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The Field.

Ventilators for Stacks and Ricks.

The practice of stacking hay and grain is far less general in Canada than either in the adjoining States or in England, owing, it is presumed, to the proportion of barn accommodation in the respective countries. Barns of sufficient extent to hold anything like the amount of grain crops raised on the farms, are very uncommon in the western and newly

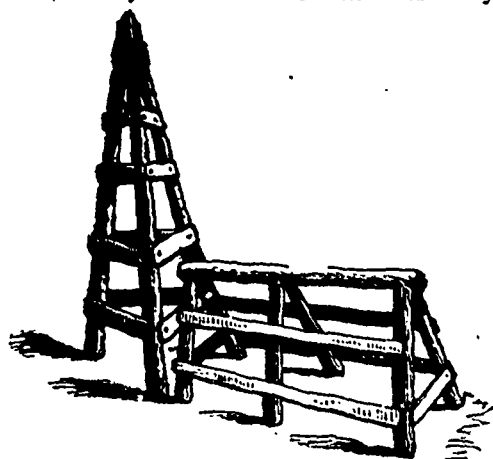


FIG. 1.

settled States of America; and in many sections of the country it is the universal practice to stack not only the hay cut either from meadows or prairies, but also the wheat, barley, oats, and other grain crops, and to trash them from the stack. The stacking is often very inefficiently done, and it has been our lot to see, year after year, a very large amount of grain more or less spoiled, after being safely harvested, and when all danger ought to have been over, by either heating or getting rotten in the stacks. In England the large amount of hay and grain cut, and the extremely wet and variable climate, render the task of securing the crop after harvesting one of considerable difficulty; but the care, skill, and appliances made available for the purpose are usually sufficient to overcome all these difficulties, and it is not often that loss is incurred in storing the produce of the earth after it has been gathered from the field. Occasionally, even in England, however, hay-stacks take fire, and grain is damaged in the stack. To diminish the risk from the heating, to which all collections of vegetable matter, especially when imperfectly dried, are subject, various contrivances have been adopted for securing a thorough ventilation in the stacks. Some of them are extremely simple as well as efficient; and as they may be found serviceable to Canadian farmers, we give a brief description and illustrations, which are taken from the *Farmer*

(Scottish), of ventilators used for stacking grain and hay in several parts of England and Scotland.

Fig. 1 represents one form of these ventilators, or *bosses*, as they are called in Scotland. It is constructed of three light poles, eight feet in length, usually the thinnings of a larch plantation, placed in a triangular form, and kept up and steady by means of short pieces of wood nailed upon them at regular intervals. The three poles are either tied together at the top, as represented in the figure, or have a wooden pin passed through them. When put in their proper position, the lower ends of the poles will be three feet apart from each other. Where the corn stack is built on a frame elevated on pillars, the ventilator is placed in the centre of the frame, and the air enters from underneath; but where the stack is built on the ground it is necessary to have a small trestle, two feet high, and long enough to reach to the outside of the stack, for the purpose of making an opening for admitting the air. No ventilator is required at the top, as the air passes out readily enough through the upper part of the stack. Fig. 1 shows the centre ventilator or boss, with the trestle placed in position previous to commencing building the stack. Sometimes two trestles are used, one on each side, in order to secure perfect ventilation.

Fig. 2 is another form of ventilator. In this case the upright poles are equidistant at top and bottom. This form of ventilator can be used, as in the other case, both with stacks built on frames or with such as are built on the ground, and trestles are also necessary in the latter case. Both forms of ventilators, when placed on frames elevated above the ground, should be attached to the frame by nailing one end of a stay to each leg and the other to the frame. We have experienced great advantage from the use of such ventilators, especially when the weather was not favourable to thorough drying, and with the help

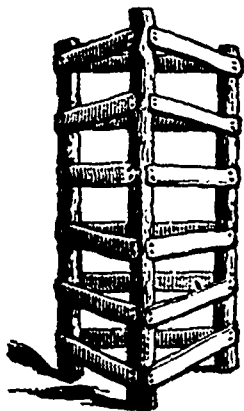


FIG. 2.

of these have stacked corn in a state which would have entirely prevented any attempt to save it without the help of these simple contrivances.

Another useful invention has lately been introduced into the old country, and appears to be very serviceable both in determining the condition of the interior of a hay-stack, and in affording the relief of additional ventilation when required. The inventor is Mr. E. Lyewood, a Hampshire farmer. In order that the contrivance may be understood, we have given the accompanying engraving (No. 3), which, with the subjoined description, will, we think, sufficiently explain the method of using this simple and efficient explorer and ventilator.

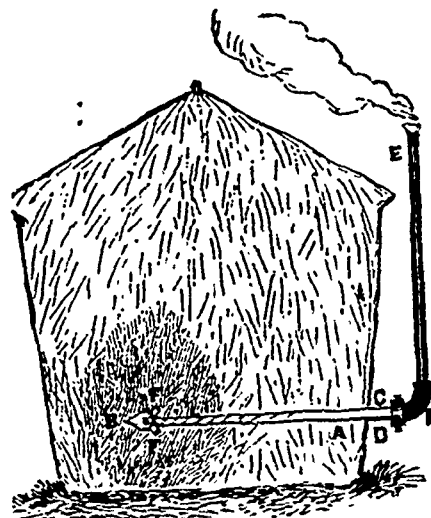


FIG. 3.

A wrought-iron tube (A) three inches in diameter, long enough to reach the centre of a stack, is perforated with holes about two-thirds the length, and furnished with a point (B) at one end, and a strong iron band (C) with lugs (D) at the other. This tube is driven horizontally into a heated rick with a mallet or beetle, and at once affords the means of ascertaining the temperature of the stack, which is done by passing a thermometer on a stick into the tube. When it is ascertained by this means that any part of a stack into which a tube is inserted is of too high a temperature, a vertical sheet-iron funnel (E) is attached to the neck of the tube, at once establishing a current of air from the centre of the rick to the atmosphere, and immediately removing the superfluous heat, without disturbing or damaging the contents of the rick in any way. At the back of the point (B) several small hooks (F) are placed, so that in drawing out the tube a sample is brought from the centre of the stack.

It should not be forgotten that ventilation for hay or grain, if we would preserve its good condition and quality, is perhaps even more requisite in the barn than in the rick.

Composition and Properties of the Hop.

The reader will have observed from remarks made in preceding papers on hop culture, that the value of the article depends very much on the kind raised, the character of the soil and climate, as well as careful pruning, drying, and preparing for market. On the deep and dry limestone soils of Kent and Surrey, rich in alkalis and phosphoric acid, the Farnham Whitebines and Goldings usually command from thirty to forty per cent better prices than the coarser varieties, such as Grapes, Colegates, and Jones's, commonly raised on the inferior clay lands of the Wealds of Kent and Sussex. This made a great difference to the planter when he was subjected, as was the case only a few years ago, to a heavy excise duty, fixed at so much a pound, irrespective of the quality, or commercial value of the article. The only mitigation of this inequality was, that the inferior hops would yield a larger average crop per acre on deeper land. As these facts involve considerations of much practical importance to hop growers in all parts of the world, we shall condense, for the benefit of our readers, some results of analyses of hops made several years since by the late Mr. J. C. Nesbit, of London, and Professor Way, the then consulting chemist of the Royal Agricultural Society, in whose Transactions full details are given.

In the subjoined table No. 1 is the analysis of four hills of hops of the Farnham Whitebine variety, grown in a calcareous soil in Surrey, rich in phosphoric acid. No. 2 represents the mineral constituents of three hills of the yellow Grape variety grown on the Wealden clay in Kent.

	No. 1 Farnham Whitebine			No. 2 Kent Yellow Grape		
	Hops	Leaves	Bine	Hops	Leaves	Bine
Per centage of ash on dry matter	9.90	16.33	5.00	15.80	25.11	5.10
Analysis of the ashes						
Silica	20.95	10.14	4.64	24.26	20.58	5.66
Chloride of Sodium	7.05	7.92	4.95	3.18	4.58	9.98
Chloride of Potassium	1.63		7.38	2.21		
Soda		0.42			2.29	2.32
Potash	24.50	12.48	18.62	18.61	5.13	12.97
Lime	13.56	41.46	29.59	23.75	32.28	17.39
Magnesia	3.62	1.9	1.1	0.13	0.24	1.61
Sulphuric Acid	5.27	4.29	2.63	4.16	3.66	4.14
Phosphoric Acid	9.94	2.02	0.22	3.26	0.95	5.14
Phosphate of Iron	7.26	2.95	0.51	6.79	0.54	2.05
Phosphate of Alumina						1.55
Carbonic Acid	2.61	16.34	23.51	3.36	21.25	24.18
Manganese				1.59		trace
	100.00	100.00	100.00	100.00	100.00	100.00

Professor Way gives the following results of analyses of two dried specimens of hops grown, No. 1 by Mr. Paine, of Farnham, Surrey; No. 2 by Mr. Eggar, of Bently, Hampshire; both being the Farnham Whitebine, and from a similar calcareous soil; the only difference being that No. 2 was gathered a week earlier than No. 1, and therefore not so fully ripe:

Per Centage of ash calculated on dry substance	No. 1 Farnham		No. 2 Bently	
	5.95		8.07	
Analyses of the ashes				
Silica		19.71		22.97
Chloride of Sodium		3.42		
Chloride of Potassium				5.45
Soda				
Potash		24.83		11.98
Lime		21.59		17.93
Magnesia		4.69		5.94
Peroxide of Iron		1.75		1.86
Sulphuric Acid		7.27		7.01
Phosphoric Acid		14.47		21.25
Carbonic Acid		2.17		5.44
		93.95		93.96

The following table exhibits the composition of pounds, removed by an acre of hops with leaves and bine, 1,200 hills, total growth when thoroughly dried, 2,240 lbs:

	Hops	Leaves	Bine
Silica	32.65	97.28	12.95
Chloride of sodium	1.29	13.98	3.40
Chloride of Potassium	1.29	9.96	19.90
Soda			
Potash	54.01	57.16	22.81
Lime	16.35	123.98	30.89
Magnesia	5.11	1.06	4.88
Peroxide of Iron	1.14	0.82	1.03
Sulphuric Acid	8.69	8.22	7.62
Phosphoric Acid	29.53	40.61	15.15
Carbonic Acid	3.9	52.40	15.41
	170.43	435.06	129.54

The above hops were carefully analyzed by Professor Way with a view to determine the amount of nitrogen carried off per acre by the crop, with results as follows: In the hops, 56.44 lbs; leaves, 49 lbs; bine 23.86 lbs. Total amount of nitrogen removed being 129.3 lbs, per acre, or nearly equal to that which is supplied by 1,000 lbs. of the best Peruvian guano.

The reader, by glancing at the foregoing tables, will see that the hop is probably the most exhausting crop to the soil that can enter into any system of cultivation. It would be so as a mere rotation crop, but as producing annually on the same land, and that often for a long term of years, we can readily understand why hop grounds imperatively require so constant and liberal a dressing of manure—the money value of which, in the best cultivated districts of England, would amount annually to eight or ten pounds sterling per acre. From the above analyses it will be apparent why it is that hops delight in a calcareous soil, since lime enters so largely into the composition of every part of the plant, as do also the alkalis, potash and soda, and particularly phosphoric acid. We remember seeing, some years since, a field of hops in Canada, a small portion of which had always been remarkable for producing a larger crop, of better quality, than the other parts, though it received little or no manure. The explanation we found, on investigation, to be, that the favoured spot was exceedingly rich in phosphate of lime, arising from the slow decomposition of human bones—the place having been an ancient Indian burial ground. The foregoing tables will also show the hop grower how important it is that the bines and leaves, after gathering the fruit, should not be allowed to run to waste, but in some way or other returned to the soil, from which during the previous season's growth they had extracted so large a quantity of plant food, particularly inorganic materials. The bines should therefore be cut into short lengths, and incorporated with the soil by ploughing or digging, or which is perhaps better, by putting them into yards to be trodden down with straw by cattle—the excrements of which would hasten fermentation, and both increase and enrich the mass of manure to be applied the ensuing season. The practice of burning the bines on the ground is objectionable, as the whole of the organic matter is dissipated, and therefore lost to the soil. Hop bines, when thoroughly dried by the sun, made into stacks, and protected from wet, make good fodder, and are much relished, particularly if salted, by cattle and sheep during winter. It should always be borne in mind, that even in soils the most naturally rich, successful hop culture requires an annual dressing, more or less, of suitable manure; good farm-yard dung, from a liberal feeding of animals, being generally the best adapted to the purpose. The occasional application of quick lime, ground bones, wood ashes, guano, &c., when farm-yard manure cannot be got in sufficient quantity, will, if judiciously applied, be attended by very beneficial results.

Although little or nothing has been done till of late years by analytical chemistry towards determining with accuracy the constituents of hops, the properties of three active ingredients have now been pretty well made out:—

1. *The volatile oil.*—Dried flowers of hops will yield from seven to nine per cent, by weight of this substance, according to their quality, which we have seen is much influenced by variety, soil, climate, &c. It is thought that this oil contributes largely to the well-known narcotic property of hops, but in precisely what way has not yet been determined. Hop pillows are often used with great comfort to the sick, inducing rest. It is said that George III. experienced much relief from this source during his protracted mental indisposition. It is this oil that gives to hops their peculiar and agreeable odour, and it being very volatile, they require to be closely packed in bags made of good compact linen, and stowed away in dry rooms, protected from atmospheric currents, and other causes that would injure them greatly. By proper attention to these precautions, hops may be kept several years; but with the greatest care their strength and value will inevitably diminish in proportion to their age.

2. *The aromatic resin.*—When fully ripe hops are carefully dried they yield, by rubbing, a fine yellow dust, equal to a sixth or seventh part of their entire weight. To this fine powder the name of *lupulin* has been given, and it is known in commerce as the "condition" of the hop, and consequently is the chief element that determines its market value. This powder consists of exceedingly minute grains or glands, of a bright yellow colour, and of a cellular texture, having a strong agreeable odour and bitter taste, and when taken internally they are aromatic, soothing and tonic. About one-half their weight consists of a transparent, aromatic resin, the properties

and action of which, though no doubt of great importance, have yet been but imperfectly determined.

3. *The bitter principle.*—In addition to the resin, lupulin contains a small amount of a volatile oil and tannin, and ten per cent. of a peculiar bitter principle, which gives flavour to beer, assists in regulating its fermentation, and forming its keeping quality. "Though," remarks Professor Johnston, "the specific action of each of the chemical principles contained in the hop flower has not been very well ascertained, the united action of all of them together is well known. The tinctures and extracts of hops which we use in medicine, and introduce into our beers, contain the all, so that all the virtues of the hop, in whichever of the ingredients they reside, are present in them, in a greater or less degree. Hence, well hopped beer is aromatic, tonic, soothing, tranquillising, and in a slight degree narcotic, sedative, and provocative of sleep. The hop also aids in clarifying malt liquors, arrests the fermentation before all the sugar is converted into alcohol, and thus enables them to be kept without turning sour."

Barley Culture.

To the Editor of THE CANADA FARMER:

SIR,—The farmers in this section, and in fact over the whole of Canada, have of late years turned their attention very much to the cultivation of barley, and that crop has been so far advantageous, as to have checked the exhausting drain upon our arable land caused by the excessive growth of wheat. Of late years there has been a great breadth of barley grown throughout the country, and it has been a better paying crop than wheat. I know of only two varieties of barley grown in this country;—the ordinary long-bodied, and the two-rowed barley. The roots of the wheat plant penetrate deeply into the soil, whereas those of the barley depend chiefly upon the soil near the surface for their sustenance.

