensive spaces of blank brick wall, which are now an eye sore, at once ornamenting them by their beautiful foliage, and saving the foreigner the expense and bother of bringing to us what we might and should produce abundantly ourselves. CLERICS.

HINTS ON THE FLOWER GARDEN.

"How exquisitely sweet
This rich display of flowers,—
This airy wild of fragrance,
So lovely to the eye,
And to the sense so sweet!"

Any one having but a few square yards

only of spare ground, may find that sufficient to call forth his taste and ingenuity in laying it out to the best advantage. Every dead wall or unsightly object should be covered with monthly or other suitable roses, and various kinds of creepers, which through a large portion of the year impart an air of comfort and beauty to one's dwelling, and keep out of sight objects that would otherwise be disagreeable. Larger flowers, such as hollyhocks, sunflowers, &c., should be planted as in a back ground in gardens of any considerable space, either in clumps or singly. Flowers next in size should succeed, and followed in the foreground by the innumerable varieties of the smaller beauties, such as pansies, auriculas, polyanthus, &c. By this mode of planting each flower is distinctly seen; there should be no crowding, even in the smallest gardens, and care and taste are necessary to prevent the arrangements from being too stiff and formal. That system of laying out which most pleases the eye, and permits air and sunlight to act freely on the plants, should be adopted; and although general rules have been discovered and recognised by cultivators of taste; yet each individual should so modify them in their practical application, as best to meet the wants and peculiarities of his own case.

Not a moment should now be lost in completing all the arrangements of the flower garden, and the carrying out the various details. As annuals, which bloom and die in the same year, form a numerous and beautiful group, and give a distinctive character to the flower-garden, we will first direct our attention to them. On page 129 of the present volume, may be found a list of choice flowering annuals adapted for sowing in a hot-bed. These are delicate, and require considerable care in transplanting. China-Asters, Chrysanthemums, Marigolds, Persicarias, &c., will generally do well when sown in a warm, dry and suitably prepared border, as soon as the earth gets sufficiently warm and dry. But these and similar flowers, will bloom earlier if assisted in the first instance by glass. The ground should be well pulverized and raked fine for annuals, which will flourish in a light and friable soil. The seed should not be sown too thickly, and covered about half an inch with fine earth. The larger kinds, such as sweet-peas, lupins, &c., should be sown deeper, say an inch. In

order to get well developed specimens, the plants should be carefully thinned, so as to allow light and air freely to exercise their indispensable influence. Hardy annuals do not well bear transplanting, and should be allowed to remain where they are sown, taking care to have but a few of the larger kinds in one group. In dry weather, the plants must be watered moderately, carefully avoiding cold spring water. Rain water is the best, but water from a well should never be used without its having been exposed to the air and sun for a day or two. Sweet peas should be sown as early as the state of the ground and weather will admit. Make a circle round a strong stick, and plant the peas an inch deep; adding subsequently outer circles, to keep up a perpetual bloom. 'Ten-weeks' stock, Mignonette, Venus's Looking-glass, &c., are well adapted to ordinary gardens, and impart either scent or beauty.

The following are hardy annuals, requiring no assistance of artificial heat, and should be allowed to stand where they are sown:

- Adonis Flower*—Red and yellow.
- Candytuft*—Large, purple and white.
- Larkspur*—Double rose, white, double branched and blue.
- Lupins*—Yellow, white, scarlet, marbled, rose, large and small, blue.
- Sunflower*—Tall, double, and dwarf.
- Poppy*—Double striped, dwarf striped, double corn, and horned.
- Convolvulus*—Major, minor, striped, white, scarlet.
- Hawkweed*—Yellow, purple, red.
- Starry Scabius*.
- Saffron Flower*.
- Nasturtium*—Large and small.
- Tangier Pea*.
- Sweet Pea*—Purple, white, scarlet.
- Winged and Crowned Pea*.
- Nigella*—Blue, white, oriental, and curled.
- Lobel's Catchfly*—White and red.
- Pimpernel, Venus's Navel-wort*.
- Virginia Stock, Strawberry, Spinach*.
- Marigold*—Double orange, lemon-coloured, annual large.
- Mignonette*.
- Ten-weeks' Stock Gilliflower*—In varieties.
- Hearts' Ease, Snap-Drageon*.
- Persicarie, Clarksias*.
- Globe Thistle*.
- Amethystia*.
- Antirrhinums*.

