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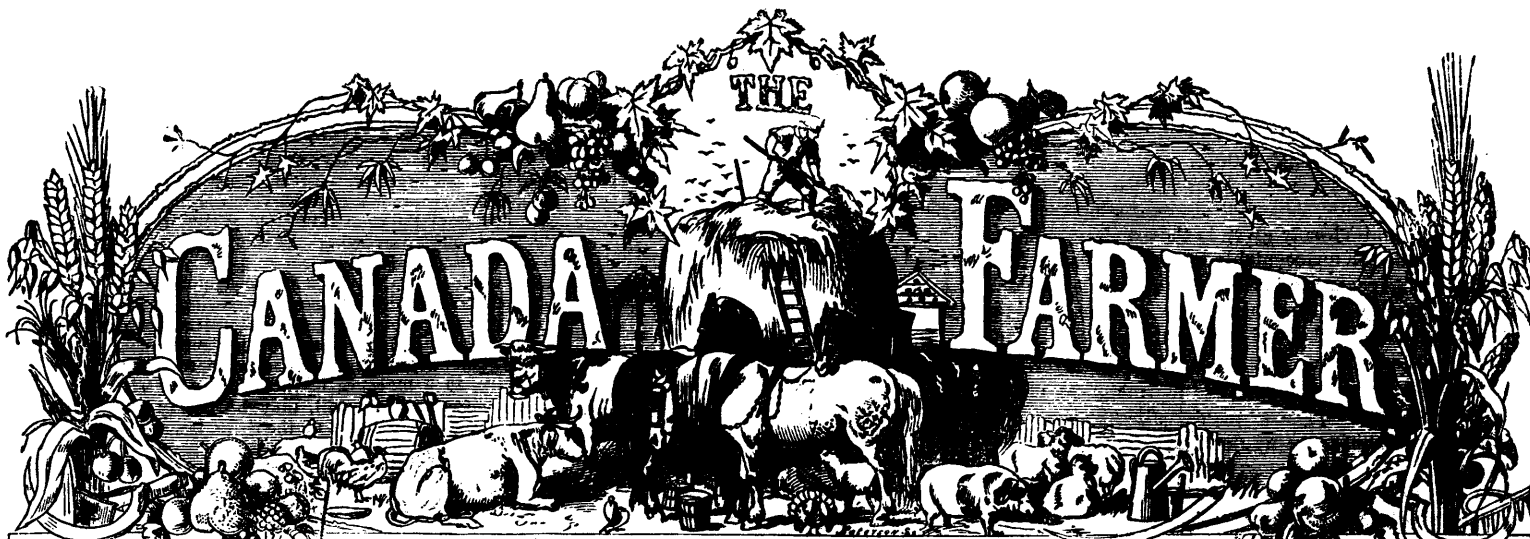
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### The Month.



NOVEMBER

is a month of very uncertain character in this climate. It is hard to say how it will behave. Sometimes it begins with a rough cold snap that startles us into a conviction that winter does really mean to come again, and, as if to make amends for its rough behaviour at the outset, closes with that delightful reminder of a departed season which we call "Indian Summer." Or this order is reversed, in which case summer in pretence begins the month, and winter in earnest closes it. The well-known March proverb is not inapplicable to November. If it come in like a lamb it will go out like a lion, and *vice versa*.

The mean temperatures for this month are as follows:—

Stratford .....	36° 75'
Hamilton .....	39° 76'
Barrie .....	37° 99'
Toronto .....	38° 36'
Belleville .....	38° 82'
Montreal .....	34° 76'
Quebec .....	35° 50'
St. John, N.E. ....	37° 40'
Halifax .....	38° 00'

"Preparation for winter" may be written as the motto and watchword for November. It is to be presumed that the potatoes are all dug and housed either in cellars or pits. We are liable to have frosts about the first of November, severe enough to do great damage to potatoes. If any are left in the ground at so late a date as this, by all means let them be got out of it forthwith, if Jack Frost is not playing jailer with them.

All the root crops should be taken care of at once: carrots, beets, mangolds, and turnips. Carrots are beginning to be raised more extensively, chiefly as winter food for horses, and they are very valuable for this purpose. But they are equally good for other animals. Boiled and mixed with meal they are excellent for fattening hogs. Mangolds may be alternated with turnips in feeding cattle.

Thus used for milch cows, they correct the turnip flavour which is apt to be given to the milk by the exclusive use of turnips. But mangolds are especially useful toward the close of winter, and by their peculiar qualities, are an excellent preparation for turning out to grass. In taking up turnips, the best plan is to remove the tops before lifting the roots. This can be done most expeditiously by means of a sharp hoe. Care must be had not to cut a slice off the turnip along with the top. The tops may either be fed to cattle or ploughed in. We prefer the latter course, chiefly because the tops are a rather too unsubstantial and loosening diet to be a good preparation for winter, while they are an excellent green manure. Some farmers are in the habit of tearing their turnips out of the ground with harrows. We do not commend this practice. It cuts up and wounds the bulbs considerably. A light tool, somewhat like a pick, made for the purpose, does the work much more satisfactorily, and the process is not so slow as might be imagined. One of the best farmers we know, who usually raises about twenty acres of turnips each year, pursues this plan in preference to all others. The most convenient way of storing them for the winter is in a root-house close to the cattle stabling, but they will keep well in pits. Care must be taken to provide ventilation, and to avoid the extremes of warmth and cold. Turnips keep best just above the freezing point.