Thus we see that barley requires a shallow, rich and mellow seed-bed. The best and most common position in our rotation for barley is after roots. The surface of root-ground is rich and mellow, and if the roots have in the preceding year been properly attended to, is clean for the deposit of clover seeds. I believe that in most seasons, with a moderate supply of rain, seeding down with barley will give a stronger and more healthy plant of clover than if it be sowed on fall wheat.

In strong lands, barley often yields well on a wheat stubble, which should be ploughed narrow and deep in the fall, and more lightly if left till spring, and should always be pressed firm.

And here let me point out the great mistake of broad ploughing, thus turning our furrow slice completely on its face. It seems to be the object of many farmers to rush through as much ploughing as possible in a given time. Now, if they gain time in the actual amount of ploughing got over, it is to the detriment of their land and crops. Let them remember, that one acre well ploughed is far better than two which have been stirred over. Examine closely a field in which each furrow slice has been turned flat upon its face; let it be exposed alternately to the action of the sun and rain, and see (especially if it be a clay) how baked and hard it will have become. That ploughing is lost, and there is a worse seed-bed than if the stubble had been simply cultivated.

When a furrow slice is set up and pressed firm as it should be, not only in sod but in stubbles, the angles on each side of the apex should be equal, and every ridge should be of an exact height. Out of every 100 acres ploughed in this country, eighty of them are ploughed too flat.

If the land be set up thus, not only is there a natural drain under and between each slice, but when the harrows pass across them they cover the seed thoroughly, and of a uniform depth.

Seeds, especially peas, when sown broadcast cannot be covered so thoroughly, on a flat ploughing, as where there is a series of regular and high ridges from which to draw the soil with the harrows. Although root land is generally the most suitable for a barley crop, yet if it be too rich, I should prefer to sow spring wheat, which, throwing down a deeper root, is able better to stand the extra coarseness of straw, the usual tendency of all plants in a rich soil.

Barley, to thrive, must receive no checks; it is a weak plant, and if it be once checked, especially by dry frosts, will never recover itself thoroughly. This

year, barley sown on the clay has in many places rotted in the ground, the result of a continuance of cold and wet weather.

The wireworm frequently affects barley very seriously. But if, when the leaf first shows a yellowish hue, it be top-dressed with unleached ashes and thoroughly rolled, that pest will be safely removed. Select plump and clean seed; and, as in every other kind of grain—get your seed off a different variety of soil from your own.

AN OLD COUNTRY MAN.

Paris, 8th June, 1867.

Plaster of Paris as a Fertilizer.

We have received the following communication, from John Moffat, of Blenheim:—"Would you inform me, through the CANADA FARMER, what you think of Paris Plaster, and what effect it has upon the soil? for, in the Township of Blenheim, especially in the north part of it, there has yet been comparatively little or no plaster sown; and if the old saying is true, that it makes rich fathers but poor sons, then I for one do not wish to commence."

The plaster obtained at Paris, and other places on the Grand River, is of very good quality. How it would act as a manure on the soils of Blenheim, we could only hazard a probable opinion, apart from observation and experience. Plaster is well known among practical farmers in many parts of Canada, and of the United States, to be an exceedingly cheap and efficient fertilizer. In some localities, however, its action is not so manifest, and in others it is nil. The latter, however, must be regarded as exceptional; for experience shows that over large areas of this continent the application of plaster is attended with more or less benefit. Plaster being composed of lime and sulphuric acid (sulphate of lime), substances that enter into the growth of farm crops and animals, any soil naturally deficient in this important substance, must of course have it added artificially, to render such soil in any high degree productive. The rationale of the action of lime, in agriculture, whether carbonate or sulphate, is, in some respects, yet involved in obscurity; to remove which, much patient experiment and observation has to be made, both by practice and science. We should not wait for full scientific explanations, which in so progressive an art as agriculture can seldom be obtained, before we apply substances which, *prima facie*, appear adapted to manuring purposes; and we would therefore advise our correspondent, and other readers in Blenheim, to give Plaster a fair trial. In two or three years, at most, they will be able to form a satisfactory opinion for their future guidance, by carefully noticing the character of each season, the condition of the land and its previous treatment, with such other particulars as experience in farming will suggest. With these precautions, we shall be prepared to hear of favorable results.

The idea that plaster has a strong and peculiar tendency to exhaust the land to which it is applied, arises from an imperfect view of the subject. In soils naturally deficient in sulphate of lime, the adding of that material will of course impart greater vigor to the growing crop, which, being heavier, a larger portion of the other ingredients of plant food, both organic and inorganic, will be extracted from the soil, which thus becomes just so much *minus* of them. In this way, lime, whether in the form of sulphate or carbonate, may be said to exhaust the soil; for it should always be kept in mind that the larger the produce, the more the soil becomes diminished in the amount of the different substances of plant food which it contains. If a hundred-weight of plaster per acre enable the farmer to grow many hundred pounds more of clover, peas, Indian corn, potatoes, &c., as is not uncommon, it is obvious that by a frequent repeating of this course, the soil must, sooner or later, cease to respond with the same liberal returns. The fault or evil is not in the plaster, which does faithfully its duty, but in the ignorance or niggardliness of the cultivator, who refuses to do his part, by restoring, in the shape of manure, some portion, at least, of those substances which the plaster has been the instrument of enabling the heavy crops to extract from the soil. We may also state that lime not only supplies, directly, a necessary portion of the food of all cultivated crops, but that it acts in many other ways beneficially, some of which science and experiment have not yet fully explained,—mechanically as regards the soil, and chemically too, as regards both soil and plant.

How to Grow Clover Seed.

F. P. M. wishes to be informed when it is the right time to cut clover to secure a good crop of seed, and the best method of saving it. I will tell my way.

I cut my first crop as soon as it is in full bloom, as it makes better hay than if left longer, and also gives the seed crop a chance to commence growing sooner; for, mind you, "a good crop of seed" often depends upon how early the first crop is taken off.

Let the crop stand till the heads are all, or nearly all, brown, and the stocks have commenced to dry.

I am aware that some of the seed may be beaten out by storms and lost, if left to get dead ripe, but the loss is but small in comparison to the amount of seed that will go through the machine unthreshed, if cut before it is nearly all ripe.

When ripe, I take my "Kirby" mower, put on the platform, and with a boy to drive, and knives sharp, we start. As the machine cuts it, I rake it back on the platform till there is a good fork full, and then rake it off the same as a bundle of wheat, and so on round the field. The next time around, rake off the bunches at the same places as the first time, and so on till the field is done.

If it is likely to rain, draw it immediately, as the seed will take no hurt if the straw is ripe when cut, and there might be some loss if the seed gets wet, as the bunches might have to be turned to dry them, which would shell off some of the seed.

In drawing, drive close to the rows of bunches, pitching on a bunch at a time.

By following this plan, I am able to save my clover seed with but very little loss; but if mown, and then raked and bunched, or the heads picked with a clover "picker," there is a great waste; for, in the former case, a great deal of seed is beaten off, and, in the latter, a great many heads are left unpicked. But, in cutting with a machine, we can graduate the height of the cut according to the height of the clover, thereby saving nearly every head.

The time to thresh is in cold frosty weather, in the winter, as the straw is not so tough, and it is a much easier matter for the machine to save all the seed than it would if threshed in damp weather.

The clover machines in this vicinity thresh the straw, as a wheat machine does wheat straw, and deliver the clean seed in a bag. Sometimes it has to be run through a fanning mill to fit it for market.

The remarks at the head of this article refer to the small kinds of clover. If the mammoth clover is raised, of course no crop can be taken off for hay, but the crop can be pastured off till midsummer, and then allowed to grow up to seed. In all other respects, it is served the same as the smaller clover.

It must be borne in mind that taking a crop of clover seed draws heavily from the soil, and we must act accordingly by sowing plaster in the spring, and, if possible, top-dressing the land the fall previous with good fine manure "spread evenly."

Following these directions, F. P. M. ought to raise "a good crop of seed."—*Correspondence of Country Gentleman.*

A Good Hay-Rigging.

A CORRESPONDENT of the *Country Gentleman* gives the following directions for constructing a serviceable hay-rigging:—

"Allow me to describe the best hay-rigging I ever saw, and on which I have hauled 5,000 pounds of hay. It was constructed as follows, and made of the best white oak:

Two pieces four by four, and sixteen feet long, are placed on the axle and bolster, in the position that the sills of a wagon bed would occupy. Crossing these, and secured to them by suitable bolts, are four pieces four by four, or four deep and three thick, and eight feet long, one at each end; the others between the wheels, and placed so as to clear them. Near the ends of these cross-pieces are mortices, into which eight posts are tenoned, which are three by three square, and of a proper height to make the frame clear the back wheels.

On the top of these posts, and secured by mortices and tenons, is a frame same length as the sills, made of pieces three by three square, the ends secured by suitable irons, to prevent the standards from breaking the tenons.

Four standards, about eight feet long, one in each corner, and two shorter over, one on each side, secured at their bottom ends by suitable irons, fastened to the sills, and resting against the rail, are used. Curved pieces of wood or iron attached to the sill and frame, keep the hay from coming in contact with the wheels, and a few boards answer for a bottom. This rigging is easily loaded and unloaded."

Best Time to Cut Grass.

In making hay it is important to consider that grasses and other hay-herbage consist for the most part of sub-perennial species, many of which produce their seeds and then die out, but not being allowed to seed, their root-stalks will be perennial. It is, then, of great consequence that grass never be allowed to ripen, or indeed nearly ripen, seed, before being cut for hay, because by so doing the aftermath is much injured on the one hand, while the resulting hay crop will be more woody and less nutritious on the other; and besides, the seeds become wasted, and if carried to the arable leave behind a colony of what, there, are weeds.

We know it is thought that over-ripe grass adds to the bulk of the rick, but when we consider that as the seeds ripen the lower leaves wither and decay, it is certain the increase is, if not altogether doubtful, yet much less than is generally supposed.

Our own experience confirms us in the view that hay made when the rye-grasses are in full flower is the best in quality, and gives quite as great a yield as that cut several days later. In determining this point, we have adopted the following guide:—When the grass torn away at a node gives full evidence of the formation of saccharine matter in the young white base of the torn-off portion it is fit to cut. A short time before this it will be rather bitter than otherwise, and a short time afterwards it will consist of unflavored woody fibre. Should there be any doubt on this point, we would urge our readers to repeat an experiment which we have repeatedly performed, viz., that of testing the specific gravity of an infusion of a given weight of hay; this can be done by the saccharometer in the same manner as a brewer tests the amount of "extract" from malt, and whether we are testing single grasses or their compounds in the rick we shall find that the higher the specific gravity of the sample the greater the amount of feeding matter—"proof"—and the more valuable the produce.

Of course, however timely cut, if there be much wet it will injure the sample, which will lose its extractive matter; but in timely cut, well-made hay the extractive will be in proportion to its quality.—*Gardener's Chronicle.*

SALT AS A MANURE FOR MANGOLDS.—A paper has recently been published in the *Journal of the Royal Society of England* by Professor Voelcker, detailing the result of certain experiments to determine the effect of potash salt and common salt as a manure for mangolds. The conclusion drawn from these experiments is that common salt especially is a valuable fertilizer for this crop, increasing considerably the weight of the mangolds in every case in which it was applied. Professor Voelcker found that "three cwts. of salt per acre gave an increase of five tons eight lbs. of clean mangolds; four cwts., an increase of five tons three cwts. fifty-two lbs.; and eight cwts. of salt, an increase of eight tons fourteen cwts. twenty lbs. per acre." The practice of some farmers in England has been to apply this manure previous to sowing the seed; but Dr. Voelcker did not apply it till after the plants had been hoed and singled, that is, on the 1st of July. It was applied, of course, as a top-dressing. We would recommend an experimental trial to Canadian farmers.

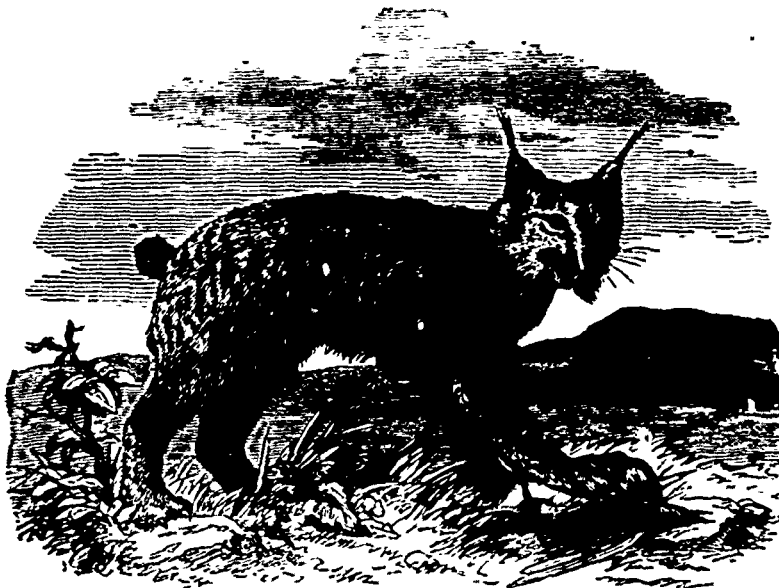
THINNING TURNIPS.—The most common mistakes made in the thinning of the crop are, first, in not commencing to single till the plants have attained a considerable size, and second, in not singling them so regularly that the plants left are at equal distances. When the plants have leaves which measure 1 inch across singling should commence, the person overseeing the workers being strict, so that the plants are singled at equal distances, and that only one is left. There have been various experiments in the cultivation of the Swede to ascertain the most suitable distance between the plants. It has been repeatedly shown that when the conditions were favorable, Swedes singled at the distance of fourteen inches produced a heavier weight of bulbs than where the plants were ten, or where they were twelve inches apart; the greatest distance yielding the heaviest crops. But as all the conditions cannot be usually secured, it is advisable to regulate the distance between the plants so as to suit the several conditions which influence the growth of the turnips. Singling by hand is always advisable where the plants are weak, sickly, and irregular, either owing to the surface of the drills being rough, the ravages of the turnip-fly, or from other causes. The plants of the Swedish variety are more liable to be injured by singling with the hoe than either yellows or whites; and some farmers prefer to single the Swedes by hand. The plants thus sustain no check from the operation of singling, and grow more vigorously than where the plants have been disturbed by the hoe.—*North British Agriculturist.*

Canadian Natural History.

Lynx Shot in the City of Hamilton.

We have received from Mr. David Chambers—Taxidermist, Hamilton, a photograph of a full-grown lynx shot in that city recently, together with an account of the animal now so rarely seen in the settled portions of the country. The accompanying illustration is a faithful copy by our artist of the admirable photograph taken from the specimen by Mr. John Cox, of the Photographic Art Gallery, Hamilton. The following is Mr. Chambers' account.—

On the 5th of April last, at nine o'clock in the morning, a Canada lynx was shot by Mr. Ambrose, in the garden of Mr. Prondfoot, situated between John and Hughson Streets, Hamilton. It fell into my hands, and I have stuffed it, and send you a photograph of it. Last winter a report was spread abroad that the tracks of a bear had been seen by many persons on the "mountain." It is now pretty clear that these same bruin's tracks were made by the lynx. When hung up, the animal measured four feet eight inches from fore paw to heel, and the width or spread of foot was six inches. It was very poor and thin of flesh, but in every respect a splendid specimen for a taxidermist or naturalist to display his talent on. It is a male, and I have no doubt was travelling in



search of a mate. Some little boys told me they believed they saw it wandering near the bay that same morning, previous to being shot. I have lived in Hamilton just twenty-five years, and followed bird-stuffing all my life. I stuffed a lynx twelve years ago that weighed thirty-eight pounds, but still that was no larger than this. The present specimen is very light, but possessed of great muscular power. He measures twenty-one inches high and three feet long.