The number of plants for bedding out, or to be grown in masses has greatly increased of late years. This mode of arranging flowers in the garden, by observing either regular or irregular figures, has when tastefully managed, a very pleasing effect.—

We can only glance at a few plants suitable for this purpose, and adapted to the climate of Canada.

Among the most showy of bedding-out plants are the Antirrhinums, or Snap-Drummers, the varieties of which are numerous, and the colors of the flowers often extremely brilliant. If sown early, they will blossom the same year. They thrive best in a rich sandy loam.

Fuchsias are in great variety, and are great ornaments either of the greenhouse or open garden. "They can be readily propagated by cuttings, in sand, with a mixture of peat; to grow the plants for a bloom all summer, they should be started in February, in the green-house, first in small pots, and shifted, when the roots completely fill it, into a mixture of fresh loam, peat-leaf mould from the woods, well rotted manure, and a little sand; mix thoroughly and break finely (not sifted,) with the spade or trowel. Give the roots good drainage, place them in the warmest part of the greenhouse, and water them frequently; as the warmth of summer approaches, and the greenhouse becomes empty of plants, place your Fuchsias in the most favored position, shading them with mat or cotton awning from the sun, after ten o'clock in the morning, which remove at four P. M., unless the sun is off sooner." With a gentle syringing every day, they will produce blossoms through the summer and autumn. In October, the watering must be gradually lessened, and by November only sufficient moisture is required to preserve vitality. They can then be readily stowed away, on a dry shelf, in an obscure part of the greenhouse.

Gaillardia Picta is a very ornamental bedding plant; it is perennial, but not hardy enough to stand our winter. It is propagated by cuttings. Its blossoms are very fine, continuing all the season; crimson edged with yellow. The old plants must be taken up in autumn.

Geraniums form a numerous and beautiful class of plants, whether in beds or in pots, and enliven the garden or balcony all summer. They are easily raised from cuttings, and if started in February, in the green-house, they will be fit for summer planting. The "*Flower of the day*," is a variety of scarlet *Geraniums* with silver-edged leaves, is a magnificent but scarce bedding plant. There are other varieties of great beauty and luxuriant foliage. The *Geranium-Lucia Rosea*, blooms abundantly in the open ground, and is altogether a distinct color among *geraniums*. "It is a gem in the flower garden, being

not only distinct, but superlatively beautiful, and the cultivation the same as in other varieties."

Lantana—"One of the ancient names of the *Laburnum*, which this resembles a little in foliage. This species are all greenhouse plants, but flower finely in the garden." They form small bushes, with pink, yellow, orange or changable heads of flowers; and are readily increased by cuttings.

Petunias are distinguished for a brilliant succession of flowers from early summer to the frosts of November. They are raised from seed sown in a hot-bed in March; afterwards pricked out into small pots, and when sufficiently strong, may be turned into the open ground by the end of May. The finer varieties are increased from cuttings, at the end of summer. They form a brilliant group for any garden.

Our space will only admit of bare reference to the *Pyrethrum*, or Double Fever-fen, whose white daisy-like flowers make it a favorite for ornamenting the garden.

The *Verbena*, flowering from June to November, is a great ornament, and admits of a great variety of shades. They are readily propagated by cuttings, and may be planted out in the open air the beginning of June. The *Portulacca*, *Escholtoria*, *Drummond*, *Phlox*, *Rocket*, *Larkspur*, *Ten-week*, *Stocks*, *Candy-Tufts*, and a great many others are hardy flowers, very various in color, and suitable for ornamental gardening. "The ladies will find it a very interesting study to learn the art of arranging the flowers of the garden; and such as have a correct taste for dress, will, probably, be the most expert scholars in this school."—(Breck.)