All animals should be well housed this month. Nothing is more unprofitable than to let stock suffer inconvenience from the cold. It is a great waste of feed, for shivering animals eat voraciously, and after all their food does them far less good than if they were kept comfortable. It is especially bad policy to let young stock suffer exposure. Keep them warm and they will improve in flesh, appearance and constitution. No prize animal was ever produced by being treated to a straw stack for both shelter and food. Colts will show the effect of care and good stabling more decidedly perhaps than any other description of young stock. It is a total mistake to suppose that exposure makes them hardy. Shelter, good food, ventilation and exercise, are what impart toughness of muscle and power of endurance. Fattening hogs should be well housed in good season, and got ready for market by settled cold weather. Better prices usually prevail early in the season, before the market is glutted with pork. Poultry intended for the table or market should be cooped, and fed with scalded meal, and the like. The addition of a little suet will hasten the fattening process, especially in the case of geese and ducks. The practice of converting poultry into food without preliminary fattening is to be reprehended quite as much as the practice of slaughtering lean beef, mutton or pork.

Manure-making is an important November job

Collect stores of muck, leaves, dry tan bark, saw-dust, and any sort of litter that can be used as an absorbent, that all the droppings, both liquid and solid, may be secured. "Waste not, want not." The yards should be cleaned now and then, the manure thrown up loosely into heaps, and coated with muck or soil. The value of manure depends largely on the food eaten by the animals; the richer the food the better the manure. A large proportion of the food of well-fed animals finds its way into the manure, and hence that made from fattening animals is of the greatest value. Hogs are the best fed of any animals on the farm, and next to night soil, hog manure is the richest of fertilizers.

Until frost comes, the plough should be kept going upon land meant for spring crops. All soils are benefited by exposure to the action of frost in a loose condition, clay soils particularly. Many a tough, unpromising soil in the fall, has become loose, friable, and pleasant to work by spring, under the influence of alternate freezing and thawing.

It has been well observed that "there may be great slaughter of biennial weeds this month with a 'spud.' Every coarse-leaved flat-growing plant in the meadows and pastures (and many that have fine leaves in close bunches), and green at this time, are plants that make root one year and bloom the next. Cutting an inch or two below the surface is fatal to most of them, and damaging to all."

Orchard and garden work the present month also comes principally under the head of preparation for winter. Some recommend planting fruit trees as late in the season as it can be done without danger from a too cold and frosty air, which is apt to injure the roots. We prefer to heel in the trees now, and wait for a favourable time to plant in early spring. The orchard may be top-dressed with manure to advantage the present month. Some are absurd enough to expect continuous crops of fruit without enriching the ground in which the trees grow; but fruit is like everything else, it must be cultivated and manured if it is to yield satisfactorily. Where field mice abound, it is necessary to bank up young fruit trees with soil ten or twelve inches high, making the surface firm and smooth, to prevent them from girdling the trees—a favourite trick with them. It is well to spade or plough gardens late in the fall. Some recommend pruning grape vines before winter sets in, others advise delay until just before the sap begins to flow in early spring. Grapes and raspberries are best laid prostrate, and even covered with an inch or two of soil before winter. A loose covering of cornstalks, straw, litter, or leaves, is advisable in the case of strawberry beds. Tender bulbs should be lifted and put in the cellar, if that has not already been done. In short, everything animal or vegetable, that requires winter quarters, must without further delay go into them.

## The Field.

### Storing Roots.

A few words on the subject of storing roots, in addition to the hints already given in the article on the month, may not be unacceptable to young Canadian farmers. With regard to the modes of harvesting the various root crops, it is not always possible, for want of sufficient help, to do this in the best manner. The necessity of using the most expeditious means is sometimes more pressing than the desirableness of employing the most approved plan. Pulling by hand, topping, and tailing, are no doubt the cleanest and altogether thriftiest processes; but with a number of acres to gather and a very few hands to do the work in but a short time, this tidy method is not always practicable. The implement adverted to in the foregoing article, will be found to effect a great saving of time in harvesting turnips. If the work is still more pressing, it may be expeditiously and not badly done with a plough. It is sometimes necessary to use the harrow; but these rough methods are objectionable, as they tend to wound and bruise the roots, and so render them more liable to decay. The less they are knocked about the better.

It is the practice with some good farmers to pile the turnips in heaps in the field, and cover them over with leaves, and let them remain for some days to "sweat" before hauling them to the root-house or pit. It is contended that the after heating in the bulk is thereby diminished.

The root-house is no doubt the most convenient receptacle for storing roots. It should be located near the stables, so as to diminish as much as possible the labours of carrying food to the animals during the winter. Experience will soon teach the farmer the importance of attending to these apparently trifling details. A few minutes saved in operations that recur frequently during each day, will amount in the aggregate to a very considerable item. It is not well, however, to build root-houses under the main portion of barns; for the steam and moisture from turnips especially, will speedily rot the timbers in the roof of the apartment in which they are stored; and when these support the floor of the barn or stables above, they have soon to be replaced, and perhaps at considerable inconvenience and outlay.

Great attention should be paid to thorough ventilation, a moderately cool temperature should be secured, and free egress allowed for the steam and vapor to escape. Generally speaking, the door and other apertures of a root-house where turnips are stored should be kept open during a large portion of the time till Christmas or thereabouts; and even afterwards, whenever there is any considerable rise in temperature, the access of external air and a thorough draught should be permitted, due caution, of course, being exercised to guard against freezing. Potatoes are not so liable to heat as turnips, nor indeed are mangolds; and both these roots, mangolds and potatoes, are more delicate, more liable to be injured by frost than turnips. Some practical inconvenience therefore occasionally arises from storing the different kinds of roots together. This may be partly guarded against by partitions in the root-house, and by setting apart the warmest portions of the space for the more tender roots.

Where the farmer has not the convenience of a suitable building, or where such accommodation is insufficient for the whole crop, roots may be kept with perfect safety in well-constructed pits. These need be but little dug below the surface; though sometimes they are stored in pretty deep trenches. We prefer a shallow excavation, such as can be made by loosening the soil with a plough, and using a shovel afterwards. A slope of ground should be selected to facilitate drainage, and the length of the pit should correspond to the inclination of the ground.