Bird Gossip.

To the Editor of THE CANADA FARMER

SIR,—In the January number of the CANADA FARMER there is an article on the American Bluebird, which on the whole appears to me to be very accurate; but I do not think the bird in question ever remains throughout the winter in any part of Canada. The life-like illustration which accompanies the description suggests certain experiences of my own, which may not be without points of interest to the general reader, Josh Billings to the contrary notwithstanding.

In the spring of 1864 a pair of bluebirds raised a family inside of the weather-boarding of my house, a knob-hole in the siding favoring this arrangement.

The house stands in the middle of the orchard. That season the caterpillars proved a sore scourge to the orchards. They despoiled every green thing. I would have risked a lawsuit, had it been necessary, to protect the bluebirds. I attempted to form some calculation as to the number of caterpillars destroyed by a pair of bluebirds in a single day, while rearing their young. I forget my figures, but the conclusion I arrived at was that the young bluebirds did nothing but gormandize from morning till night. In due time the young ones reached maturity, and after a long continuance of patient fluttering to show them the way, accompanied by a great deal of twittering, coaxing and indescribable queer diplomatic wheedling, the parent birds succeeded in inducing the young ones to trust their untried wings on the seemingly treacherous atmosphere. Tennyson makes a sad blunder when he describes the young bird as teasing its mother to be allowed to "fly away" before its wings are grown. The reverse of this is the truth. By the way, I had long since formed the opinion that every true poet must perforce, and without exception, be a keen observer of natural phenomena. I must have erred. Any one who has observed the tactics of human parents to induce their infant to take the first two steps *without a hold*, may readily fancy how it is with the flying parents in such cases. Scarcely were the bluebirds gone when a pair of wrens took possession of the vacated tenement.

are, as anything but satisfactory. At this critical juncture I resolved to interfere. I sympathized with the bluebirds a good deal, but they were a shy, aristocratic set, who never admitted me to any degree of intimacy,—never entered their nest while aware that I was looking on: to the wrens, on the other hand, my presence caused no embarrassment, and I have fancied the little lady would invite me to step into the nursery, were such a visit compatible with our relative dimensions. I placed a piece of wire across the hole, thereby shutting Bobbie's door in his face; setting possession against vested rights. It was hard, but we live in a world of hardships and compromises, none being wholly exempt. The first tenants made the best of their altered position by peering in upon the privacy of the wrens in a manner which cannot be too severely condemned. They shortly afterwards left. When the wren family left the nest I removed the wire. Next spring the bluebirds returned to their old quarters, and held them in peace throughout the summer, the wrens failing to take possession during the interregnum. Last year the bluebirds raised another family in the forepart of the summer, and, strangely enough, sitted on one of the stormiest days of the entire summer; returning in about a fortnight to find the wrens in possession. The old scene was re-enacted, resulting in interference on my part. This spring, before the snows were wholly gone, the bluebirds returned and examined their old nest, but had not commenced to re-build up to this date.

I commenced intending to speak a good word for the bluebird, but the seductive nature of the subject has led me beyond my intended limits—a common excuse. I think the study of Ornithology would have a humanizing effect on the young, and tend to counteract the disposition of most boys to shoot everything that flies or runs. Might it not be introduced with advantage into our common schools?

BEN BEARCOLT.

WYOMING, April 30. 1867.

NOTE BY ED. C. F.—We are much obliged to our correspondent for the above sprightly letter, and wish there were more of our readers who cultivated the same sympathy with nature, and the same interest in the habits of the little creatures whom God has created to enliven the abodes of human beings in the present world.

The Dairy.

The New York Cheese Factories.

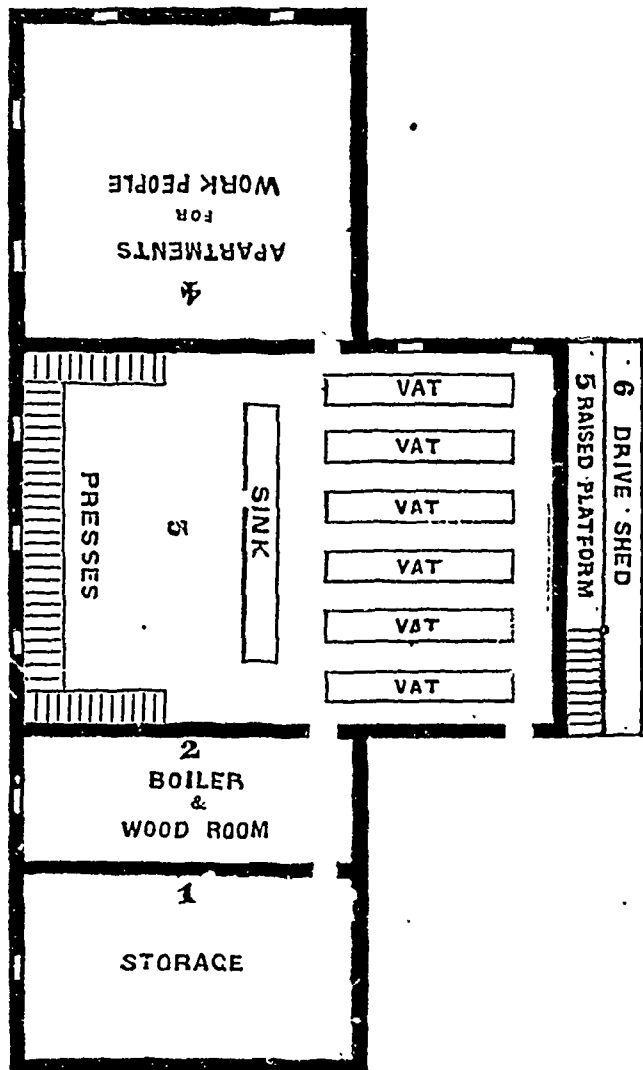
HAVING recently visited a number of Cheese Factories in Oneida and Herkimer Counties, New York, a region destined to be for ever memorable as the birth-place of the cheese factory system, we propose to make note of a few things picked up in the course of our travels and observations, with the hope of thereby promoting the dairy interests of Canada. The first thing that strikes a stranger who essays to collect information about the cheese business in the United States, is the magnitude of that business. Its proportions are truly mammoth, and considering that it is hardly ten years since the idea of associated dairying was first broached by the late Mr. Jesse Williams, of Rome, N.Y., the present proportions of the factory system are truly wonderful. Though it is, perhaps, nine years since the germ of this business was planted in the experimental dairy of the individual just named, yet for three or four years no general interest was awakened in the matter, so that the cheese factory business may be said to be the growth of some five years only. Yet, in the State of New York alone, there are now upwards of five hundred factories in operation, each manufacturing the milk of from 200 to 1000 cows. The system has been introduced quite extensively into the Eastern, Middle, and Western States. Ohio is largely engaged in the business,

Great were their rejoicings over their acquisition. They were the happiest little pair on God's green footstool. The lazy little things did nothing but sing, working only short spells at a time. Their song was all of hope and bright anticipations. I understood it (of course), every word of it. The selfish, confirmed grumbler, who believes the world is in its dotage, and about to go out like a burned-out candle from mere senile imbecility, ought to have seen this pair of wrens. To them the world was as fresh and young as when Adam first led Eve to view her own fair face in the nearest spring. But there was trouble in store for them. On the eleventh day after sitting, Blue Bobbie and wife returned to the old homestead; the young ones hovering at hand, but apparently not caring to cross the old threshold. Dire was Bobbie's indignation at finding the little intruders in his shantie. He said some severe things, probably about the rights of hospitality—the laws of ejection, etc. The wrens looked very crest-fallen. What surprised me was that they did not dive and hide as I had seen them a score of times on the appearance of a hawk or blue-jay. Neither did Blue Bob strike at them with wing or bill, but perched on a branch over the wrens, he would swell and ruffle his feathers in a menacing manner. The wrens uttered a low apologetic chirr-chirr, which was received as apologies generally

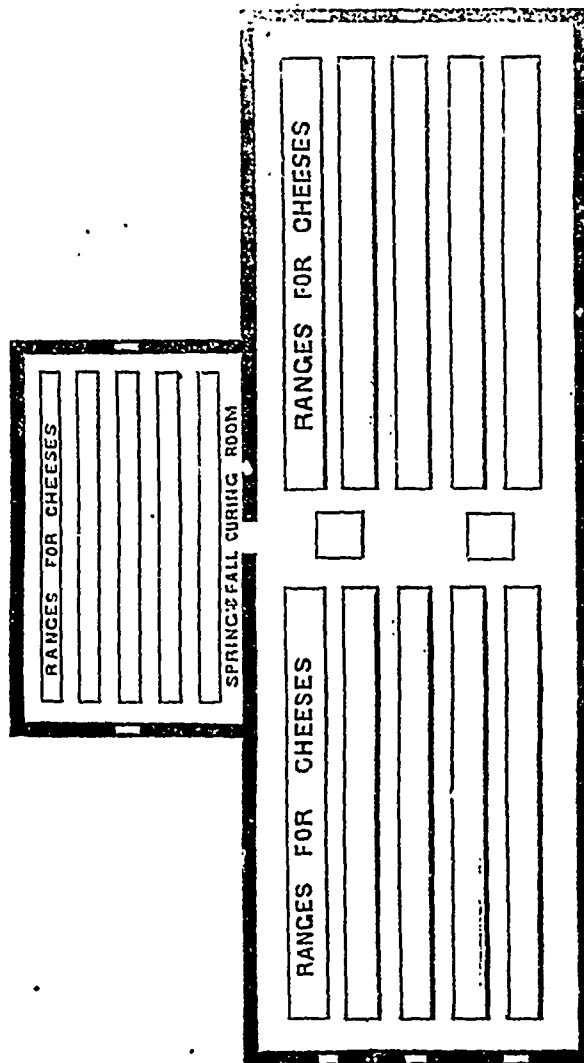
Even in Virginia, Kentucky, and other Southern States, there are factories to be found. It is thought that fully a thousand of these establishments are being erected in various parts of this continent the present season. Indeed, so rapidly are cheese factories multiplying, that fears are entertained by some lest the

argument for larger consumption of cheese, alleges we do not know on what authority, that good cheese is cheaper and more nutritious than meat. Whatever success may attend the effort to persuade Brother Jonathan into this view of the subject, sure we are that John Bull, with all his fondness for cheese, will

with the advantage all on our side. It will be well to avoid planting factories too thickly in any one locality; but there is as yet no cause to fear their becoming too numerous, taking the country as a whole. It is said there are about fifty in course of erection, the present season, in various parts of Cana-



Ground Floor Plan of Cheese Factory.

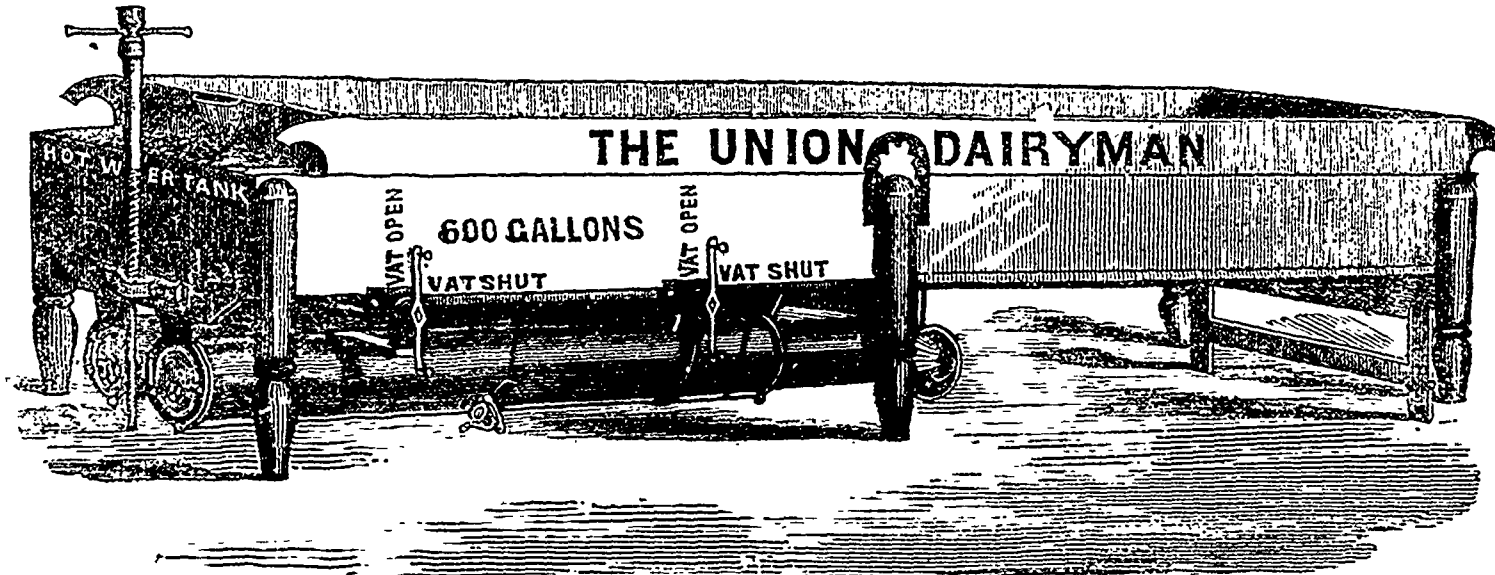


Second Storey Plan of Cheese Factory.

production of cheese may come to exceed the demands of the market, and the capacity of consumers. To allay these fears, the Secretary of the American Dairymen's Association, in his preface to the last Annual Report of that body, urges the production of as high a quality of cheese as possible, so as to induce the more general use of this article of diet; and as an

never permit it to usurp the place held in his affections by "the roast beef of Old England." In this country, there is no reason for alarm at present lest cheese factories should become too numerous. We do not yet produce anything like enough for home consumption, and when we do, we can compete with American dairymen in the British and other markets,

da, and there is no good reason why they should not all turn out successful and remunerative institutions. As to external appearance and internal fitting up, the factories we visited were pretty much alike. For the sake of water supply, a most important item, they are located in valleys and beside small springs, creeks, or running streams of some sort. A cool



spring rising in an adjacent hill, at a sufficient height to be conducted in pipes to the vats, and to flow with some force, is desiderated. Such springs abound in the New York dairy region, and every factory we visited has one. No architectural beauty is lavished upon these buildings. Indeed they are, generally speaking, huge and rather unsightly structures, distinguishing instead of ornamenting the landscape. This need not be the case. Without any particular addition to their cost, they might be made as ornamental as they are conspicuous. The accompanying diagrams will give some idea of the internal arrangements. Size of building, say 101 feet by 32 feet; wing, 10 feet by 21 feet, three stories in height. On the ground floor are No. 1. Storage Room; No. 2. Boiler and Wood Room; No. 3. Work Room, with presses and vats; No. 4. Apartments for work people; No. 5. Raised Platform, where the milk is weighed and distributed to the vats; No. 6. Outer Drive Shed for delivering milk. On the second floor there are simply ranges or racks on which the cheeses are placed for curing, with two trap doors in the centre for taking up and letting down the cheeses. Over the wing is a room for spring and fall curing in which arrangements must be made for artificial warmth, by means of stoves or otherwise. The third floor is similar to the second. This plan is of a large size, but its proportions may be reduced as desired, while the arrangement on the ground floor may be very much dictated by considerations of taste and convenience.