J. F.

Deterinary:

SPAYING MILCH Cows.—This somewhat novel practice, will not of course be adopted in country dairies, since in such the rearing of calves is a matter of importance, yet it remains to be seen how much good the practice will effect in large towns, in which cows are kept exclusively for the milk they yield. Levrat, a veterinarian of Lausanne, performed the operation on five cows in 1838, and he reports that "the removal of the ovaries causes a continuation of the secretion of the milk for several years, just as it was at the time of the operation. The quantity may even augment by one-third, and the quality is better."

Mr. Gamgee, an eminent Veterinary Surgeon of Edinburgh, calculates that to keep up a dairy of thirty good milkers, from 50 to 60 must be purchased annually, and this because, on an average, a cow is dry eight months after calving; and what with sickness and death, it is, he thinks, a fair calculation that to keep a dairy of thirty cows in milk, sixty must be annually purchased. Spaying avoids the loss by æstromania, (bullers), and by the custom of having dairy cows bulled when intended for the butcher. The spaying of cows is unquestionably, observes Mr. Gamgee, the safest method of avoiding such losses. A spayed cow yields milk about twice as long, hence twice as much as that given by a cow under ordinary circumstances. She fattens readily, laying on flesh from the time she is spayed, but very rapidly after she has ceased to give milk. There is no loss as by pregnant cows, and spaying is the only and sure means of cure for æstromania. It seems pretty certain that the milk of a spayed cow is richer than that of any other animal. Grandval and Maumene found in 1000 parts of the milk from cows under ordinary circumstances, from 66 to 80 parts of cheese and butter; and in 1000 parts of that from spayed cows, 101, or 117, or 150 parts. An analysis of 1000 parts of the milk of a cow before and after it was spayed in the Royal Veterinary College of Turin, gave the following results:

	Before.	After.
Water	864.40	855.50
Butter	42.20	50.10
Milk and Soluble Salts	52.10	37.80
Casein (curd) and unsoluble Salts. }	41.30	56.60

Domestic.

PICKLING AND SMOKING HAMS AND OTHER MEATS.—We use the same process for preserving both hams and beef. When cut up, the beef should lie a few days before this operation, rub carefully with fine salt, especially about the bone in the hams, and leave them to drain a few days on a plank; then pack them loosely in a barrel, and cover with a brine made as follows: Six gallons of water, nine pounds of salt, one quart of molasses, three pounds of brown

sugar, three ounces of saltpetre, and one ounce of saleratus. Boil the whole well, and skim, and when cold pour it on the meat, which should be entirely covered by it. This will make brine enough for about one hundred pounds. This is the celebrated "Knickerbocker pickle," recommended by the late Judge Buel, and we are satisfied of its excellence by its long trial. At the end of three weeks, take up the hams and re-pack them, and after lying in the brine as much longer, they are ready for smoking.

Hickory wood and coals make the best smoke. While caution is used that they are not too near the fire, they had better not freeze while being smoked. In this case the smoke only condenses on the surface and blackens it, but does not penetrate the meat. In fact, freezing at any time is of no benefit to the quality of hams or any other meat, but has a tendency to leave them dry. Smoke the hams to a light-chestnut brown, not to a black color. When well cured, the hams may be very conveniently and perfectly preserved for use, by surrounding each one with a loose bag made of close cotton cloth. This should be tied tightly about the strings of the ham, so that neither bugs nor flies can enter. Hang them from the rafters in a well ventilated garret, and usually they will escape both mould and insects, and improve by age for one or more years.

We have also kept hams by packing in fine salt. If it is dry, and kept in a dry place, it answers well. They will not absorb much more salt; but if damp, they may become perfectly saturated. We have also packed in clean, dry ashes, but the result was not very satisfactory.

We repeat the requisites for curing sound pork. Sweet, tight casks; plenty of pure salt, so that some shall remain undissolved; the meat to be cooled but not frozen, and kept at a moderate temperature, covered with a saturated brine.