Regard must, however, be had to the aspect. It is not well to have one side facing south and the other north. One will have the full force of the sun, and the other always the shadow, and exposed to the keenest winds, would be doubly cold. The floor of the pit should be so graded that no water can lodge in it, and trenches should surround it outside in such a way as to carry off all melting snow or rain-fall.

The inexperienced are sometimes apt to make these pits too wide, by which the danger of heating is greatly increased. Five or six feet is quite wide enough. The length is a matter of less consequence. The turnips should be piled up to a ridge. If boards are handy they will be found serviceable to place next the roots, in such a way as to prevent the dirt falling in when the roots are removed from beneath. A good covering of straw should next be packed evenly over the whole. Use plenty of straw. Then cover all with a coat of soil well pressed and beaten down. A thorough ventilation should be secured by chimneys near each end and at regular distances between. These pipes can be conveniently made out of inch fence boards, six inches and four inches wide. Two opposite sides should be about six inches longer than the others, and over the longer a short board can be nailed. This will cover in the top and keep out rain and snow, while a sufficient opening will be left at the sides for ventilation. Sometimes it is desirable at first to leave the ends of the pits open for a time to keep down the temperature, and allow a ready escape of vapor. After a while more earth should be piled on, and before the winter fairly sets in, a pretty thick coating of earth should be packed upon the straw. Some persons are afraid of covering too deeply for fear of keeping the turnips too warm, but there will be no fear of this if due attention is paid to the ventilation. Potatoes require a warmer covering and less ventilation than other roots, and should, if possible, be stored away dry. In very cold weather, all openings should be stopped up with straw, which may be removed again when the weather moderates.

### Experiments in Wheat Culture.—Drilling and Horse-Hoeing.

THE Secretary of the Goodhue Farmers' Club, of Minnesota, communicates to the *American Agriculturist* the following interesting statement in regard to some experiments in wheat culture, made by one of the members of the club.

*Field No. 1.*—Two bushels to the acre was sown with the broadcast sower and cultivator combined, and the seed was planted at all depths, from the surface to three or four inches deep.

*Field No. 2.*—Was sown with a common wheat drill, east and west, one and a quarter bushels being used to the acre, planted about two and a half inches deep.

*Field No. 3.*—Three pecks of seed were drilled in, east and west, two and a half inches deep, and eighteen inches apart. It was cultivated but once, when about a foot high, with a five-toothed walking cultivator, at an expense of \$1 per acre.

The results are thus stated: "No. 1 was good wheat, not damaged by heat, head medium in length, well filled, stood thick upon the ground. Was unequal, some straws five and six feet in length, and some only two feet. Some heads were very green, while others were ripe. The yield is estimated at from twenty to twenty-five bushels per acre. No. 2 was of a better color during growth than No. 1. Very even in straw and degree of ripeness. Heads about even, of extra length. Bundles very heavy, and the yield is estimated at thirty bushels per acre. No. 3 was extra at all times. Its unusual deep green colour and broad leaves attracted much attention. No one supposed it the same kind of grain as lots 1 and 2. It stood out much more than either No. 1 or 2. It was uniform in length of straw and degree of ripeness. The heads would average one-third larger than No. 1, and the largest and heaviest wheat we ever saw. Strangers here picked for the smallest heads, and then shelled from sixty to eighty kernels from each head. Our binders, and we had some from other States who had had much experience, said they never saw such large heads or such heavy wheat of this kind, namely, China Tea. The yield is estimated at thirty-five or forty bushels per acre."

The Club arrives at the conclusion that they have been in the habit of using too much seed for spring wheat; that wheat needs cultivating; that if half a bushel of seed were used per acre, and sowed in drills fifteen inches apart, and thoroughly cultivated, the average crop of Wisconsin might be doubled. They recommend, moreover, the expenditure of the price of the seed saved in giving the land a more thorough harrowing. In this they are wise; there is nothing to which wheat so quickly responds as thorough tillage, and it may be a question whether this should be done previous to sowing or after the grain is up. There are other interesting subjects for investigation before any one can speak with authority. The exact amount of seed per acre, though depending in a measure upon the kind of wheat and the character of the soil, may be nearly approximated. The distance apart of the drills is another subject for experiment; twenty inches has been recommended. It is difficult to cultivate between those which are much nearer, and no doubt the roots will fill the ground between them at this distance.

### The Product of one Weed.

DESIRING to know what might be the influence of a single weed upon the agriculture of a field or garden, I selected a plant of purslane (pusley or pursley, as called by some), and carefully counted its number of pods. It was a large, but not the largest sized plant, from a rich spot of ground. The number of its seed pods was 4,613. I then took fourteen of the pods, seven small ones, four medium, and three of the largest, and counted the seed in them. The result gave me as an average ninety seeds to the pod. Thus in this single plant we have the enormous number of 415,170 seeds. If these were spread over a plot of ground and should all germinate, and a man should attempt to cut them with a hoe, and should average six plants at every blow, and make thirty strokes of his hoe per minute, it would take him thirty-eight hours and twenty-three minutes to cut them out. Or, if these seeds were equally disseminated at the rate of four to the square foot, they would cover over two and a third acres of ground. Again, allowing only one-third of these seeds to germinate, and that the product shall only be one-half as rich in seed as this plant, yet they will produce the astonishing number of 28,727,688,150 seeds, enough to cover broad fields with weeds the third year, from one seed. Do not these figures show the immense importance of cutting and destroying every weed before it goes to seed? There is no doubt that many other weeds are as fully or more prolific than this. The purslane is a difficult weed to kill. I have known it in wet weather to grow and mature its seed long after it had been entirely severed from the root.—*Cor. Journal of Agriculture.*