The vat in most common use is that known as "The Union Dairyman," of which we herewith present an engraving. It is made both with and without the fire chambers underneath. Where a boiler is in use for generating steam, which is the plan most in vogue, the fire chambers are, of course, unnecessary. Many factories, however, and all private dairies, depend on the self-heating apparatus in connection with the vat. The one represented contains a warm water distributor, for the equalization of the heat in all parts of the milk vat. Shortly after lighting the fire in the heaters, the water, taking up the heat from the cylinders, passes in gentle currents around the sides to the top of the milk vat, imparting to the milk that quality of warmth so essential to the coagulating process. Another point in this vat, and one of the greatest practical importance, is the manner of turning off the heat from the milk to the tank at will. By a single motion of the hand the heat is transferred to the tank, and when it is remembered that the milk requires heating first to 80 degrees, and afterwards to 160 degrees and upwards, the great advantage of this apparatus with its reserved heat, becomes apparent, over those old and defective methods, of building the fire twice, and extinguishing or removing it twice in every day's manufacture of cheese. This vat is, we believe, manufactured in Canada—at Norwichester and Ingersoll, and can readily be obtained by intending cheese-makers at much lower prices than by sending to the other side of the lines for it. There is another vat, known as the "Oneida Vat," somewhat similar in principle, but it is, we believe, more largely used in private dairies than in the cheese factories.

Without now detailing the entire process of cheese-making according to the factory method, we may state that various labour-saving contrivances, and improvements of detail, have been introduced of late, some of which may be new and useful to such of our readers as are engaged in this business, or purpose entering into it. In one of the factories we visited—that located at Fairfield, Herkimer Co., and on the whole, perhaps, the complete set that came under our inspection,—the latest and best methods are in use, and we may just enumerate them:—

1. Movable hose to let in the spring water around the vats, instead of iron pipes or wooden tubes.

2. Steam pipes underneath the vats, fixed in such a manner as to admit of the vats being canted without unscrewing and detaching the pipes.

3. The sink for draining the whey out of the curds, placed several feet below the level of the floor on which the vats stand, by means of which the curds and whey are run out of the vats instead of being lifted out by hand—a plan that saves much labour.

4. A simple contrivance, by which the milk is let out of the bottom of the weighing can, thereby obviating the necessity for lifting and tipping.

5. It may be mentioned as a decided improvement not met with by us at any other establishment, that at Fairfield Factory each patron has his separate hog pen, with the appendage of a meal-tub, so that instead of the hogs being swilled with pure whey, more solid food is given along with it.

The use of a large two-handed agitator we found to prevail at all the factories we visited. At a certain stage of the curdling process this implement dispenses with stooping over the vat, and saves much labour.

At Dr. Wight's factory, four miles from Utica, we noticed two features not observed elsewhere. The first was a very simple but effective contrivance for agitating the surface of the milk so as to prevent cream from rising. A light, wooden overshot water-wheel is hung just outside the factory, opposite where the vats are placed, and connected by very simple gearing with a frame of thin slats which floats on the top of the milk. The water wheel is turned by the spring which supplies the factory, and a gentle agitation kept up most effectively. This contrivance is of especial value through the night, when the milk cannot be stirred by hand. A second improvement observed at this factory was the absence of hog pens. They are an unmitigated nuisance in connection with cheese factories, and Dr. Wight has wisely abolished them. The whey is either teamed away by the patrons of the establishment, to be fed at home, or it is given to the calves. We saw a fine lot of calves in a pasture adjacent to Dr. Wight's factory, and, judging from their appearance, they do extremely well upon a mixed diet of grass and whey. On enquiry, we were told that they soon learn to take to the whey, and seem, after a time, to like it very well. We may add that the proprietor of this factory himself keeps 70 cows, and adopts partially, with the best results, the system of soiling.

We must here pause for the present, reserving some additional observations until our next issue.

CORRECTION.—In the letter from Mr. Davies on Canadian butter, published in the number for June 1st, by a typographical error the difference in the price of the fine quality of the Brockville butter over ordinary Upper Canada make is stated as fifteen cents in the hundred weight; it should have been fifteen shillings sterling.

CRAMAHE AND HALDIMAND CHEESE FACTORY.—A new cheese factory has been put up this season by Niles, Jackson, and Dewey, on Lot thirty-five, concession A, in the Township Cramahe, with a 500 gallon vat, calculated to work up the milk of from 200 to 500 cows. The company has secured for their manager the services of Mr. Thomson, an experienced cheese manufacturer from the State of New York, and hope to turn out a first class article of cheese that will be both profitable to themselves and satisfactory to their customers.

ANOTHER NEW CHEESE FACTORY. We are informed by Mr. W. Riddell that, besides the cheese factory of John Wade, Esq., Hamilton Gardens, which has been in successful operation for the last two years, there is a new one just going into operation in the rear of this Township, (Hamilton). It is built on Lot No. twenty-eight, in the seventh Concession, and has been erected and is owned by James Benson, Esq., Deputy Reeve of the Township, and others. The buildings at present erected are sufficient for the milk of one hundred and fifty cows, and are so constructed that they can be easily enlarged to be available for double that number, should the owners receive liberal support and encouragement, and the factory turn out as profitable as is expected.

"A VALUABLE CRUMMIE."—We have to report an instance of fertility in our neighborhood. Crummie is the property of Mr. Wm. Bogg, Prestwick. Her first calving was on March 10th, 1866, her last on 10th January, 1867; the produce during the ten months amounted to no fewer than 399½ lbs. of butter, besides supplying the family with cream. The feeding consisted of ½ bean meal morning and evening, turnips, green kale, cabbage, and hay. She was put on an imperial acre of grass, which, owing to the drought of summer suffered considerably. The total receipts reached the handsome sum of £40—£23 for butter and £17 for milk. It should also be stated that in addition the calf had its mother's milk for a fortnight. Are there any more cows of the same calibre in Ayrshire?—*Ayrshire Express*

Stock Department.

More about Fast Trotters.

To the Editor of THE CANADA FARMER:

SIR,—Knowing the general proclivities that people in Canada have, in common with their neighbours over the line, for fast trotters, I quite expected my letter to raise a hornet's nest about my ears, and was therefore much pleased to find that your correspondent, "Y. Z.," has taken up the subject in such a gentle and temperate manner.

"Y. Z." argues as if *fine trotting* and *fast trotting* were the same thing; whereas they are very different qualities indeed. When he says that a stud horse should trot "square and lofty," and even a Clydesdale should possess these qualities in a certain measure, I perfectly agree with him; but when he maintains that it is a recommendation to the horse if he can trot a mile in three minutes, this is quite another matter. The Yorkshire breeder of carriage horses takes the greatest pains in the world to produce *fine* trotters, knowing the enormous prices they will fetch, but he does not breed *fast* trotters, and many a butcher's pony in London could give the "go by" to all the *fine* trotters that ever stepped in Hyde Park.

That high muscular development is not the cause of fast trotting, is evident enough I should think from this fact, that the English thorough-bred is the worst horse for trotting purposes. That, on the other hand, high trotting qualities can go joined with all the deficiencies I named in my last letter, may be as clearly seen in the famous Frisian trotters, for instance, who possess these defects, nearly all in a very conspicuous degree, and who are not only exceedingly fast trotters, but with them this quality is in a great measure natural and hereditary. The best breed of horses in the world, therefore, is the least fit to trot fast; whereas one of the worst breeds makes very fast if not the very fastest trotters in the world. In presence of these facts I must still adhere to my opinion, that *very fast trotting is no recommendation to any but a wager horse*; and that it would materially contribute to the improvement of horses in Canada, if Canadian farmers and gentlemen would get fonder of *fine* trotters, as appreciated in England, and would give up their love of *fast* trotters, as doted upon by our neighbours. X.

On the other side of the same question a correspondent has sent us the following:

To the Editor of THE CANADA FARMER:

SIR,—Having seen in THE CANADA FARMER of the 15th May, the letter of your correspondent "X," respecting trotting horses, I was so astonished at his doctrine that I felt very much inclined to give my views on the subject of the qualities of the trotting horse. However, I felt certain that some one perhaps more experienced, and having a better appreciation of the good qualities of the trotting horse than your correspondent "X," would deal with the subject more generously. I since have had the pleasure and satisfaction of reading in your issue of the 1st June the letter of "Y. Z.," in whose views I entirely concur.

I cannot believe it essentially necessary to a farmer that his horse should be slower than his neighbour's. on the contrary, if he has that pride which is usually found among men of his class, and which of right belongs to the true horseman, he would rather wish to equal if not to be before his neighbour in this as well as any other worthy object of competition. It is an established fact which admits of no doubt, and so far as I know has no exception, that fast trotting horses are, *par excellence*, slow walkers, and are just as well fitted to perform the farmer's work in the plough or harrow as another horse that would slouch along the road either in harness or under the saddle, to the discomfort, and, I should feel, were it my case, discredit of his owner.

To show that fast trotting horses are not lacking in muscle, as "X" very erroneously thinks, I will give an instance which came under my especial notice. I have a mare that has been frequently driven a mile in three minutes, and when in Quebec, her native place, a man was carting in hay for me with his own

horse, a large, powerful-looking animal. One load his horse could not draw up the hill to my barn, and I had him taken out of the shafts and my own mare put in, and she brought the load home without any difficulty. I led her myself, and stood by and counted the bundles as they were thrown off, and they numbered seventy, the usual and required weight of each being sixteen pounds. This mare is out of a French Canadian, by an imported horse, I believe; stands fifteen hands, and is now twelve years old, and last winter, with very imperfect training, did her mile on the ice in 2 min. 45 sec. SONRIS.

NOTE BY ED. C. F.—Without presuming to decide on the main question at issue, we cannot refrain from observing that if, as our correspondent states, fast trotters are invariably slow walkers, then such animals are indeed not the kind the farmer needs; for there is no pace which would, we think, be so desirable in a farm horse as a good walk—a quality to which sufficient attention has not hitherto been paid in this country. Our correspondent has surely made a mistake.

Judging Horses at Exhibitions—A Reply.

To the Editor of THE CANADA FARMER:

SIR,—In your issue of the 15th May, I find a letter from a correspondent on judging horses at our Exhibitions. Your correspondent appears to find great fault with the judges at our County Shows, and also with those who appoint them, and speaks somewhat disparagingly of farmers generally. Being myself both farmer and horse-breeder, as well as horse fancier, and also a member of the committee to appoint judges for our Township Show, I feel it my duty to reply.

Allow me, in the first place, to state that I have no personal acquaintance with Mr. Hardy, the writer of the letter, and wish to deal only with the statements and opinions he expresses. Now, with regard to the suggestions he makes about the points first to be examined, and the manner in which it should be done, and the great importance as points for special notice of foot, head, neck, eyes, and ears, I fully agree with him, but I cannot refrain from expressing my conviction that there are plenty of intelligent farmers who know all this equally as well as some of our horse dealers, whom Mr. Hardy seems to think the best qualified judges. Mr. Hardy thinks that we should select men as judges who would not show the least partiality under any consideration. In this I also agree with him. But if such men cannot be found in the farming community, I appeal to the common sense of your readers, if they can be more easily found amongst the horse traders of the land. He has placed horse dealers at the head of the list of those whom he thinks proper persons to fill the important position of judges at our shows. But in this I differ from him very much. I even discard the very idea of allowing them to occupy that position at all. I have attended too many exhibitions where the judges were composed altogether of men of this class, and have seen too many instances of unblushing partiality in awarding prizes to horses owned by men of their own order, which bore no comparison to the beautiful animals exhibited by farmers. I have also another great objection to horse dealers acting in the capacity of judges; and that is, I have generally found them to be carried away by the trotting qualities of a horse, no matter what his form, size, or colour may be. It would be rather troublesome at our County and Township shows to carry out the suggestion he makes, about having horses brought on the ground covered up in such manner as he proposes; yet I would strongly condemn the custom, too prevalent, of bringing horses on the ground, prancing under the fear of a yard or two of buckskin. I would rather see them brought before the judges as gently as possible, and let them stand until the judges have examined all their points. Then let them move gently; the horse having good points will have an easy, graceful movement, though perhaps not so fast as others that may be inferior in form. Great speed is only a secondary consideration in any horse, excepting those intended for the race course. I am well aware that horse dealers like to buy a horse that can trot fast, because, by mere sight of whiplash, aided by tight lines, they can give him a stiff unnatural carriage, pleasing only to the eyes of persons of perverted taste. But when horses so trained pass into the hands of owners who will treat them humanely, they lose all fear of their driver, and with it their artificial carriage. W. JACKSON.

Walpole, May 22nd, 1867.

Walking Horses.

The best gait a horse ever had for every-day use is a good walk. It is a gait that not one in ten possesses. Colts are not trained to walk in all the Eastern States. Young America wants more speed. Kentucky has more good walking horses than any other State, for there horse-back travelling has long been in the fashion for men and women over a country where muddy roads, at some seasons, rendered any other gait impossible, and so horses have been bred for the saddle and trained to a walking gait. This is also the case in all the Western States, and might have been so in New England, when our grandmothers rode to meeting on a pillion behind our grandfathers. But one-horse waggons have put horse-back riding out of fashion, and now a good walking horse is more rare than one that can trot a mile in 2:40.

At the Springfield (Mass.) Horse Show of 1860, the writer was one of a committee to award prizes to the two best walking horses. Out of seventeen entered, the committee found but one which was considered a first-rate walker. This was a Morrill mare, which walked five miles an hour with ease. Two others were fair walkers, and the others knew no gait that could be called walking. At the New York State Fair the same state of facts was again developed.

A letter from Wisconsin says:—"I think horses trained to walk fast would be a greater benefit to farmers in general than fast trotters, as almost all of his work has to be done with a walk. I once knew a man in Massachusetts who, before the railroads were built, kept from two to four teams at work on the road, and never allowed them to trot at all, and made the distance in quicker time than his neighbors, who made their horses trot at every convenient place. He said that when a horse commenced to walk after a trot, he walked much slower than his common gait if kept on a walk, and thereby lost more than he gained." Will farmers think of this, and pay more attention to walking horses?—Solon Robinson.

SIX LAMBS AT A BIRTH.—An Oxford Down ewe, the property of Mr. Pennington, Westfield, Rugby, died in lambing. There were in her six lambs, three alive (all died in removal from the ewe), one recently dead, and two evidently dead for some period, being in an advanced state of decomposition. The ram was of Gloucester breed. Mr. Blackstock, bailiff to Mr. Pennington, can give any further information if needed.—E. C. in *The Field*.

THE ELASTIC HORSE SHOE CUSHION.—Amongst other useful articles now made of India Rubber is a cushion for putting between a horse's hoof and the shoe. It is for sale by O. B. Gray, Broadway, New York, at \$1 American currency per pair. Those who have tried this contrivance speak very highly of it. It cures corns and tender feet; prevents balling up in winter; prevents picking up stones, and breaks the concussion when the animal is driven over pavements and hard roads.

A FAT COW.—The London *Free Press* says an extraordinary fat cow was slaughtered recently in London, and as the carcass developed some remarkable results, we give the particulars for the benefit of our agricultural readers. The animal was a Durham grade. She weighed, when killed, 1,950 lbs. Messrs. C. Trebilcock and John Santo purchased her for \$140, and her carcass gave the unbecoming quantity of 340 lbs. of rough tallow! This amount is said to be larger than ever before taken from any animal.