Lard should be tried as soon as convenient. It must not lie in a close heap while warm, or the part about the kidneys will become tainted. In cutting it up for trying, remove all the lean. Use a very moderate heat, especially at first, and cook till the scraps turn of a light brown color and settle. It is then ready to be strained, and may be depended upon to keep perfectly.—*Homestead.*

Arts and Manufactures.

DEFECTS OF CALF-SKIN LEATHER.—We have heard of persons purchasing several pairs of boots at once, in order to lay some

of them away for long keeping, under the impression that leather when kept in a dry situation improved in quality by age, like oil cloth. Calf-skin leather, when made into boots, deteriorates rapidly. It is subject to a species of dry rot—*crenatacausis*; and in the course of three years it becomes as tender as a piece of brown paper. Dealers in boots and shoes experience a considerable loss from this cause when such articles are left on their hands for more than two years. This dry-rot in calf-skin boots first appears at the edge near the soles, in the form of a black glassy sweat, resembling varnish, and from thence it gradually proceeds until the whole leather becomes rotten. The application of grease rather accelerates than arrests the progress of this decay; such leather endures much longer when worn on the feet than when laid aside in a dry situation, but whether this decay is caused by the grease used by the curriers, or is some peculiarity in the skin, is not known. Cow-skin and kip leather do not seem to be subject to this rapid deterioration, but all kinds of calf-skin, even the very best French, is just as subject to it as the poorest qualities.—*Scientific American*.

Editorial Notices, &c.

COTSWOLD SHEEP.

A correspondent enquires, what is the origin and history of Cotswold sheep, and their principal characteristics?

It would occupy more space than we can conveniently spare at present, to go minutely into the above questions. The origin of breeds generally is more or less involved in obscurity. Certain it is, that the Cotswold sheep are among the oldest recorded native breeds of the British Islands, and that they derive their name from a tract of low calcareous hills, (Oolitic) in Gloucestershire. We find them mentioned as early as the beginning of the fifteenth century, and it is stated that certain of these sheep were, by permission of King Edward the Fourth, exported to Spain. At that period, and for two centuries afterwards, the Cotswold Hills formed broad, unenclosed, and bleak tracts of country, affording no natural shelter, but covered with a short sweet

herbage, similar to what is found on the Chalk Downs. During the present century these high grounds have been brought under a superior system of management, and cultivation and shelter have done much to increase the produce of the soil and to increase the number and improve the quality of the sheep.

The Cotswolds were formerly of greater bulk of body, coarser forms, and yielded a larger amount of wool than characterises them at present. Some seventy or eighty years ago they were crossed by other breeds, and afterwards by the New Leicesters, the effect was to diminish the bulk of body, and lessen the weight of the fleece, and to impart a greater delicacy of form and constitution, to an extent unsuited to the exposure of their native hills. For the last thirty or forty years the system of crossing has been in a great measure abandoned,—the breed has been improved from its own resources, more particularly in regard to its former qualities for bearing exposure, and yielding a heavy fleece, which, being now loose and long, adds to the appearance of their large proportions. They are without horns, and have white legs and faces, with a strong tuft of wool covering the forehead, more prominently in the male than in the female. The neck and fore-quarter are somewhat deficient when compared with the Leicester; the back is straight, body well ribbed up, with deep flanks, hind quarters square and full; the legs are clear, of moderate length and bone. They are hardy and active, and thrive on ordinary food. Their early maturity and disposition to fatten enable them to be brought to market at 12 to 15 months old at an average weight of 100 lbs.; at 2 years old they will weigh from 120 to 150 lbs. each. The fleece, which is closer upon the body than the Leicester, averages from 7 to 8 or 9 lbs. each. The staple is long, mellow to the hand, though somewhat coarse in quality. This breed seems, as far as it has been tried, well adapted to Canada, and we

have now quite a number possessing pure blood. To judge of the latter quality in a Cotswold, regard must be had to the before mentioned characteristics, and the respectability of the breeder or importer.