UTILIZATION OF SEWAGE.—Our English exchanges give interesting accounts of the very satisfactory experiments made in the neighbourhood of London, on the Lodge farm, to test the fertilizing power of the sewage of the city. A company was formed some time ago to reclaim some of the poor, waste land in the County of Essex, by means of the sewage of the metropolis, and it is from the last yearly report of this company that the following results are given. One-fourth of the acreage under cultivation raised rye-grass, for which there is a greater demand than can be met. As a proof of the fattening power of sewage-grown grass, it is stated that two young steers fed exclusively on it had, from the 18th of May to the 7th of August, gained weight to the following extent: one, 1½ cwt., and the other 2 cwt. Land of the poorest and most sterile description, with no other manure than sewage, is found to yield prolific crops, not only of grass, but of wheat, rye, mangold, cabbage, turnips, potatoes, &c. By this means six or seven crops of grass are raised in a season, each very heavy. With two dressings or floodings of sewage, a crop of mangold of fifty or sixty tons per acre has been produced where not more than twenty or twenty-five could be had when farm-yard dung was used for manure. In the same way, without this manure, the crop of wheat was about twenty-eight bushels per acre; with it, something like forty-four. Could we not also utilize the waste of our cities?

## The Uses of Clover.

It would be very difficult to over-estimate the importance of this crop to all farms engaged in mixed husbandry. Its introduction into England produced an entire revolution in the Agriculture of that country. Clover laid the foundation of all those wise systems of rotation that have since made the Agriculture of England a model, and a marvel to the world. Nor is its importance much less in those sections of America where its values are appreciated and rightly applied.

Clover is valuable.

1. As a forage plant.
2. As a fertilizer.

As a forage crop, its special value is in the quantity and quality of the hay that it produces, and the rapidity with which it comes to maturity after being sown. Clover properly cared, is almost equal to good Timothy, for beef cattle, and much superior to all other hay, for milk stock. In pasture, the same relative values hold with the addition that, for hogs, clover is a grand specific, superior, perhaps, to all other grasses.

The specific value of Clover, however, lies in its wonderful powers as a fertilizer. In this respect it is unequalled by any crop grown on the farm. The different ways in which it adds to the fertility of land are chiefly:

1st. *Shading the surface of the soil.* Owing to its rapid and luxuriant growth it soon forms a close and heavy covering over the soil, that acts as a mulch in protecting it from the scorching rays of the summer sun. At the same time that the soil is protected the weeds are smothered out, and the land cleaned up.

2nd. *By aerifying and disintegrating the soil.* Clover possesses peculiarly long and powerful tap-roots, that penetrate deep, loosening the soil and admitting the air. Thus rapidly changing the physical condition not only of the soil, but of the subsoil also.

3rd. *By effecting important chemical changes, necessary to enrich the earth with plant food.* Its abundance of foliage enables Clover to gather from the atmosphere immense stores of gasses that give life to the plants, which its far reaching roots send deep down into the earth. Thus a clover field becomes, as it were, a great reservoir for plant food. And clover itself becomes a great commissary, collecting food from the earth and the air for whatever crop that may follow.

4th. *By preventing washing.* The Clover mulch breaks the force of the hard beating rains, while the roots hold the soil in a mat as it were, thus preventing it from washing.

5th. *As a green manure.* Perhaps no crop is so valuable for turning under in a green stage, as Clover. In addition to the immense amount of rich vegetable matter in its abundant roots, the plant itself is extremely rich in all the materials necessary to the healthful growth of succeeding crops.—*Dixie Farmer.*

## How to Use an Axe.

MARK TAPLEY, in his "Homo in the wilderness," thus discourseth: "To use perfectly the American wedge-shaped axe (and here let me say that it is the only axe for felling timber and doing everything with which is worth one straw), requires no ordinary degree of skill and practice.

"Strength, of course, has something to do with it, still a man of only moderate muscular power would beat a giant into being ashamed of himself, if the weaker man did, and the stronger man did not know how to wield an axe.

"The axe I prefer for all ordinary purposes ought to weigh about 8 lb., and it should be carefully mounted or 'hung,' as the term is, on a springy, rightly curved hickory handle. . . .

"Let us suppose you are going to fell your first tree: be careful to discover how the tree leans, and always choose that side towards which it inclines to begin on; by doing this you avoid the risk of falling the tree on yourself. Stand off from the trunk, so that the edge of your axe blade can touch the centre of it, whilst both your hands are grasping the handle before the knob at the end of it, purposely made to prevent it from slipping out of the grasp in the act of chopping.

"Fix your eye on a spot about three feet from the ground on the tree trunk, plant your feet firmly, look carefully behind you, to make sure that there are no small twigs or branches to intercept the axe; then holding the handle by the extreme end, not too firmly, or it will jar your wrists, and whirling the axe at arm's length round your head, bring it obliquely down upon the spot you have fixed your eye on. If you bring the edge down on the proper slant, the blade should be nearly buried in the bark and timber; if you do not it will glance, and then look out for your legs. Repeat this cut if you can; an axe-man would, twice

or three times following, in the same place. Should the tree be, for example, four feet in diameter, chop in the next cut you make three feet lower down than where you made the first cut. But, this time, horizontally, always bringing the axe round at arm's length. This will give you the right sized chip, to use a lumberer's phrase, or, what he means, in other words, is, that the three-foot notch will enable the chopper to make the wedge end of the tree break in the centre of the stump; if you took a smaller notch, as nine out of ten inexperienced men would do, you would find your axe jammed before you could chop half way through the trunk; hence the length of the chop is always in proportion to the girth or diameter of the tree to be felled. Cut half way through the tree, always keeping the lower surface horizontal and smooth, as if planed, then change and begin on the opposite side to that on which you have been chopping, precisely in the same way as you began the other cut, when you are nearly through, the tree will crack off, and of course fall in the direction to which it leaned, that is, away from you."