Veterinary Department.

Endemic Diseases.

AGRICULTURISTS and veterinarians are alike ignorant of the peculiar conditions of the soil, which give rise to particular disorders in the stock fed on it. Certain lands are notably healthy for all stock; whilst, on the other hand, soils perhaps not very dissimilar in appearance, and even repose on the same geological strata, are notoriously liable to develop particular diseases.

Some of these endemic disorders, that is in popular phraseology, disorders of particular localities, are now tolerably well understood. We can comprehend why the horses in Derbyshire and where the water supply is rich in lime salts, are liable to calcareous concretions or balls lodging in their bowels. We can

understand readily how the steep ascents and descents of our own romantic town, and the prominent tips and heels with which our horses are shod, should render them so liable to lameness. Amongst sheep grazed on flooded meadows, springy ground, or wet, undrained retentive soils, sheep-rot occurs. We have now pining away a score of four-year old Welsh wethers that were bought last autumn from one of the highest mountains in Wales—from sound upland healthy pastures, one would have thought. But amongst the mountain valleys there are boggy places and springs, which, in summer are tolerably dry, afford often a rich, tempting bite, and shelter thousands of the fluke-worm in some of its early transitional stages. In some such dangerous spots, these wethers have fully half a year ago picked up the bile-loving parasite; their livers are now enlarged, softened, and loaded with flakes, flesh is being lost, digestion is deranged, and diarrhoea established. When sheep are thus rotten, little can be done in the way of relief. When noticed early, dry, nutritive food, with a little salt, will retard the progress of the malady, and enable the sheep to be made fit for the butcher.

In the neighbourhood of woods and plantations, where rough, coarse grass abounds, young cattle and sheep, especially when kept out late in the autumn, are apt to pick up some of the lower transitional forms of the threadworm. Hence is induced that form of bronchial irritation and cough generally known as hoose. Dry food, linseed cake, a few doses of oil of turpentine and limewater, and the inhalation of sulphurous acid vapour are the appropriate remedies.

Where the pastures are rich, the management liberal, the cows in the prime of life and good milkers, puerperal apoplexy or milk fever, as explained last week, is apt to occur. Congestion of the brain and nervous centres is here induced by blood being retained within the system, instead of being converted, as it ought to be, into milk. Laxatives, or rationally regulated diet, and milking before calving, are the suitable preventions.

But although the occurrence of these and some other endemic disorders of animals is now tolerably well understood, yet there are others which spread throughout particular localities in a provokingly inexplicable manner. Observation and experience indicate certain farms, or even certain fields, which are liable to particular maladies; but neither chemistry, geology, botany, nor veterinary medicine is yet competent satisfactorily to explain the faulty conditions on which such local disorders depend. Thus on some of the poorer clay soils on the flats, on some of the sour lands of Somersetshire, throughout some of the clay iron ore districts of Scotland, young stock cannot profitably be reared. So soon as they are turned out to graze, they scour, lose flesh and strength, and are with difficulty kept alive. Whether this depends upon the imperfect nutrition afforded by the crops raised on such poor lands, or the deficiency, for example, of phosphates or of potash, or on the presence in the soil, and thence in the food, of some acid or other deleterious matters, is as yet unknown. Grazings thus notably liable to produce diarrhoea are often greatly improved by being ploughed up, manured, limed, and well cultivated for several years.

Some farms enjoy an unenviable notoriety for the production of red-water. The poorer class of soils appear to furnish the chief proportion of such cases. At this season of the year, shortly after the cattle are turned on the pastures, the urine is noticed to be high coloured, and, unless the patient is attended to, more and more blood is lost through the kidneys, and it soon dies exhausted. Red-water is generally complicated with derangement and constipation of the bowels, and hence the early administration of a dose or two of physic, with some stimulants, will usually arrest the further progress of the disorder.

Here and there throughout the country are localities, and even particular grazings, where it is unsafe to place in-calf cows or heifers even for a few days. At almost any period of gestation, slipping or abortion is speedily induced. The mishap occurs tolerably regularly in all seasons. Even the hay from such lands exerts the same injurious influence on pregnant animals. Many such fields have been examined by competent botanists, without any deleterious plants being discovered; the water supply is found to be abundant and wholesome; and as yet no adequate clue is found to the constant recurrence of this troublesome accident.

The liability of certain farms to black-leg, splenic apoplexy, and jaundice, is equally inexplicable in the present state of our agricultural and veterinary knowledge. By sad experience we discover that certain fields are unsafe for particular sorts of stock, but we cannot satisfactorily trace out the particular causes which interfere with health. On many of these subjects careful intelligent observation is greatly wanted.—*North British Agriculturist*.

The Apiary.

Notes for Bee-Keepers.

To the Editor of THE CANADA FARMER.

SIR.—So far we have had a fine season for bees, and in all probability 1867 will be numbered among the best. Though the honey harvest was late in commencing, yet it has been continuous; one class of flowers following another rapidly, and the busy bee, as if fearful that one drop of nectar would run to waste, has been unusually busy. Reports of swarms issuing reached me before the 10th of June. Mr. A. H. Grant, of Clinton, C. W., writes me that he had a swarm issue on the 6th of June. As we are now, in many sections, in the height of the swarming season, and as stocks are likely to cast liberally, many bee-keepers, especially new beginners, will endeavor to keep every little squad that may have a queen, thinking to multiply their colonies beyond their more intelligent and experienced neighbors, who content themselves with simply doubling their strong stocks, and strengthening their weaker ones. But a cold winter, or a bad season next year, will cool their enthusiasm, having lost their little squads, and many of their second swarms, they will find that their more "slow and sure" neighbors are the more successful in the end, and are rejoicing in the strength of their colonies rather than in the number of them. As the Italian bees are now acknowledged by all to be superior to the native bee, bee-keepers would do well to avail themselves of the first opportunity to Italianize their apiaries; for as surely as movable comb hives will take the place of common hives, so will the Italian take the place of the common bee. The impression among many bee-keepers that stocks should be Italianized early in the season in order to do well, is quite a mistake; no matter when you Italianize, they will do well; whenever a queen can be got, then is the time to introduce her; early or late in the season, it is all the same. The moth should now be looked after and destroyed; though with the use of frame hives it ceases to be a formidable enemy. Success, however, in bee-keeping depends much upon proper attention, such as only the intelligent bee-keeper is prepared to give, to little thin, and he who spends a few minutes every day in studying the nature and habits of these wonderful insects, may rest assured that time so spent is well employed.

J. H. THOMAS.

BROOKLIN, C. W.

Italian and Native Bees.

Mr W. A. Flanders, in his circular to which we drew attention in a recent issue, observes:

The following are some of the characteristic differences between the Italians and natives:

1st The Italians are seldom troubled by the moth family, as their superior strength is used to protect their domicile.

2nd. They collect a larger supply of honey in a given season, working earlier in the morning and later at night than the natives, and rarely suspend their operations for wind, heat or moderate showers.

3rd. They are much more prolific, swarm earlier and more frequently, and cover and protect their brood combs from the cold and the moths after swarming, consequently they are not often injured by excessive swarming like the blacks.

4th. In examining for the Queen, she is easily sought out by her contrasting colours, which is not the case with the native Queen and black bees.

5th It is often necessary to open the "bee hive" for various manipulations, and in doing so the Italians adhere to the brood and combs, and are not easily shaken off upon the ground or the operator, as is the case with the blacks.

6th They frequent and gather honey from flowers that the natives do not, such as the seed crop of red clover, &c., &c.

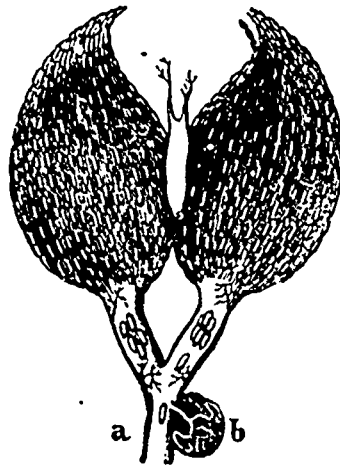
7th. They resist the impressions of heat and cold to a remarkable degree over the natives.

8th. They are unlike the blacks, in that they seldom remain idle, clustered on the outside of the hive, but work constantly from early morn till night.

9th. Their beautiful colours and graceful forms render them desirable objects to persons of taste and curiosity.

Breeding Functions of the Queen Bee.

Soon after the queen has mated with the drone, the ovaries, or egg-bags, become enlarged, the abdomen appears full and round, and laying commences. The motions of the queen in laying are very peculiar—passing over the combs, she first inserts her head into the cell as if to examine whether it is ready to receive the egg; if it is all right she moves directly over the cell until her body is half across it; she then inserts her abdomen to the very bottom of the cell, turns partly around and withdraws herself, leaving an egg glued to the bottom. This she will continue to do, depositing in a single day from one to three thousand eggs. Another peculiarity of the queen is, that she lays both impregnated and unimpregnated eggs; the impregnated eggs producing workers and queens, and the unimpregnated eggs producing drones. The discovery of this fact is due to Mr. Dzierzon, a German apiarian of note. By reference to the cut, which is a magnified view of the ovaries of a queen, it will be better seen how a queen can lay impregnated and



unimpregnated eggs. It will be observed that both ovaries terminate in one common duct or passage, *a*, called the oviduct; on one side of which, and communicating with it, there is a small globular sac, *b*, called the seminal reservoir or spermatheca. When the queen becomes impregnated, this sac is filled with the semen of the drone, and though so very small, it contains sufficient to impregnate many hundred thousand eggs. It will be seen that every egg which leaves the ovaries and comes in contact with the mouth of the sac is impregnated, and will produce a worker or a queen; while every egg that leaves the ovaries and does not come in contact with the mouth of the sac is unimpregnated, and will produce nothing but a drone. It must not be supposed, however, that the production of drones or workers is mere chance work. Though it is yet a question how some eggs are brought in contact with the mouth of the sac, and others pass without contact, yet such is the case; the queen laying drone eggs or worker eggs apparently at will. I have long since become satisfied in my own mind, that the queen instinctively closes the mouth of the sac or spermatheca whenever she lays drone eggs, and opens it whenever she lays worker eggs. Whenever the spermatheca becomes exhausted of its impregnating fluid, the queen necessarily becomes infertile, that is, she ceases to lay worker eggs, and is then known as a drone-laying queen. It generally happens that the fertility of the queen expires in about four years, though she may live longer than that—even five years. She is said, however, to be impregnated for life, as the sac is supposed to contain sufficient for the whole period of her existence. It is better, however, to remove queens when they are four years old, and give the stock a young queen.

INDIA RUBBER BEE GLOVES.—Several correspondents wish to know where these may be obtained. The headquarters for them is Goodyear's India Rubber Glove Manufacturing Co., 205 Broadway, New York. They may be had of different sizes and various thicknesses. The gauntlet shape is best, as it comes well up on the sleeve of the coat or dress. A suitable article costs, gentlemen's sizes \$1 75, ladies' sizes, \$1 50 American currency. They are numbered especially to kid gloves, so that any size required may be ordered. Every bee-keeper should be provided with a pair of these gloves. Protected by them, bees may be handled without any risk of being stung.



Notes and Comments.

To the Editor of THE CANADA FARMER:

SIR, Permit me to make a few observations on several topics of agricultural interest.

CHEESE FACTORIES.

Cheese factories are to be the salvation of Canadian agriculture. There is no doubt but that the next few years will witness a complete revolution in the agriculture of our country. As the merits of this system of farming—dairy farming in connection with the factory system of working up its products into butter and cheese—get to be well understood, farmers will be quick to perceive its advantages, for it will be the most beneficial and profitable system of farming that can be adopted in most sections. The factory system takes from dairy farming its worst feature, viz: the slavish labor attending cheese making, and which too generally falls to the lot of already overworked farmers' wives to perform, without the aid of expensive apparatus which cannot be profitably employed on a single farm. This is what deters many intelligent agriculturists from devoting any great portion of their farm to this branch of culture, believing there are objects in life worth living for other than the mere making of money.

With every advantage in favor of dairy farming in connection with cheese factories, there is no doubt but that this system will extend until every section of our province, at all suited to dairying, will have its factory, and grain growing will give place to a style of farming at once more remunerative to the farmer and better for his fields.

In connection with the subject, we are glad to see a move has been made looking to the establishment of a Cheese Factory in this section. Mr. Sheriff Treadwell, a gentleman ever alive to anything bearing upon the improvement of our agriculture, has been stirring up the farmers upon the subject, and it is hoped our township will have its factory in good running order by another season.

FARM GATES.

A good farm gate is really a desideratum much wanted by farmers. Out of the great number of designs for these structures that have come across our notice, but a very small per cent. seem to present so many advantages for farm use as a well constructed pair of bars. These have the advantage of being always in order, of harmonizing better with the adjoining fences of a farm, and of being more lasting and cheaper. But as no thorough-going farmer will have them to his fields where they would require to be unchanged, a plan of a farm gate combining the qualities above with the advantage of being easily and quickly opened and closed is much to be desired.

Harrah's National Farm Gate (called the "Farmer's Gate" in advertisement in "CANADA FARMER") seems to be in many respects a good farm gate. As this is an American invention, and not patented in Canada, our farmers can make and use it free. Would it not be well to give the dimensions of the several parts of this gate in "THE CANADA FARMER" in connection with the illustrations given in the No. for Dec. 1st, 1865? Farmers could then make the gate for themselves, or they might even get them up without the dimensions, as every part is shown so plainly in the engravings. As long as the wholesale thieving of American inventions is allowed by our present defective and one-sided patent law, the privilege is equally open to all our citizens to make and use them.

AGRICULTURAL EXPERIMENTS.

There are many questions relating to the cultivation of the soil and the different crops, which puzzle thinking farmers, that might be cleared up by a few simple and easily made experiments. As a case in point, we have often noticed among farmers many and widely diversified opinions concerning the cultivation of a crop of potatoes. Some plant deep, plant early, and dig late. Others believe in and practice exactly the reverse. It is the practice of some of our best farmers to plant shallow and hill up as the plants grow, and they will bring up many arguments in favor of their system. Other equally as good farmers practice planting deeper, and are altogether in favor of flat cultivation. Now, this is a point that could easily be cleared up by a few judiciously conducted experiments.

Again, in the cultivation of Indian corn, most farmers grow a variety which produces the largest ears, and in the selection of seed aim to produce three-

sult. Other intelligent cultivators claim that a smaller kind, that will produce two or more ears to the stalk, will give greater yields. The King Philip, a comparatively small variety of corn, has produced some of the largest yields on record, and ripens several weeks before the larger varieties. Experiment might determine the best kind for cultivation in our climate. He who produces the largest corn will get the prize at our county show, but it may not be the most valuable variety to grow on our farms. By the way, measures might be profitably instituted for the purpose of ascertaining how small an amount of practical agricultural knowledge is required for a person to possess to render him incompetent for filling the responsible position of judge at our agricultural shows! Verily, this would be a fruitful field for research!