THE AMERICAN SHORT-HORN HERD BOOK.—We are indebted to Lewis F. Allen, of Buffalo, for a copy of the fourth volume of his "Herd Book," which we have noticed on former occasions, and the value of which is so well known to short-horn breeders as to require no additional comment from us. The volume is got up in the same style as the preceding ones, and contains nearly three thousand original pedigrees, with some good portraits of animals. The pedigrees of the bulls in this volume reach the 3622d—the third volume closing with the 2468th. The pedigrees of the cows and heifers are yet more numerous. Mr. Allen well deserves the thanks and support of short-horn breeders on this continent, for his enterprise in originating and continuing this work. There may be errors, which are very difficult to avoid in a work of this sort, especially at the commencement, when the pedigrees have to be rescued from an immense mass of confused and often conflicting documents; but breeders on this side of the Atlantic, are placed by Mr. Allen in a very different position to that in which they would be without this publication, when they would have no public medium through which to establish permanent pedigrees for their stock, except that of recording them in the English Herd Book, which would obviously be of much less general convenience, and would be considerably more expensive. This volume is, we believe, sold at Five Dollars, and is forwarded upon order, by Mr. Allen, from Buffalo.

BACK NUMBERS.—We are in want of the first six back numbers of the present year, especially Nos. 3 and 4, and will pay two cents each for them, on delivery at the office. Of course, we cannot pay by post

for single copies, as the postage would amount to three times as much as the sum, but parties having copies in good condition which they do not intend to preserve, would oblige by handing them to the Secretary of their society, to be forwarded by him in a parcel to this office, when we would remit the amount for them, or give credit for them on future orders.

We regret having been obliged, since 1st April, to send off orders without supplying the back numbers. We will supply the numbers wanting still, if we can get them in; otherwise we will return the proportionate amount of the subscription paid, or supply additional copies of the present year, to make up for the amount, at the reduced rate of subscription from 1st April, or we will give credit for the amount overpaid on next year's account.

After this date, we cannot supply any new orders for the back Nos. previous to that of 1st April. From 1st April to the end of the year, the subscription price is for single copies 37½ cents. Nine copies for three dollars.

OUR SUBSCRIPTION PREMIUMS.—We have been unable to make up our list of prizes for the present number. It will, if possible, appear in our next.

PRIZE REPORTS.—The reports from Societies being very numerous, as well as voluminous, require a considerable amount of time and work for their examination and comparison. The awards of prizes will be duly announced after they have been decided upon.

LEAP YEAR.—A Scotch statute of 1,228 reads as follows:—"It is statut and ordaint that during the reime of her maist blissit Majestie, ilk forth year, known as leap year, ilk maiden layde of baith high and low estait, shall hae liberty to bespeak ye man she likes; albyit, if he refuses to take hir to be his wif, he shall be mulcted in ye sum of ane poundis (£1) or less as his estait moi be, except and awis if he can mak it appear that he is betrothed to ane woman, that he then shall be free."

Market Intelligence.

TORONTO MARKETS.

TORONTO, April 13, 1860.

The market to-day was limited, and the supply of grain small.

FALL WHEAT—225 bushels sold at from \$1 20 a \$1 38 per bushel; the average for prime being \$1 35 per bushel.

SPRING WHEAT—55 bushels sold at from \$1 03 a \$1 06½ per bushel.

PEAS—175 bushels went off at from 60c a 63c.

OATS—125 bushels sold at from 36½c a 37½c.

BARLEY nominal at 63c a 66½c.

RYE 65c to 70c per bushel.

TIMOTHY SEED \$2 75 a \$3 50.

CLOVER \$5 a \$5 25.

HAY \$10 a \$18 per ton.

STRAW \$6 a \$9 per ton.

POTATOES 20c a 27c per bushel.

BUTTER—Fresh, 18c a 20c per lb.

EGGS plentiful, 8c a 10c per doz.

BEEF \$5 a \$6 per 100 lbs. on foot.

SHEEP \$5 a \$7 each.

CALVES \$4 a \$7 each.

PORK dull a \$6 per 100 lbs.

FOWLS 40c a 50c per pair.

TURNIPS \$1 a \$1.20 each.

FLOUR—Superfine No. 2, \$4 35 a \$4 40; superfine No. 1, \$4 65 a \$4 75; fancy \$5 10 a \$5 25; extra \$5 70 a \$5 75; double extra \$6 a \$6 25.