## The Early Rose Potato.

The following account of an experiment with the Early Rose Potato corresponds in its general tenor with many other reports which we have seen, and which lead us to form a very favourable opinion of this new variety:—

"As the 'Early Rose' is now presenting itself to the agricultural public, and is receiving, as every new source of and claimed improvement should receive, a thorough test and trial of its merits, perhaps a few words in relation to my own personal experience with it the past season would not be amiss.

Being attracted last winter by its presentation in the December number of 'The Practical Farmer,' I was induced to purchase some of them at the enormous price of \$3 per pound; and with one of these pounds I will state my treatment and success, deeming it might be interesting to some of your practical readers.

"The pound of potatoes contained nine tubers. Owing to the unfavourable spring, and not receiving them till late in the season, I did not succeed in planting them till May 26th. On the 20th I proceeded to cut them for planting; the eyes had started growth by which I was enabled to cut them in single eye pieces. Some of the middle or large eye pieces I divided, making from the nine potatoes one hundred and six plants, all of which grew; they were planted without any extra preparation of the soil, the ground being manured, ploughed down, and marked out about four inches deep, and planted with phosphate in the row, kept the ground mellowed by frequent harrowing, and about blossoming time drew a little dirt towards the row. They occupied just one hundred feet of row.

"September 11th I proceeded to dig and weigh them, and from the one pound planted, I had just one hundred and one-half pounds of potatoes, and what was still better, ninety-three pounds of them were large merchantable potatoes, such as will bring the highest market price. Their shape accords very much with that of the *White Mercey*; their color a dull rose; inside, flesh pure white, and exceedingly starchy and fine. In short I consider them a great acquisition to the grower of potatoes and cultivator of the soil.—*Cor. of The Practical Farmer.*"

## Advantages of Underdraining

WARREN, in his "Elements of Agriculture," states that the advantages of underdraining are many and important, and enumerates the following:

1. It entirely prevents drought.
2. It furnishes an increased supply of atmospheric fertilizers.
3. It warms the lower portions of the soil.
4. It hastens the decomposition of roots and other organic matter.
5. It accelerates the disintegration of the mineral matters in the soil.
6. It causes a more even distribution of nutritious matters among those parts of soil traversed by roots.
7. It improves the mechanical texture of the soil.
8. It causes the poisonous excrementitious matter of plants to be carried out of the reach of their roots.
9. It prevents grasses from running out.
10. It enables us to deepen the surface soil by removing excesses of water—
11. It renders the soil earlier in the spring.
12. It prevents the throwing out of grain in winter.
13. It allows us to work sooner after rains.
14. It keeps off the effects of cold weather longer in the fall.
15. It prevents the formation of acetic and other organic acids which induce the growth of sorrel and similar weeds.

## Splitting Rails.

Almost every farmer can split rails, but there is considerable science in the work after all. One man will save them out with apparent ease, while another will tug away and exhaust his strength in a few hours. The reason of this difference is owing to the weight and shape of tools, and the knowledge of their use. One man makes a constant outlay of strength, while another will apply it only at an essential point, and that is when the beetle is descending and near the wedge.

An experienced rail-splitter tells us that the best mail is made of a knot, and should be of medium weight, not so heavy but that a man can swing it with ease. One iron wedge, quite slim, should be kept and used for starting the split; it is not apt to rebound, and if it should, it may be easily prevented by making a few cheeks with an axe near together, and starting the wedge between them, or by rubbing the wedge in dirt.

It is hard enough to split rails at the best, and we believe it a sin for any man to attempt the work without proper prerequisites, for he has no right to exhaust physical powers and ruin his constitution by using poor tools, when the best can be obtained at a trifling expense. Great advantage is gained, when making rails, by opening large logs with a charge of powder.—*Ohio Farmer.*

## Destruction of Stumps.

We have always objected to the use of machinery of any sort to take up large stumps in ordinary arable land, that they would take up inevitably a large quantity of earth with each, and leave a hole almost as objectionable as the stump; and moreover, that after the stumps were out there was trouble in disposing of them. The following suggestions which we take from our neighbor, the *Baltimore Weekly Leader*, may be quite practicable, while they are not liable to the same objections. They are at least worthy of trial:—

"We have heard of two methods of getting rid of stumps, which, as they appear feasible and inexpensive, we hope some reader will try and report upon. Bore with a two inch auger to the heart of the stump; fill the cavity thus made with sulphuric acid, or with crude oil of petroleum. In the first case, the acid becomes the destructive agent within a few months; in the latter, when the stump becomes saturated with the oil, it is fired, and will then burn out to the last particle like a candle."—*The American Farmer.*

BRIGHT BARLEY.—A correspondent from Wyoming Post Office, Plymton, asks: how the farmers around Toronto save and harvest their barley to get so bright a colour? The grain buyers say our barley is plumper than that raised round Toronto, but deficient in colour." We do not know of any special method pursued by the farmers in this neighbourhood in gathering this crop. During the past season no particular care has been necessary; the dry weather, with all its disadvantages, has been favourable for harvesting. Perhaps the soil may make the difference referred to, if it really exists.

NORWAY OATS.—*L'Union des Cantons de l'Est*, published in Arthabaskaville, contained the following paragraph in its issue of the 8th ult., copied, apparently, from the *Pioneer*:—

"Mr. J. P. Lee, of Stanstead, sowed, last spring, 92 lbs. of Norway oats on a piece of ground measuring 790 perches, from which he harvested 1620 lbs., or 60 bushels. The husk is small, and the straw very superior to that of ordinary oats. The ears are 12 to 20 inches long—some of them yielding 226 grains,—and there were from 29 to 50 ears from a single grain. Mr. Lee believes he would have harvested double the quantity he had if the season had been favorable. A Mr. Price, of Vermont, is said to have harvested 100 bushels of this oats to the acre."