But there is one class of agricultural experiments, as ordinarily conducted, which are of very little value in throwing light upon the subject at issue, or all to give any true solution to the question. We allude to experiments for ascertaining the qualities and value of manures. We are led into this train of thought on observing the result of a "Manure Experiment" from your correspondent of Guelph in the number for April 15th, and who leaves your readers to draw their own conclusions as to the comparative value of the manures experimented with. Now, we fail to see what conclusions can be drawn from the figures given by your correspondent. If the experiment had been conducted over a period of two or three years or longer, it might give a true solution as to the value of the manures in question. It will be noticed that the land which received the 600 lbs. of bone dust, produced at a less rate than that to which 350 lbs. superphosphate of lime was applied. Now, this does not prove the superphosphate to be the most valuable manure, but that it was of quicker action, for in reality the 600 lbs. of bone dust contains nearly double the amount of fertilizing properties than the other does. So, also, the figures relating to the barn-yard manure, give no data for arriving at its true and comparative value. No experiments instituted for ascertaining the qualities and value of manures will give any true solutions unless conducted during a period extending over several years. Also, when one wishes results favorable to a special manure, or some particular variety of plant or seed, he can often get from experiments seemingly just the data he requires to give them a highly colored report, and such are a fruitful source of that antipathy to "book farming" prevalent among the less intelligent class of farmers.

J. B. C.

L'ORIGINAL, C. W., June 4th, 1867.

NOTE BY ED. C. F.—While concurring fully in much that our correspondent has advanced, we would remark in reference to his last "comment," that error in connection with such experiments as those to which he alludes, is not in the experiment itself, nor in its publication, but in the use that may be made of it, the inference that may be too hastily drawn from imperfect and insufficient data. Such experiments are valuable as far as they go, and furnish a basis and suggestion for further and more extended trials. In every department of natural science, patient, repeated, and varied investigation is necessary before coming to any definite general conclusions, and it is the habit of hasty generalization that has led to many of the errors that have brought discredit on spurious and superficial rather than true science. Our correspondent from Guelph did right, we think, in publishing the result of his single experiment without himself "drawing inferences," and the writer of the above letter is also justified in warning the farmer against hasty conclusions, though scarcely in the implied censure of an experiment, given for no more than it was worth.

Agricultural Queries.

A CORRESPONDENT, signing himself "Yankee," sends us from Newmarket the following queries:—

1st. I have seen clover meadows harvested this spring. Is it, in the opinion of your readers, a benefit? I look upon it as harsh treatment to clover after passing through a Canada winter.

2nd. When is the best time to apply plaster—in wet or dry weather?

3rd. Are small potatoes as good for seed as large ones? It seems to be the opinion of some that they are.

4th. I would like to ask "X" of May 15th a few questions. Is there a horse on the American continent of note as a trotter, made up as he says—weak in the back, weak in the hock, slack in the rib, and slab-sided? I think if he would post himself in the build of Patchin, Allen, Flora, Dexter, Rosier, Lady Suffolk, and scores of others, he would be inclined to surrender his position—without referring

him to our own horses, such as Davis's Black Hawk, Morgan, the Royal Georges, and Montreal Telegraph.

ANS.—1st. We should certainly have some hesitation in harrowing clover in the spring, though such proceeding is often beneficial with grass and some other crops. Clover being furnished with a aper root, is easily pulled out of the ground. If the experiment were made, it should be with a very light harrow, furnished with short teeth, and should be followed by the roller.

2nd. Plaster is most beneficial in a moist state of the atmosphere.

3rd. Use good sized and well developed tubers for planting potatoes. Why should this root be any exception to the admitted principle that, other things being equal, the finest seeds produce the most vigorous plants?

MORE LARGE LAMBS.—Canada is really prolific in fine lambs. We are quite overwhelmed with the number of reports sent us similar to those already published. Will our correspondents excuse us from continuing the enumeration? The accounts first sent were first published, and we trust that no suspicion of partiality will attach to us if we claim for our readers a respite in this matter.

BENEFITS OF ADVERTISING.—Mr. Thomas Grantham, President of the West Brant Agricultural Society, writes as follows:—"Enclosed you will find the amount of your account for advertising Durham bull. In connection with this matter I feel perfectly satisfied in paying your charge; for its benefit was immediate. You inserted the advertisement on the first of May, and on the eighth I was waited upon by Messrs. McLaurie and McPhail, who were appointed as purchasers by the Osgood Agricultural Society, and made a satisfactory sale to them. I delivered the bull in Paris on the ninth of May. Such are the benefits of advertising in a proper medium, such as your valuable paper. Farmers would really study their own interests were they to advertise valuable property more than they do. These remarks apply equally to the manufacturers of valuable farm machinery, implements, &c. THE CANADA FARMER is the best medium for all such. I hope you will find space in your columns to notice the change of ownership of the 'Duke of Mount Pleasant' as the Osgood Society has now one of the best Durham bulls ever raised in Canada."

The Canada Farmer.

TORONTO, CANADA, JULY 1, 1867.

THE NEW DOMINION.

Our present issue bears a date destined henceforth to be memorable as the birthday of a new nation. To-day the Confederation Act becomes law, and Canada expands from the condition of a Province into the dimensions of an Empire. A consummation which has long been devoutly wished by all classes, it is hailed, we believe, with universal rejoicing. We have had no cause in the past to be ashamed to own ourselves Canadians; but henceforward this becomes a prouder title than ever; and as the new nationality draws under its wing Province after Province, until all British North America comes to form one consolidated realm, we shall have increasing cause for patriotic attachment to our country. With the auspicious event of to-day, the name of this journal assumes a wider significance than was anticipated at the issue of the first number. We already count a goodly number of subscribers in the Maritime Provinces, and doubt not that the closer business and social intercourse which must result from the new order of things, will greatly increase our circulation in that direction. We congratulate our readers on the advent of Confederation, and would earnestly say, "God speed the plough" throughout the length and breadth of the New Dominion.

The Wool Market.

THE market in wool has now opened, but in consequence of the low prices offered remains very quiet. The sales hitherto having been mostly of small parcels. The farmers for the most part appear to be holding back their wool; and in this they are acting not only very naturally, but we think also wisely. In some places in the country, prices at the opening of the season ranged slightly higher than those current here. Many of the dealers who bought at these higher rates are now, we understand, in this market trying to sell, and willing to submit to considerable concession, in order to get rid of their stocks. For the best wool 27 cents was the highest price that has been paid on the street market here, and inferior lots have not brought more than 25 cts. This is about what there was every reason to expect from the state of stocks and the demand for this staple at the opening of the present season.

Under these circumstances, some farmers will be asking, shall we sell our clip, or shall we hold back? With not a few, unfortunately, there is no choice in the matter; they must sell at any price to meet pressing claims upon them. Others can afford to wait; and it does seem that it would only be prudent to do so. If there be, as we are told, a considerable stock on hand, time will diminish this superfluity. Wool is an article that will not readily spoil by keeping, and for which there is a steady demand throughout the year. The practice of crowding on to the market, within the limits of a few weeks, nearly the year's supply of this commodity, must necessarily diminish the price; for some parties must store the surplus, and the farmer can give it storage until it is needed, quite as economically and conveniently as the wool merchant. It seems, therefore, under present circumstances, the safest policy of the wool grower to be in no hurry to bring his clip into the market. Prices are not likely to range lower than those now offered, and a little reticence on the part of the farmer will sooner or later stimulate the demand and raise the price of an article that, like most of the farmers' produce, is indispensable to the community.

The Season.

THE record made in our last issue would apply equally well to the fortnight that has transpired since. The weather has been splendid, and the crops present a very fine appearance. All danger from June frost has passed by, and grumblers in advance have only drought, insects, hail storms and the like, as capital for complaining. The grass crop may be said to be safe; so may the fruit crop, which promises to be one of unusual abundance.

Horse Racing at Agricultural Exhibitions.

WE have occasionally observed a disposition at some agricultural shows to introduce, under the specious name of a "Trial of Speed" the attraction and excitement of a regular horse race. Without expressing any opinion here as to the general tendency of the so-called "Turf," with its almost inevitable accompaniments of betting and other modes of gambling, we cannot forbear entering our protest against the introduction of any part of the system into agricultural exhibitions. By such an admixture of an element of excitement foreign to the true scope and design of these noble institutions, their tone and standing would undoubtedly be lowered, and many from among the most respectable portion of the agricultural community would be deterred from lending to these important agricultural gatherings and competitions their personal sanction and support. There are in this world many things the principle and ideal of which may seem perfectly right and reasonable, yet which in actual practice have come to be so indis-

solvent, associated with blotches and stains from which any honorable man will shrink, that it seems in these cases a medium or temporizing course is scarcely possible, and never safe; and the only sound policy is to eschew them altogether; and this is certainly the course we would adopt in reference to introducing, under any pretext, the horse race into our agricultural shows.

With regard to the turf *per se*, although we wish to withhold our opinion, excepting in respect of the betting associated therewith, and which has always seemed to us the very meanest way of winning money to which any man can resort, yet we think the following testimony on the subject from an English writer, well qualified to express an opinion, is worthy the attention of Canadians, as well as Americans, to whom the words were originally addressed. The extract is from a letter which appeared recently in the *New York Tribune*, and was written by Mr. Thomas Hughes, and comes therefore with the more force, as that gentleman is known to be an ardent admirer and advocate of all truly manly and ennobling sports:

"So you are actually going in for the whole racing business in the New World, Jockey Club, betting ring, and all the rest of it! At least the *Times* of to-day prints in glowing periods the new race course at Jerome Park, established this autumn, with great éclat, by one of your most eminent millionaires, and the writer anticipates that you will soon not only rival the glories of Epsom and Ascot, but quite out out the poor old mother country. Heaven help you, then! for of all the cankers of our old civilization there is nothing in this country approaching in unblushing meanness, in rascality holding its head high, to this belauded institution of the British turf. It is quite true that a very considerable section of our aristocracy is on the turf, but with what result? Shall a man touch pitch and not be defiled? There is not a man of them whose position and character has not been lowered by the connection, while in the majority it ends in bringing down their standard of morality to that of blacklegs, and delivering over their estates into the grasp of Jew attorneys. The last notable instance among our *jaimesse doré* is that of the Duke of Hamilton, who succeeded to a clear £70,000 a year some three years ago, and who is now a pensioner of his creditors in the ring, while the old palace of the Douglass is at the order and disposition of the celebrated Mr. Padwick. This gentleman, at his Derby dinner this year, entertained three dukes, two marquises, and six earls, and I believe there was only one untitled man at the board—all of these under the thumb, or anxious to cultivate the esteemed favours of this "giver of all good things." Just consider for one moment what our modern system of betting has brought us to. A reliable "tip" is that which the most scrupulous young gentleman on the turf desires above all other earthly blessings before a great race, that is to say, some private information which may enable him to overreach his dearest friend, or his own brother, if he can induce him to take the odds. I do trust that the prophecies of the *Times* correspondent may prove as false in this as in more important matters, and that you may still have the good sense to keep the turf in America in the place which it has hitherto occupied, and to regard addition to its pursuits as an undebred eccentricity."

LIST OF AGRICULTURAL SOCIETIES AND OFFICERS FOR 1867.—In compliance with the request of a number of our subscribers and correspondents, we publish in this issue a complete list of the Agricultural Societies of the Province and their officers, compiled from the returns made to the Board of Agriculture. We have been kindly furnished with this list by the Secretary of the Board, Hugh Thomson, Esq., and have no doubt that the information will be useful to the readers of THE CANADA FARMER throughout the country. Many of the societies have been late in sending in their returns, which is the principal reason that the list for the present year has not been published sooner. It will be observed that in the column under the head of Treasurer a large proportion of blanks occur—where this is the case, it is to be understood that the offices of Secretary and Treasurer are united. Where blanks occur in other columns no return has been made in regard to the officers by the agricultural society opposite which the blanks are found. The names of county societies are printed in small capitals, and those of township societies in ordinary type.

Literary Notices.

GARDENING FOR PROFIT—A guide to the successful cultivation of the market and family garden. We have to acknowledge the receipt of a specimen copy of this work from Orango Judd & Co., of New York, the publishers. It is by Peter Henderson, a practical market gardener and florist, who has had eighteen years' experience, in the vicinity of New York. We have been repeatedly asked for a good, sensible work on market gardening. Here it is. Any one already in that business, or intending to go into it, will find this a manual of useful information and valuable hints. Not the least valuable part of the volume are the introductory chapters on the men fitted for the business of gardening, the amount of capital and working force required per acre, the profits of market gardening, location, soil, situation, laying out, &c. After an exhaustive discussion of general matters, an alphabetically arranged list of different garden products is given, with full directions how to grow them, from asparagus to water-melon. A calendar of monthly operations concludes the book. It is sent post-paid on remitting \$1.50 in Am. cy. to the publishers, No. 41 Park Row, New York.

THE SMALL FRUIT CULTURIST.—Messrs. Judd & Co. have also sent a sample copy of this new book, of which, like the preceding one, they are the publishers. The author is Andrew S. Fuller, a name of note among horticulturists and fruit growers in the United States. This work treats very fully concerning the cultivation of the barberry, strawberry, raspberry, blackberry, dwarf cherry, currant, gooseberry, cornelian cherry, cranberry, huckleberry and shepardia. The culture of the smaller fruits is attracting much attention just now among our American neighbors, and deserves more attention than it receives everywhere. Small fruits come into bearing at once, are a sure crop, and pay well. All needed information about their successful cultivation may be obtained from Mr. Fuller's work, which is supplied by the publishers at the same price as the preceding book.—\$1.50 Am. cy.

New Music.—We have received from Messrs. A. & S. Nordheimer, of this city, copies of two pieces of music issued by them, viz:—"THE ROYAL TIGER'S GALOP, STEIGH MEER," a universal favorite, and "ONLY A LOCK OF HAIR," by Claribel, a sweet and touching sentimental piece.

Entomology.

Notes on Insects by Farmers and Gardeners.

This is the season of the year when destructive, and, we may add, useful insects also, are at their height, we beg then that our farmer and gardener friends throughout the country will send us their observations on these important little creatures. Any authentic notes on the time of appearance, plant attacked, mode and duration of the attack, effect of wet or dry weather, numbers and distribution of any noxious or beneficial insect, are most valuable. When the proper name of the insect is not known, specimens should be always sent for identification, for otherwise the facts noticed by practical observers will be worthless and only tend to mislead, by the confusion of one species with another, and the consequent application of improper remedies. So many insects closely resemble in appearance others of a totally different character and mode of life, that only one who has devoted much time and study to the subject can identify them with certainty. Mr. Curtis, one of the greatest authorities in England on the economy of insects, states "he has found in his extensive reading on these subjects, that a very large amount of the information given by practical agriculturists and gardeners has proved valueless, in cases where, if the particular species alluded to could only have been identified, it would have been of great value in furthering subsequent investigations." One of the objects of this journal, besides disseminating information, is to afford farmers and others this special knowledge which they have neither the time nor the opportunity to acquire for themselves, and thus render valuable all their observations and experience, however crude and undigested they may be.

In another place Mr. Curtis writes—"The farmer could not do a greater service to agriculture than by trying experiments upon the various pests which may fall under his notice. But unless he records the facts and sends them, however trifling they may appear to be, to some journal connected with agriculture, no beneficial results can be expected. It is only by the united labours and experience of the many that

scientific men can draw conclusions on a subject which, like chemistry, has so much concealed from them. A farmer in his field, or a gardener in his garden, may chance to light on a fact in the economy of an insect which the naturalist may have been searching for in vain for years, and it may enable him to comprehend what had hitherto been to him a puzzle or a mystery, and to draw conclusions from it of great practical importance."

The Striped Cucumber Beetle.

In our last issue we mentioned that the flea-beetle on the spinach was said to attack also the leaves of the cucumber, as well as some other plants. In addition to this little pest there is a larger beetle, which is now committing great havoc among the cucumbers and melons in several parts of the country; in some instances it has attacked the leaves to such an extent as to completely kill the plants. The insect now before us is called the Striped Cucumber-beetle (*Diabrotica vittata*, Fabr.) and may be easily recognized from the annexed magnified figure; the hair-line at the side indicates the natural length of the insect.