MONTREAL MARKETS.

MONTREAL, April 13.

FLOUR firm with more demand; No. 1 superfine \$5 15 a \$5 20; No. 2 superfine \$5; fancy \$5 50 a \$5 60; extra \$6.

WHEAT—Receipts small; Upper Canada spring would bring \$1 15 a \$1 18; ex-cars \$1 20 offered for May delivery.

PEAS—Good demand; sales 10,000 bushels for May delivery at 80c.

ASHES—Fair demand; pots \$6 10 a \$6 15; pearls \$6 40 a \$6 45.

NEW YORK MARKETS.

NEW YORK, April 13, 1860.

FLOUR—Receipts 835 barrels; market firm with fair demand; sales 15,000 barrels at \$5 32 a \$5 35 for superfine State; \$5 40 a \$5 50 for extra State; \$5 50 a \$5 35 for superfine Western; \$5 45 a \$5 75 for common to medium extra Western; \$6 a \$6 15 for inferior to good-shipping brands extra round hoop Ohio. Canadian flour is firm-

er; sales 1400 bbls. at \$5 60 a \$7 25 for extra. Rye flour is steady at \$3 65 a \$4 40.

GRAIN—Wheat—Receipts 1126 bushels; market heavy, and 1c a 2c lower; sales 12,000 bushels at \$1 20 for Milwaukee club; \$1 65 for white Michigan, and \$1 40 for red State. Rye firmer; sales 1500 bushels at 85c. Barley dull and heavy; no receipts. Corn—Market dull and declining; the sales are 13,000 bushels at 74c. delivered, for mixed western. Oats quiet, at 44c. a 45½c. for Western, Canadian and State.

PROVISIONS—The pork market is quiet; the sales are 900 bbls. at \$17 37 for old mess; \$17 62 a \$17 75 for new mess; \$13 for old prime, and \$14 06 a \$14 25 for new prime. Beef unchanged; sales 375 bbls. Lard is active, sales 600 bbls. at 10½c. a 11½c. Butter is in fair request at 11c. a 13c. for Ohio.

BUFFALO MARKETS.

BUFFALO, April 13.

WHEAT—is quiet. There appears to be more disposition on the part of holders to meet buyers at the figures of yesterday; but the latter held off, and there is evidently a difference of 2c. in their views. A sale of 4460 bushels prime white Indiana was made in the afternoon yesterday at \$1 45, and a lot of 1700 bushels Canada club changed hands this morning at \$1 11.

CORN—continues very quiet. We hear of no sales, and therefore resume our quotations of 60c. for car-load lots from track, and 64c. a 65c. for prime from store.

OATS—nominal; 34½c. a 35c. for Canadian from track.

BARLEY and RYE—dull and no sales.

PEAS—Market firm; sales 450 bbls at 60c. a 62½c.

PROVISIONS—dull, and no sales.

Advertisements.

IMPROVED SHORTHORNS.

THE HON. ADAM FERGUSSON, WOODHILL, WATERDOWN, P. O., will have Seven Thorough-bred D. rham Cows to calve in Spring. These cows are in calf to "ETHELBERT," bred by Samuel Thorne, Esq., and have a large portion of "DUCHESS" and "BATES" blood. They may be seen at any time at Woodhill, within a half hour's walk of Waterdown Station, G. W. R. R.

Orders for bull calves must be sent by the 1st of March. Full pedigrees will be furnished. Price of each calf \$60.

Four of the Cows will be sold at moderate prices.

WOODHILL, Jan. 2nd, 1860.

YONGE STREET SEED STORE AND FLOWER GARDEN,

Established 1836.

Fresh Garden, Field and Flower Seeds, for Spring sowing.

THE Subscriber begs to inform his friends and the public, that his stock of Fresh Seeds is now complete, and very extensive, embracing almost every sort of Seed that is adapted to the country.

The stock of Agricultural Seeds is large and well selected, and the vitality of each sort being fully tested, the genuineness of the seeds may be fully relied upon.