GO TO FARMING.—A good living is what comparatively few men succeed in making in village or city life, and yet nothing is more easy of accomplishment on the farm. Besides, there is a pleasure in cultivating and embellishing the earth, improving and increasing its products, and thus adding to the aggregate of human happiness. Why, then, should young men hesitate to be farmers? It is both profitable and honorable. It is the nearest approximation to independence that man as a member of society can make. A gentleman farmer—and all farmers are, or should be gentlemen—belongs to an order of nobility that is not indebted to placehold for installation, and may, if he chooses, be ranked among the greatest benefactors of the human race. Let all the idle young men go to work on farms, and quit seeking third and fourth rate clerkships. In short, go to farming and quit begging.—*Ec.*

## Canadian Natural History.

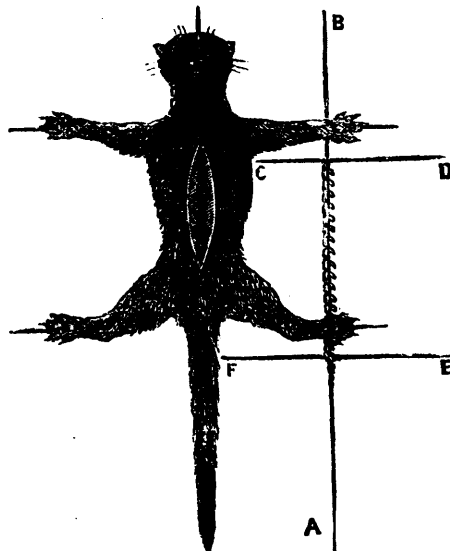
## On Stuffing Quadrupeds.

To the Editor of THE CANADA FARMER:

SIR,—It will be remembered that in the number of your journal issued September 1st, I gave directions for skinning quadrupeds. I now propose to describe the method of stuffing them. Let us suppose the animal to be a cat. Take a central wire, which must be the length of the head, neck, body and tail of the cat, shown in the accompanying cut, that is, from A to B. Two other wires are then taken, and twisted round the centre piece in the manner represented in the cut, c. d. e. f., their extremities being left for the leg wires. After the wires are thus twisted together, the central wire is pulled out; and the feet wires of one side are pushed through the legs of one side from the inside of the skin, and the other two leg pieces are bent and also forced through the other legs, and then made straight by a pair of pincers. The centre piece, having been previously sharpened with a file, is now forced through the forehead and down the neck till it enters the centre of the twisted leg wires, in the position which it formerly occupied, and is then pushed forward to the extremity of the tail, leaving a small piece projecting out of the forehead, as represented in the cut; after which the completion of the stuffing is proceeded with. We will suppose the skull is now well rubbed with the arsenical soap, and all the cavities which the muscles before occupied are filled with chopped tow, flax or cotton, well mixed with preservative powder. The inner surface of the neck skin is now anointed and stuffed with chopped tow, taking care not to distend it too much. Nothing like pressure should be applied, as the fresh skin is susceptible of much expansion. Observe that it is always the inner surface which is anointed with the arsenical soap. And now having the neck stuffed, begin with the fore legs, and when they are both completed, stuff what will then be the under side of the centre wire; then form the breast, and continue stuffing the body until you come to the hind legs. Serve them the same as the fore legs. Observe that the wires in quadrupeds should be longer for the hind legs than for the front ones. Before finishing the body, stuff the tail; then finish the body, and anoint all the skin that can now be reached, and then with care sew up the skin, and if any hairs have been drawn in with the thread they must be picked out with a small awl. When this is completed, the hair will resume its natural order and completely conceal the seam. The articulations of the legs are then bent, and the animal placed on its feet. Pressure should now be applied over the places that are naturally flat, so as to make the other parts rise where the muscles are visible. A board is then prepared on which to place the cat. When you have decided on the position in which you intend to set your animal, bore four holes for the admission of the feet wires, which must be drawn through with a pair of pincers till the paws rest firmly on the board, and then twisted into a groove underneath the board, so that it will sit level. The stuffer next devotes his attention to the position and final stuffing of the head and neck.

The muscles of the face must be imitated as correctly as possible by stuffing in cotton at the opening of the eyes, as also at the mouth, ears and nostrils. The next care is the insertion of the eyes, which must be done when the eyelids are yet fresh. Some dexterity and skill are required in this operation, and on it will depend most of the beauty and char-

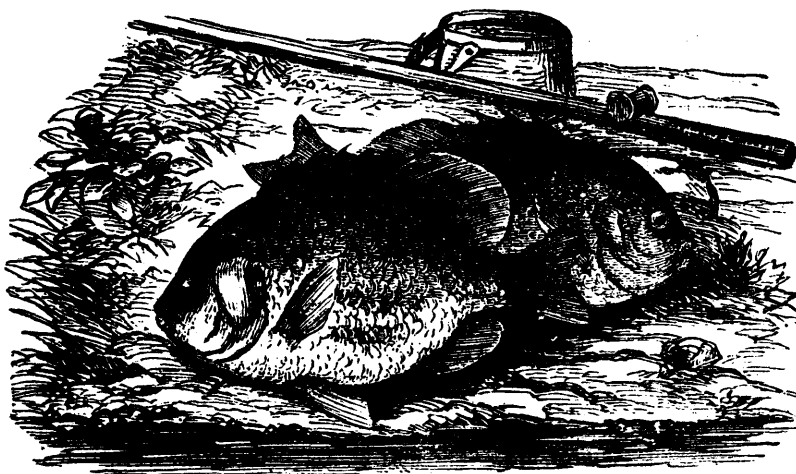
acter of the head. The sockets of the eyes are supplied with a little cement, the eyes put in their place, and the eyelids properly drawn over the eyeballs; but if rage or fear are to be expressed, a considerable portion of the eyeballs must be exposed. Draw the lips together, plug up the nostrils with cotton, well tintured with arsenical soap, to prevent moths from entering. The same precaution should be adopted with the ears, which with the cat require but little attention in setting.