This beetle is of a light yellow colour above, and black beneath: the head is also black; and there are three black stripes placed lengthwise on the wing-cases. It generally makes its first appearance about the beginning of June, fresh broods coming out from time to time during the summer.



The best mode of preventing the ravages of this insect is to cover the vines with frames of mosquito net or coarse tulle. Four pieces of board nailed together in the form of a box, with the net stretched over instead of a cover, is all that is required; this protection can be easily and cheaply made by anyone. When the vines have been grown in a hot-bed, of course the glass can be replaced by net when necessary, and by the time the frames require to be removed, the vines will have grown to such a size as not to be much affected by the beetle. Where the insects are not very numerous, hand-picking will be found efficacious.

Currant Worms.

Both the worms which during the last few years have become so widely known throughout Canada, have now recommenced their devastations, viz, the larvæ of the saw-fly (*Nematus verticicosus*, Klug), and the caterpillars of the moth (*Abraxas rubearia*, Fitch). We have already given full descriptions of these insects in our columns, and detailed the various remedies that are made use of to keep them in check, [Vide CAN. FAR: 1865, p. 231]; we need only now advise our readers to look sharply after their currant and gooseberry bushes, and destroy as many of the worms as possible. We must again recommend hand-picking as the most effectual means of keeping down these insects. Spread a newspaper or white cloth under the affected bush, and violently jar each branch in turn; most of the worms will fall off, and should be gathered up and destroyed as quickly as possible, before they have time to crawl away; the caterpillars of the moth, when shaken, let themselves down by a silken thread, and do not always fall to the ground, so they must be sharply looked after, look also, in case of the saw-fly worm, about the base of the bush, and pick off and burn any leaves that have a number of small holes in them, for these you will find, on turning them over, are being riddled by a multitude of newly-hatched worms, whose ravages can thus be easily checked before they have time to spread over the bush. Last year we ourselves picked at least two quarts of these leaves during the summer, each of which had on it from one to two hundred worms, the number we destroyed can thus be more readily imagined than calculated. The worms of the two insects, which bear a considerable resemblance to each other, can be thus distinguished.—The saw-fly worm is generally in company with others, and has his tail slightly curled up, he never hangs from a thread; the caterpillar of the moth is a span-worm, and loops up his body when walking he can let himself down by a thread, and often attaches himself to a leaf by his hind feet, stretching out the fore part of his body in a straight line, he is generally solitary in his habits, that is to say he seldom has a friend dining off the same leaf, though there may be multitudes on the same bush.



Pruning.

Some diversity of practice, and still greater difference of opinion and theory, often, however, more apparent than essential, seem to prevail in regard to pruning. It is not our intention, in the present brief notice of this important subject, to give explicit and practical directions for the performance of this operation, but rather to notice the general principles involved, and in connexion with these to offer a few plain and simple suggestions which may be useful to the novice in fruit culture.

Pruning is not altogether an artificial process. To a considerable extent, and in various ways, nature performs the operation. Winds twist and occasionally break off limbs and branches; where larger or smaller groups of trees grow together, the interlacing boughs interfere with each other, and modify development in various directions; while the dense shade of adjacent or superincumbent growths smothers much of the lower and earlier formed portions, and produces results depending partly on the habits of particular species, and partly on the amount of obstruction to the light. Thus in nearly every large tree the lower branches are gradually killed off, and we have a considerable length of naked stem before we arrive at the principal limbs, which spreading out on every side, sweep towards the ground, and overshadow all beneath them—the rest of the tree, when sufficiently isolated, assuming a graceful pyramidal form; while in close collections of trees, a much greater extent of the main stem has its successive growths smothered and killed, leaving long bare columns surmounted by a crown of boughs and foliage only at the summit, where light has free access.

In artificial pruning the objects are two-fold. We prune to induce a certain form; and we also prune to promote the production of fruit. The first object should be chiefly attended to when the tree is young; and indeed it may be well to observe here that, for the most part, all the operations of pruning should be gentle and gradual. Lopping off large limbs of trees after they have attained a considerable growth is a violent proceeding, which often does more injury than benefit, and which might have been entirely prevented by earlier attention. When thus performed in good season, the pruning may be done by a sharp knife, or by merely pinching the buds whose development it is desired to arrest. In cutting off side shoots, we believe it is best not to cut close to the stock, but to leave a short stump, equal at least to the thickness of the twig removed. This portion immediately below the incision dries and shrinks without any detriment to the living stock, whereas in cutting close the exposure is apt to cause an amount of decay in that part of the stem which it was not intended so to affect. The older practice was to cut close to the stock, and carefully cover over the wound with wax or some other similar preparation; but the better and safer method now generally adopted is to leave a short spur, and no covering is then needed. Much time is thus saved, and less injury done to the tree.

In young trees, especially where crowded together in the nursery, there is a tendency for the terminal buds to develop while the lateral ones are smothered, and a spindly growth is the consequence. To obviate this, the judicious pruner trims back the tree by removing the terminal buds, carefully avoiding any disturbance of the leaves or lateral branches, well

knowing their importance in forming the woody trunk. This operation calls into action several buds that were before dormant, and these form subsequently the principal limbs. Further attention is needed as these arms develop themselves during the next season of growth; they should not be too numerous, nor too much crowded together; they should not be too nearly matched in strength; and a single one among them, centrally situated, should be kept as a leader, which should be stronger than the rest. Where two principal boughs are allowed to shoot up in pretty nearly equal vigour, the tree will become forked, and such a ramification, when the tree is loaded with fruit, is apt to cause splitting. In this early training care should be taken to have the lateral branches regularly distributed on different sides, and moderately low, so that the fruit may be easily reached. The centre of the tree should subsequently be kept open for air and light, and not crowded together with a dense array of branches.

The second object of pruning is to induce fruitfulness; and the principle by which pruning effects this end has been much discussed, and variously stated. We believe the following statement of the case to be in the main correct. In the life and growth of a tree there are two processes going on, one in which the individual plant is increased and consolidated by the development and growth of leaf buds; the other, whereby the species is propagated by the production of seeds capable of germinating and assuming an independent existence. When the first of these methods of growth is interfered with, so as to threaten to some extent the growth of the individual plant, nature seems to put forth her energies in preserving the species, by the formation of flowers and consequently seeds. Hence, by arresting the development of leaf buds to an extent not sufficient to materially affect the health and vitality of the tree, a stimulus is given to the production of flower buds. Again, when the flower buds and incipient fruit are already starting, the cutting off a certain amount of the wood-forming apparatus directs a larger proportion of the sap and strength of the tree in maturing the fruit.

With regard to the proper time for pruning, much discrepancy of opinion appears to exist. This principle, however, should be borne in mind—that during the period of its greatest activity a plant suffers much more from severe mutilation, than during its season of comparative rest. Hence, when large limbs have to be removed—though by judicious management and timely attention this should seldom or never be necessary—the period of rest, or late in the fall, is the best season. The shock is then less felt, and the wound has time to heal. At the close of winter, and in early spring, the movement of the flow of sap is beginning to take place, and pruning at this season is apt to be followed by profuse bleeding and wounds that do not quickly close over and heal. We have always, therefore, avoided this season for any pruning operations whatever. We understand, however, that at the St. Clair vineyards it is the practice to prune in early spring; and although the vines are more apt to bleed than almost any other plant, we are informed the practice is not attended with any injury to the plant, and is successful in promoting fruitfulness. Whether a somewhat later performance of the operation might not be still more beneficial, we do not presume to say. Pruning should not be performed when the wood is frozen. One other principle remains to be noticed in connexion with this branch of the subject, and with this for the present we must leave it. A writer in the *Gardener's Monthly* thus tersely states the principle:—

“Much will depend upon which of the two leading objects we may have in view—vigour of growth and symmetry of form, or simply fruitfulness, as the result of our labours in pruning trees. Pruning at one season will induce the former effect; at a different period of the year, the same work will conduce to the latter result. Hence, the value of this postulate, which is pithy, and easily remembered. Prune in winter for wood, in summer for fruit.” We may add that summer pruning is mostly performed by means of pinching.

Advice to Tree Planters.

The following keen bit of satire, says the *Wis Farmer*, is from a valued correspondent, and perhaps the most successful fruit grower in Wisconsin. It will be highly appreciated by many who have tried the plans he suggests, and may be beneficial to all:

Buy as old trees as you can get, “age makes them more hardy.” They will be as valuable as a cabbage transplanted at the time of heading. Trees seven or eight years old, if properly grown, should be capable of bearing a bushel of apples. It would be better to buy such trees in the fall, with the fruit well matured. You will get the worth of your money in fruit. If they have been transplanted a few times, all the better, as there will be no danger of overgrowth the first season, and very little danger of any growth at all.

When you get your trees, expose them as much as possible to the sun and drying winds. If they live, it will be evidence of their extreme hardiness. If they die, charge the nurseryman with selling you dead trees, and claim damages.

In selecting your ground for an orchard, take that which is heavily sodded; timothy sod will do, but June grass is better. In setting your trees, destroy as little grass as possible; you may be short of hay next winter. Let your cattle and sheep run among them during the winter, and you will be able to add your testimony to that of hosts of others of similar experience, that fruit cannot be grown in Wisconsin.

If you have a grove of forest trees, set your fruit trees among them, they will protect them from the sun, and help to evaporate the moisture from the soil; it will save underdraining.

Invest largely in dwarf pears; the scarcity of an article often determines its value; the fruit will probably be as scarce as hen's teeth for a long time to come.

Buy your trees and plants of travelling tree peddlers, though your near neighbour may be a nurseryman; select such varieties as were favorites east, and you will know from actual experiment their value in this climate; or if you happen to know what are hardy but find them scarce in the hands of home nurserymen, tree peddlers can always supply you with any quantity you may desire.

ONE WHO KNOWS.

Duration of Garden Seeds.

The following from “Henderson's Gardening for Profit,” will no doubt be interesting to some of our readers who sometimes find difficulty in getting seeds to germinate:

“There are few seeds that will not germinate as freely the second year as the first, if kept in a cool place, and not exposed to either too drying or too damp an atmosphere. With the exception of Parsnips, Onions and Leeks, I would just as confidently sow seeds two years old, as when fresh gathered; but there is a limit to the vitality of seeds, varying much in the different species.

“Among those only safe for two years, are:—Beans and Peas of all kinds, Peppers, Carrot, Egg Plant, Okra, Salsify, Thyme, Sage and Rhubarb.

“Those safe for three years: Asparagus, Endive, Lettuce, Parsley, Spinach, and Radish.

“Those for four years: Broccoli, Cauliflower, Cabbage, Celery, and Turnip.

“Those possessing the greatest vitality, are: Beet, Cucumber, Melon, Pumpkin, Squash, and Tomato, the time ranging from five to ten years.”

PASTURING SHEEP IN THE ORCHARD. — A correspondent from Norwich says.— I have an old orchard which was badly infested with the apple tree worm last year. This spring I trimmed it and grafted some of the trees, and have pastured the lot since then by sheep. On examination a few days ago with a view to make arrangements to destroy the worms, I was surprised to find none, and only the remains of a nest or two, and am convinced the sheep have trampled the worms as they fell from the trees, and thus destroyed them. Farmers in the vicinity, all of whose orchards are badly infested, agree in the opinion that the sheep have destroyed the worms; and it such is the case, it is a fact worth making public.

Agricultural Intelligence.

New York Prices of Farm Products.

The New York Journal of Commerce gives the prices of farm products at New York, on the first day of May in each year, for the past twelve years. We arrange in the following table the prices of some of our leading farm products at that date, for each year since 1855:

The variation in pork has been large. The table is interesting, as showing the comparative prices of different products at a season of the year when, as a whole, market values are highest.

Table showing the comparative prices of farm products from 1855 to 1886. Columns include Flour per bush, Corn per bush, Oats per bush, Hay per cent, Hops per lb, Wool, Mergo, per lb, Pork per bush (prime), Beef per bush, Butter per lb, and Cheese per lb. Prices are listed in dollars and cents.

It will be seen that during that time cheese has fallen below ten cents only three times—in 1858, 1861, and 1862. The most remarkable advance in any one article is in that of hops, the price of which has increased more than six times what it was in 1856. For the first eight years, the variation in flour was comparatively small. Hay has been pretty uniform, except in the years 1864 and 1867.—Ulster Weekly Herald.

Trial of Agricultural Implements at the Paris Exhibition.

A TRIAL of mowers took place on the 23rd May, at the Imperial Farm of Fouilleuse, near St. Cloud. The ground was in very bad order, wet, almost boggy in places, and stony, and the weather very unpropitious. Two-and-a-half acres were apportioned to be cut by each competitor. In consequence of the unpropitious state of affairs only one trial was made, and further competition, with hay-rakes, tedders, and other agricultural implements, was postponed till the time of the trial of reapers, in July. In this first public exhibition an American mower, exhibited by Walter A. Wood, of New York State, came out best, partly owing, it is said, to the superior generalship of the smart Yankee driver. Messrs. Howard, of Bedford, England, came next; Mr. Perry, of New York, and Mr. McCormick, of Chicago, showed good work. The final trial in July will no doubt be an interesting one.

Great Sale of Short-Horns in England.

"THE breeders of Short-Horns, and especially the admirers of the Bates' blood," says the London Field of May 4th, "enjoyed a rare treat on the first of May, when the magnificent herd of Mr. Edward Ladd Betts, Preston Hall, Aylesford, Kent, (comprising sixty-two animals—fifty-two females and ten males), was brought to the hammer by Mr. Strafford. The Preston Hall sale adds a fresh page to the history of the Short-Horns, which will be frequently referred to with just enthusiasm, as a proof that, despite the difficulties attending high breeding, and notwithstanding the extending distribution of the best blood, Short-Horns, when bred with judgment, will still maintain their price. We believe that the Kentish

sale, taking into account the number sold, presents the highest average yet realized—viz., a total of £11,187, 6s., or £180, 8s., 9d. per head. This surprising result is mainly, of course, attributable to the presence of the Grand Duchesses, whose remarkable history stands out as a proof of the value of purity of blood. The grand heifer selected by Mr. Bates at Collings' sale with such unerring judgment, has indeed proved the mother, not "of a race of Queens," but of Duchesses and Grand Duchesses, unequalled for aristocratic character and fine breeding. Long may they flourish, and may their present owners bring to bear upon their future development as much judgment as those who have hitherto possessed them."

The Field furnishes a list of the sales, classified according to the tribes to which they belonged: We have space only for the principal classes, which were as follows:

Table of sales for the Grand Duchess Tribe and Cambridge Rose Tribe. Lists various breeds like Grand Duchess V, VIII, IX, etc., and Cambridge Rose I, II, III, etc., with their respective owners and sale prices.

Table of sales for the Butterfly Tribe. Lists various breeds like Lady Butterfly, Royal Butterfly, etc., with their respective owners and sale prices.

Table of sales for the Butterfly Tribe (continued). Lists various breeds like Royal Butterfly, etc., with their respective owners and sale prices.

Myriads of squirrels are reported to be over-running some parts of Indiana.

A disease fatal to horses is prevailing at Great Neck, N. Y., and has killed eight horses belonging to one man within a fortnight.

The hog cholera has broken out among the hogs in some portions of Amherst, Va., and is very fatal, but few recovering from it.

The people of Halifax are making arrangements for holding an exhibition of the industrial products, manufactures and articles of commerce of Nova Scotia.

France obtains fifty per cent. more wheat per acre than the United States, and England more than one hundred per cent. greater crops than ours, and the secret is superior cultivation and manuring.