Comprising a large stock of:—Spring Wheat, Spring Tares, Tartar and Poland Oats of the most approved kinds; Field Peas, including Golden Vine, and other approved sorts, White and Black Eyed Marrow Fats; Barley, two and four-rowed; Imported Purple and Green Top Swedish Turnip, Imported White Globe do., Imported Yellow Aberdeen do., Imported Six-weeks or Stubble do., Imported Red Round, Red Globe and several other sorts of Turnips; Long Red and Yellow Globe Mangel Wurzel; Sugar Beet and Field Parsnip, Large White Belgian Carrot and Spring Rape; Long Orange, Red, Surrey, and Altringham Carrot; Timothy, Orchard, and English Rye Grasses; Red and White Dutch Clover; French Lucerne, Cow, and Hungarian Grasses, Alsike or Perennial Clover; Yellow and White Millet; Early Potatoes of the most approved sorts; Corn, 8 rowed Early-Canada, King Philip, Yellow Dutch, and several other sorts.

*Horticultural Books and Garden Tools,
Draining Tools, One Horse Ploughs, and
Cultivators of all kinds.*

The Subscriber has also a full and general assortment of all kinds of Garden Seeds suitable for the country, a catalogue of which, with directions for sowing seeds, can be had gratis.

Merchants and Agricultural Societies ordering seeds in bulk will be supplied at wholesale prices.

Complete assortment of Garden Seeds neatly put up in small papers, with directions for sowing, and sold by the box, containing 150 papers, at very moderate prices.

Twenty packages of Flower Seeds, choice sorts, will be sent free by post to any part of the province, to the address of any party remitting \$1, free of postage, or 25 packages, postage unpaid.

JAMES FLEMING,

Seedsman to the Ag'l As. of U. C.

Toronto, February, 1860.

6-t

SEEDS! SEEDS! SEEDS!

TORONTO SEED STORE!

Corner of Front St. and West Market Place.

THE Subscriber in returning his sincere thanks for the patronage so liberally extended to him for the past four years, since commencing the business, would now beg to direct the attention of his friends and the public, to his large and well assorted stock of

FRESH GARDEN, FIELD AND FLOWER SEEDS,

All of which have been procured with his usual well-known care and practical knowledge from parties in Europe and America, personally known to him; he would therefore venture to say that the quality of all his Seeds cannot be surpassed in this Country or anywhere else.

FARMERS and GARDENERS would do well to examine before purchasing elsewhere, for it is their interest particularly to procure the best of seed to be had; and **SPURIOUS SEEDS** are often offered by unscrupulous parties under pretended inducements, which, if depended on, may prove fatal to crops, on which purchasers depended for a living.

No seed is sold in his establishment without first being carefully tested.

Large supplies of all the leading varieties of the different kinds of seeds, most suitable to this climate, are constantly kept on hand.

Catalogues with full directions for sowing and raising vegetable and other seeds, may be had gratis, on application; and being a practical gardener of 19 years' experience, he will always feel happy to give all necessary information, personally, regarding the mode of cultivation, selection of varieties, &c., gratuitously to any of his customers.

For the convenience of those who wish to stock a small Garden with Vegetables and Flowers, but are unacquainted with the proper quantities for that purpose, he has collections ready put up.

Price of Collection of Garden Seeds, \$2.

“ “ Flower Seeds, 1.

J. A. SIMMERS,

Seedsman,

Corner of Front St. and West Market Place.
Toronto, March 12, 1860. 6-t

West Riding of York Agricultural Society.

THE SPRING SHOW of this Society will be held at WESTON, on Tuesday, 24th April. For particulars see bills.

ST. GEO. SCARLETT, Sec. & Treas.

Carlton West, March 28th, 1860. 7-2t

Five Splendid Strawberries.

HOOKER—Very productive; large, beautiful, and of unequalled quality.

WILSON'S ALBANY—Exceedingly productive; fine for market.

TRIOMPHE DE GAND—Immense size; splendid appearance, and *high flavor*.

PYRAMIDAL CHILIAN—Very handsome; productive, hardy, and *good flavor*.