The method of stuffing which I have pointed out in the above is applicable to all animals, from a lion down to the smallest mouse. Animals of large description require a frame-work suited to their dimensions. These will be pointed out in their order.

A. B. B.

— A canary bird, belonging to Miss Barber, of Windsor, Ontario, died August 30, at the remarkable age of fifteen years and two months.



## Fresh Water Sun Fish.

*Pomotis vulgaris.*

THE common Pond Fish, or, as it is usually called in Canada, the little Sun Fish, is the last, least, and most numerous of the Perches that we propose to notice, having already described the more distinguished members of the same family, the various species of Bass. Our chief American piscatorial authority, Frank Forester, says of this small species, the subject of the accompanying illustration:—"This beautiful little fish has gained its provincial name from the extreme brilliancy of its colours when disporting itself in the sunshine. The numerous spots on its body have procured for it the absurd name of *Pumpkin Seed* in many States, and in Massachusetts it is known as *Bream*. It is valueless as an article of food, and equally so as a bait fish, its acute spines deterring

any fish from seizing it. It is, however, a constant object of pursuit to boy and lady anglers.

It has very many varieties, and a wide geographical range, being found from lake Huron, through all the Eastern States, and along the Atlantic coast as far south as Carolina.

Its colour is greenish olive above, with irregular points of red and broader yellow or reddish brown spots disposed in very irregular lines. It is marked also with ranges of brighter spots on the bluish operculum, and on the hinder prolongation of the operculum, a black spot with a bright scarlet margin.

Its body is much compressed, very broad, oval. Scales large and even. Forehead sloping to the snout. Lateral line concurrent with the back. Eyes large, circular, near the facial outline. Nostrils double; mouth small, with very minute, thick-set teeth on the maxillaries, palatines, and vomer.

Its dorsal fin has ten spinous and twelve soft rays; pectorals, twelve soft; ventrals, one spine and five soft rays; anal, three spinous and five soft; caudal, seventeen soft rays.

There is another well-defined species, the Black-eared Pond-fish (*Pomotis appendix*), which is distinguished by a large lobe-like black prolongation of the upper posterior angle of the operculum.

TWO SERPENTS AND A CAT: A SINGULAR CASE.—The *Messenger Algerien* relates the following curious story:—"A very singular occurrence took place in the warehouse of the Messageries Impériales at Stora. A large case containing two serpents, directed from Batna to the superintendent of the Zoological Gardens in Marseilles, was deposited in the warehouse for shipment. Whilst there a cat, ignorant of what the case contained, got into it. No sooner had it done so than the reptiles sprang at it with the rapidity of an arrow, and squeezed it to death in their immense coils. They then relaxed their hold, and commenced

the process of swallowing. The male serpent seized the dead cat by the head end, the female swallowing the tail end. It is well known that when serpents take into their mouth a substance of a certain size, the conformation of the teeth and jaws is such that they cannot let go their hold. In the present case both snakes were thus brought face to face, the process of deglutition was arrested, and it became doubtful how the matter would end. At length the female snake made a desperate effort to swallow the other, and in doing so was choked." In corroboration of the above facts the animals have been preserved in spirits of wine. The directors of the

Zoological Garden of Marseilles are going to bring an action against the Messageries Company for the loss of the serpents, whilst the owner of the cat demands that its skin at least should be given up to him as a matter of curiosity.—*Zoologist*.

WILD DUCKS.—Since the rigid enforcement of the game laws, the inlets and marshes of Burlington Bay are swarming with wild ducks, and owners of private marsh property are encouraged to form preserves. The *Hamilton Times* says that Mr. Wm. Gage, whose locality is well known to sportsmen, on one of the inlets of the bay, has about 300 acres of marsh land bordering his farm, which he is about to convert into a tempting resort for game, by seeding down a considerable portion with the wild rice, having prepared a supply of 600 lbs. at no small expense. The grain springs up from the water, and the heads have something of the appearance of oats, though much longer, the kernel being black in colour. It grows luxuriantly, and when once seeded, rapidly spreads over the adjacent marshes.