At a recent sale of Alderney cattle near Baltimore, Ind., sixteen cows and heifers were sold at an average price of \$224 75 per head. The highest price was \$380 for a four year old cow.—Ex.

An army of rats made a raid on the hog-pen of a farmer at Summer Hill, N. Y., a few weeks ago, and killed and nearly devoured a hog weighing 200 pounds.

WENTWORTH AND HAMILTON AGRICULTURAL EXHIBITION.—The United Societies of Wentworth and the City of Hamilton Agricultural Society will hold their annual Exhibition on Tuesday and Wednesday, the 8th and 9th days of October next, in the city of Hamilton.

NEW ENGLAND FAIR.—The fourth annual exhibition of the New England Agricultural Society will be held in connection with the Rhode Island Society for the encouragement of domestic industry, on the grounds of the Narragansett Park Association, Cranston, near Providence, R. I., on Tuesday, Wednesday, Thursday, and Friday, September 3rd, 4th, 5th, and 6th, 1867. The Premium List will amount to nearly \$10,000. Arrangements have been made with the various railroad companies, to run their cars, containing stock, &c., directly to the fair grounds.

CATTLE PLAGUE IN ENGLAND.—For the week ending 25th May, eighty-four attacks of cattle plague have been reported—being an increase of fifty-one on the last return. Eighty-two cases occurred in the metropolis, one in Shropshire, and one in the East Riding of Yorkshire. Number of healthy cattle slaughtered, eighty-one.

PARIS PRIZES SHEEP AT THE EXHIBITION.—The distribution of prizes for sheep exhibited at the Agricultural Exhibition in Paris took place on the 27th ult. Medals of the first class were awarded to M. M. Rambouillet, Garnot, Lefebvre, Bailieu, Chlapowski, and Mielzynski. The sheep exhibited by the two latter, whose farms are in the Grand Duchy of Posen (Prussia), were considered to surpass all the others for the excellence of their wool.—Pall Mall Gazette.

TESTIMONIAL TO MR. BRYDON.—We have already intimated that Mr. Brydon leaves the farm, Moodlaw, at Whit Sunday. It has been deemed, therefore, a fitting opportunity to present him with a testimonial as an expression of the high esteem in which he is held, not only for his private worth, but for the eminent services he has rendered to the agricultural world as a breeder of Cheviot sheep; and it having been suggested that the testimonial should take the form of a portrait, he has consented to sit to Mr. Smellie Watson, of Edinburgh. It is proposed to have the same engraved for distribution among the subscribers. The subscriptions are limited to a sovereign.—The Farmer (Scottish).

CONCENTRATED MILK.—A new and curious article of food is now making its appearance in the shops. It is concentrated milk, which is now being manufactured on a large scale at Cham, near Zug, in Switzerland. According to Baron Liebig, its nutritive qualities are excellent. To a certain quantity of pure milk a dose of sugar is added, and the watery particles contained in the liquid are extracted by spontaneous evaporation in vacuo. In this way the milk gets thick and acquires the consistency of honey; it is poured into tin boxes, which are afterwards hermetically closed, so that the contents will keep for an almost indefinite period. By dissolving a portion of this substance in water, a cup of pure milk may be had at a minute's notice.—Farmer, (Scottish.)

A FAMOUS HORSE SOLD.—The famous trotting horse Melton, the pride of the Canadian Turf, lately owned by Mr. Simon James, of this city, has been sold to leave the Province for the round sum of \$8,500 in gold. The purchaser is a lady of sporting proclivities, residing at Kalamazoo, Mich., who is also owner of the American trotting horse Gray Eagle. She first witnessed the performances of Melton at the grand horse meeting in Buffalo last season, and has since been persistent in her determination to acquire possession of her favorite, until the offer of the large sum mentioned overcame the owner of the animal. Melton distinguished himself at the Buffalo races last season, winning one of the grand purses against a field of renowned competitors, and was undoubtedly entitled to rank as the king of the Canadian Turf, which reputation his late owner confidently anticipated he would maintain the present season more effectively than ever before. Mr. James started yesterday with Melton in charge, to be delivered to the purchaser at Kalamazoo, she also paying the duty, which according to the present tariff of 20 per cent. will amount to the item of \$1,700, making the total cost of the horse \$10,200.—Hamilton (C. W.) Times, May 16.

SOUTH ONTARIO SHEEP SHEARING MATCH.—Mr. H. M. Thomas, of Brooklyn, sends the following account of a trial of skill in sheep shearing which took place at Whitby, under the auspices of the County Agricultural Society of South Ontario, on the 8th June:—"The day was all that could be desired, fine and warm, but the company was not as large as was expected. The afternoon, however, passed off very pleasantly. The shearing was very well done. In the first class (open to men) there were four competitors; in the second class (for boys) two. The prizes were awarded for the best shearing, two hours being allotted to each competitor to shear his sheep in. The first prize in the first class was awarded to Mr. Thomas Allen, West Whitby—time of shearing his two sheep, seventy-one minutes. The second prize was awarded to Mr. John Farmer, West Whitby—time of shearing, sixty-three minutes. The third prize was awarded to Mr. William Wickel, West Whitby—time of shearing, sixty-five minutes. The fourth prize was awarded to Mr. Silas Inch, East Whitby. In the second class the first prize was awarded to William Wickel, junior—time of shearing his two sheep, eighty-seven minutes; and the second prize to Thomas Wickel—time of shearing, eighty minutes. I think the way in which the prizes were distributed gave general satisfaction."

AGRICULTURAL SOCIETIES AND OFFICERS, 1867.

SOCIETY	PRESIDENTS.	SECRETARIES.	TREASURERS.
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The Household.

Preserving Rhubarb for Winter Use.

In compliance with the request of a subscriber, we give directions for preserving rhubarb for winter use. There are several methods recommended. The cheapest, and perhaps one of the best, is as follows:— Prepare the rhubarb as for a pie, paring it if necessary, and cutting it up into pieces not too small; put these into wide-mouthed glass bottles, or jars, nearly up to the neck; fill up with a little sugar; place the bottles, uncorked, into a boiler or other suitable receptacle, with cold water sufficient to surround the bottles, but not to flow or bubble over into them. A little hay or straw is useful to place at the bottom of the boiler, and if required, pack slightly between the bottles to prevent breakage. Now boil the whole pretty briskly. The rhubarb will shrink somewhat, and the hot contents of some of the bottles

should be used to fill up the others, which, after being submitted to the boiling heat for a short time, should be quickly corked up, and the corks covered over with melted cement, so as completely to exclude the air. If this process has been properly conducted, the rhubarb will keep fresh and palatable for many months. In our own family we have thus preserved it for more than a year. After the bottles have been once opened, and air admitted, the rhubarb will not keep for any length of time.

Another plan, upon the same principle of excluding the air, the oxygen of which is the great agent in effecting decomposition, is this: Prepare the rhubarb as in the preceding recipe, and boil it for about half an hour in a preserving pan, with sugar in the proportion of a quarter of a pound to each pound of rhubarb. Have wide-mouthed bottles ready, making them quite hot in the oven, and fill up with the boiling rhubarb, corking down and sealing with cement as before. Some recommend holding the bottles

over a little burning sulphur, so as to displace the air within by the fumes of the burning sulphur, and then quickly filling up with the rhubarb. We have found the heating the bottles to answer the purpose without the fumes. There is still another plan adopted by some, which is to cut up the rhubarb and dry it in the same manner as apples or peaches are dried. It is said to keep very well in this way.

If the object is to make preserves rather than to retain the fresh flavour of the rhubarb, the following plan, which, however, requires a considerable proportion of sugar, will be found to make a preserve almost equal to that of green gages. Prepare the stalks as before, and boil without sugar, so as to drive off a considerable amount of the watery juice. To each pound of the rhubarb thus reduced or "wasted," as house-keepers say, add a pound of sugar (16oz is best), and boil all together in the usual way till the whole is sufficiently thickened to make a tolerably stiff preserve.

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WILL then be able to reach all orders on hand. Can also fill a few more orders from that I received in your orders without delay v4-13-11 J. H. THOMAS.

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TO any person sending to Whitty Station a good stock of bees free of charge, safe arrival guaranteed. I will in return send free of charge, one of my First Prize Double-boarded Bee-hives, including right to make. Price \$6. I will also take in exchange for Territory, good Stocks of Bees or a good Hoss; and Buggy, and will not refuse Money.

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My Italian Queen, imported from Lake Maggiore, Italy, has arrived. She is a large, fine queen, breeding beautiful light coloured queens, even to the third generation.

N.B.—This is the only queen in Canada imported from Italy. Persons who desire to secure queens bred from her this season would do well to send in their orders at once. Price of queens bred from her, and ordered to be shipped in July, \$7; after that \$5. Queens bred from last year's importations and guaranteed pure, \$5. Orders for Stocks, Queens, Hives, Books, &c., will receive prompt and careful attention, addressed to J. H. THOMAS, Aplanan, Brooklyn, C. W. v4-12-11

CHEESE VATS.

PELLOW AND WALTON, MANUFACTURERS of Cheese Vats and dealers in all kinds of Dairy Utensils. Their Vat took a Special Prize at the Provincial Exhibition of 1866.

PELLOW & WALTON, King St., Oshawa, C. W. v4-11-41

FOR SALE.

- 15 Callows. 1 Hereford Bull, 20 months old. 60 Leicester Sheep. 30 Improved Berkshire Pigs.

All the above Stock may be exchanged for good milking cows. Apply to MR. DENISON, Datecourt. v4-10-41

Toronto, May 10th, 1867

BEE HIVES! BEE HIVES!!

J. H. THOMAS' First Prize N. C. BEE HIVES!

PARTIES desirous of purchasing the above Hives, resident in the Counties of Carleton, Russell, Ottawa, Pontiac, Renfrew, Lanark, Leeds, Grenville, Dundas, Stormont, Glengarry and Prescott—apply to the undersigned Agent, JOHN HENDERSON, New Edinburgh, C. W. v4-10-41

P.S.—Send for Circular and Price List. New Edinburgh, May 1, 1867.

SUPERIOR CHERRY CHEESE HOOPS.

A FULL supply of the above PRESS HOOPS and of extra size 18 and 20 inch PRESS SCREWS, kept constantly on hand by PELLOW & WALTON, Cheese Vat Manufacturers, Oshawa, C. W. v4-11-41

Sale of Pure-bred Shorthorn Stock,

COTSWOLD AND LEICESTER SHEEP.

W. W. ROE has received instructions from M. Joseph Kirby, to sell by PUBLIC AUCTION, at his residence, two miles from Milton, on July 21th, 1867, the following valuable first-class stock

25 HEAD OF PURE-BRED COWS, HEIFERS, BULLS, AND HEIFER CALVES.

20 COTSWOLD AND LEICESTER RAMS, YEARLING AND TWO YEAR OLD.

40 FIRST-CLASS YEARLING AND TWO YEAR OLD EWES.

See Catalogues on application. v4-13-11 JOSEPH KIRBY, Milton, Co. Halton, C.W.



THE Subscriber takes this opportunity of informing the public at large that he is still manufacturing, extensively, STEEL MOULD-BOARD PLOUGHS

Of the best material, both WOOD and METAL BEAMS, at the usual prices for cash, say \$14 50 with Steel Land Side, and \$13 without, on board the cars at Bradford Station.

Parties sending orders are requested to be particular in describing the Plough they wish, whether Wood or Metal Beam, and also what number.

Money sent by mail in registered letters will be at my risk.

L. BUTTERFIELD, Bradford Foundry. v4-13-31

ON AND AFTER THE MEMORABLE 1st OF JULY, 1867,

LICENSEES will be granted separately to Butchers and others, to use the rights granted by patent to Martin Collett, for slaughtering and preserving FRESH MEAT, FISH, POULTRY, &c., in the Provinces of Ontario, Quebec, Nova Scotia, and New Brunswick. For terms and Licenses apply, if by letter prepaid, to T. KEARTON MORGAN, Esq., Barrister at Law, Toronto. MARTIN COLLETT & SON, Toronto. v4-13-11

Markets.

Toronto Markets.

"CANADA FARMER" Office, June 25th, 1867.

DEPRIVED the past week the produce markets have taken a turn for the better, and though there have been few transactions reported at higher figures, the views of holders have each day gone up in proportion to the advance which each day brought with it in the Western and New York markets.

Flour.—In the latter part of last week the market was very dull and quiet. No. 1 superfine sold at \$7. Early in the week, however, a reaction took place, and the market improved, and sales were made at \$7 25. Subsequently, in sympathy with the New York and Western markets, prices still further advanced, and \$7 50 was offered for a round lot and refused. Extra was offering yesterday at \$8 25, for which \$7 75 was bid; and 100 bbls superior changed hands at \$9 10.

Wheat.—The market during the past week has been quiet and inactive. The closing prices of last week were \$1 40 for car lots of Spring, and \$1 65 for car lots of Fall. Prices have since advanced to \$1 55 for Spring, and \$1 70 for Fall, at which rates sales have been made. On the street market, prices have remained firm at from \$1 45 to \$1 60 for Spring, and from \$1 70 to \$1 75 for Fall.

Oats.—During the week the market has been dull and inactive, and transactions have been confined to the street market, where prices have slightly advanced, ranging now from 42c to 45c.

Barley.—There has been nothing doing in car or round lots. Prices are therefore nominal. The offerings on the street market have been very light; prices ranged from 60c to 65c.

Peas.—Early in the week round lots were offering at from 65c to 70c. There has been more enquiry within the last two days, but no sales were made. Prices on the street market have remained steady at from 60c to 65c.

Oatmeal.—No demand. Nothing doing. Offering at \$5 50, without buyers.

Butter.—25c to 40c per bushel. Wool.—During the week, the receipts on the street market have been light and principally of inferior quality. Prices are, if anything, rather weaker, and buyers seem afraid to touch even at the reduced rates. For inferior wool 24c is the highest that could be obtained, and for clean wool of best quality 26c.

Hay and Straw.—Hay selling at from \$12 to \$15, Straw at from \$6 to \$7.

Precisions.—The market during the week has been inactive. Cut meats have been more active latterly, bacon selling freely. The quotations are—ham, 11c for smoked, canned, 12 1/2c, for salt, and 11c for fresh; beef, 8c for smoked and rolled, 11c. The latter market has been generally unsettled, operators being very cautious. A few lots of old offered at from 7 to 9c, new, in kegs, none in the market, choice yellow rolls, 11c to 12c, farmers' rolls, on the street market, 10c to 16c. Eggs, the market is very quiet owing to the hot weather, nominally 9c, with very light enquiry, retail 10c to 11c. Lard.—No movement, prices unchanged; offered at from 9c to 10c. Dried apples dull, at 10c. Cheese, slow of sale, and arrivals of new very light; quoted at from 11c to 13c.

THE CATTLE TRADE.

During the past week cattle have not been offering in any numbers in our market, the few brought in were also of inferior quality. Most of the stall-fed cattle in the hands of farmers have now been disposed of, and it is not thought that many remain to be brought to market. The last of the stall fed cattle was bought last week by Mr. Irwin butcher from Mr. White M.P.P. of Halton, number being 17 head, they sold at \$5 75, live weight, weighed in Toronto.

Green butchers' hides buying at 7c. Green calf-skins, 12 1/2c to 15c. Wool skins, \$1 60 to \$2. Murrain hides, 5 1/2c to 6c. No. 1 inspected hides selling at 8 1/4c, No. 2 inspected at from 7 1/2c to 7 3/4c.

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