LARGE EARLY SCARLET—The earliest; productive and *excellent*.

As it is impossible to secure all the excellencies of this most popular fruit in one variety, we offer the above as comprising, in five sorts, the various points desirable.

We again confidently *RECOMMEND* the *HOOKER*, as by far the best for family use, if only one sort is to be planted—combining a greater number of excellencies than any other variety.

All of the above have perfect flowers, and will produce excellent crops, if planted singly or together.

Order directly from the Nurseries, to be sure of the *genuine*—“The Hooker” originated on our grounds.

Money, at our risk.

PRICES—(Securely packed to be forwarded by express):

Per 100 plants of any of the above varieties,.....	\$2 00
“ 100 plants 20 of each variety,....	3 00
“ 500 plants 100 of each variety,...	7 50
“ 1000 plants of the Hooker.....	10 00

H. E. HOOKER & Co.

Commercial Nurseries,

March, 1860. Rochester, N.Y.

HUNGARIAN GRASS.

This valuable grass was introduced into this neighborhood three years since by our County Agricultural Society, and has given very great satisfaction to all who have tried it. Its ordinary yield is **FOUR TONS TO THE ACRE**, and in some cases **SIX TONS** have been cut. Cattle and all kinds of Stock are very fond of it, preferring it to Timothy. Its fattening qualities too are believed to be superior to those of any other known grass.

The Subscriber has obtained a quantity, and will send to any person making a post-paid application, sufficient to sow one-third of an acre for One Dollar, or One Bushel for Five Dollars.

All seed will be sent free of charge.

ARCHIBALD YOUNG,

Treasurer,

Lambton County Agr. Society

Sarnia, February 10, 1860.

SPRING FAIR.

TOWNSHIP OF GORE OF TORONTO AGRICULTURAL SOCIETY will hold their Spring Fair at **CLAIREVILLE**, on the Third Wednesday in April, 1860, and their Fall Fair at **MALTON**, on the Third Wednesday in October.

By order of the Board.

J. P. DELAHAYE,

President.

Gore of Toronto, March 19, 1860. 7-2t

AYRSHIRE CATTLE.

PATRICK R. WRIGHT, Esq., Cobourg, C. W., breeder of Ayrshire Cattle, Sheep, &c., has several young **BULLS** and **HEIFERS** for sale. His herd is well known as the best in Canada West, and his terms of sale are liberal.

Full Pedigree of all animals—U. C. Stock Register.

April 2, 1860.

7-6m

YONGE STREET SEED STORE.

CHOICE VEGETABLE & FLOWER SEEDS
FREE BY MAIL.

THIRTY SIX VARIETIES FOR TWO DOLLARS.

THE Subscriber, wishing to give parties who reside at a distance an opportunity to test the quality of his Seeds, will, on receipt of \$2, free of postage, send free to any Post Office in Canada, 24 Full Sized Papers of **VEGETABLE SEEDS**, many of them containing half an ounce of seed, and 12 Papers of **CHOICE FLOWER SEEDS**, with Descriptive Catalogue and Box included—the seeds to be of my own selection. None but the most useful and desirable varieties will be sent.

JAMES FLEMING.

Seedsman to the

Agricultural Association of U. C.

TORONTO, Jan., 1860.

The Agriculturist,

OR JOURNAL AND TRANSACTIONS OF THE BOARD OF AGRICULTURE OF UPPER CANADA,

Is published in Toronto on the 1st and 16th of each month.

Subscription—Half a dollar per annum for single copies; Eleven copies for Five Dollars; Twenty-four copies for Ten Dollars, &c.

Advertisements—Five cents per line each insert. Editors—Professor Buckland of University College Toronto, and Hugh C. Thomson, Secretary of the Board of Agriculture, Toronto, to whom all orders and remittances are to be addressed.

Printed by Thompson & Co., 77 King, Street East Toronto.

Not being now able to supply the first numbers of the current volume, the subscription price of the “Agriculturist” from 1st April to the end of the year, will be 37½ cents per copy; nine copies, three dollars.