**Stock Department.**

**The Winter Coat of Horses.**

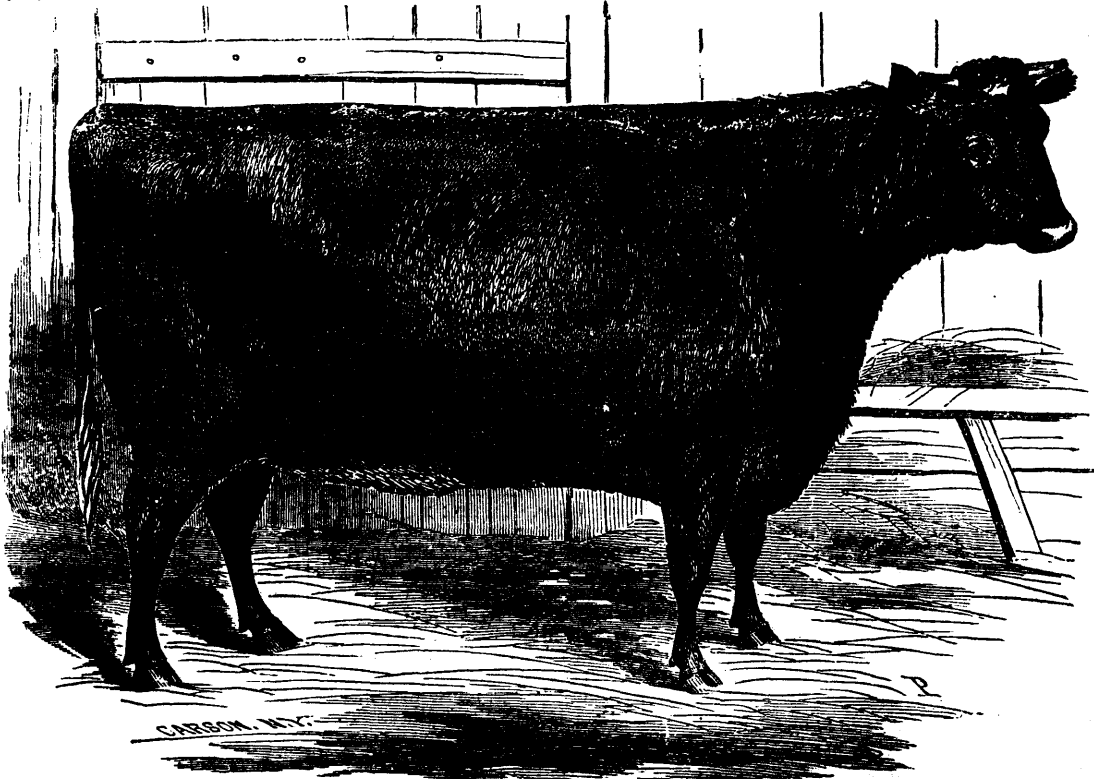
HAIRS and all strictly analogous formations are periodically produced, increase by continuous deposition of fresh matter at the base, and are at length shed, and replaced by a new, and precisely similar growth. When this happens simultaneously all over the skin, the whole coat is changed. The bird moults and comes forth with new and brilliant plumage, and the quadruped casts off its old covering, and acquires a new, fine and glossy garment. These changes are so timed, moreover, as to correspond to the varying temperature of the seasons. The fine short hairs, when first formed, composing a comparatively cool covering for the summer heat, become, by the advent of winter, when they have acquired their full length, a warm and sometimes a shaggy coat, well adapted to defend the body against the rigours of this period of the year. In the horse, and especially in those that are natives of such a climate as ours, this change in the coat is very marked. The increased warmth of the winter covering is ordinarily set off, as it were, by a less glossy appearance. This is partly

minimum, should find many strenuous advocates. We do not think the custom adapted to this climate, though in the milder and moister atmosphere of England it may be really beneficial. The English hunter, and even, at times, the roadster, are called upon to make violent exertions, which will necessarily excite a profuse perspiration. If in this condition, with the natural thick winter coat of hair, the animal is brought into a warm stable, it will be a long time before the coat will become dry, and the horse is very apt to take cold, from long standing with a wet skin. The clipped coat obviates this danger, saves the groom a vast amount of trouble, gives the animal a degree of life and sprightliness very agreeable to the rider, and apparently exhilarating to the horse, for the same reason that a human being if turned out into the cold with scarcely any covering would be forced to "step lively" in order to keep up the circulation of the blood. To our taste, the practice even in England is no improvement as regards appearance; we prefer nature's finish to man's fantastic docking and shaping. But tastes differ, and fancy in horse-flesh is not guided by artistic rules. In this climate, however, on the ground of these severe cold and the sudden and extreme changes of temperature, we cannot think the practice in question either safe or judicious.

obviated by the practice of blanketing, whereby the moisture of the skin and an abundant secretion of its natural oils are promoted. The extra artificial covering is also in most cases advantageous as a fit and grateful protection to the animal, in the peculiar circumstances attending domestication and the service of man, against the extreme severity of our winters. In this climate, and with such stables as are found in most farm steadings, the blanket is of essential service, if it is properly employed; but too often it is irregularly used, and serious mischief results. The blan-

ket should not be used upon a horse at all in the winter, unless it is used faithfully. The great trouble in its use arises in this way: When a team has been driven a few miles to market, or the same distance for pleasure, blankets or robes are put on; but when drawing logs to the saw-mill, or doing other heavy work, they are made to haul large loads a mile or two, and return at a brisk trot, then stand unblanketed while another load is being put on. Or perhaps while driving upon the road—sleighing good, speed high—a friend is met and half an hour spent in talking; the horses cool suddenly, take cold, and the owner wonders how it happened. By such inconsiderate treatment more harm results in the use of the extra clothing than if it were omitted altogether. With due care, nevertheless, it is of essential service in the trying winters of Canada.

While the additional covering seems the consistent supplement of the warmer natural coat, it is somewhat strange that the practice of clipping or singeing the hair, before the advent of winter, so as to reduce the protection of the skin against the cold to its very



"DUCHESS 97th,"—The Property of M. A. COCHRANE, Esq., Compton, Quebec.

**"Duchess 97th."**

WE have much pleasure in presenting our readers with a life-like representation of "Duchess 97th," the costliest Short Horn importation ever made into this country. When Mr. Cochrane brought "Rose-dale" to Canada, he placed on our soil the finest known specimen of the Booth family of Short Horns, and "Duchess 97th" is not a whit her inferior as a representative of the Bates family. The story of her purchase, voyage, and arrival has already been told in our columns, so that we need do no more at present than supply her picture and her pedigree. It is a source of pride to all stock men in this country that we possess these choice animals, and Mr. Cochrane has universal good wishes that he may find his large outlay a profitable investment.

**PEDIGREE.**

"DUCHESS 97TH," Red. Calved March 27th, 1867. Bred by Capt. Gunter, Wetherby Grange, Yorkshire; got by "3rd Duke of Wharfedale," 21619, Roan, bred by Capt. Gunter.

PEDIGREE.	DAM.	Colour of Dam.	Breeder of Dam.
Dam.....	"Duchess 92,"	Red .....	Captain Gunter.
g. d.....	"Duchess 84,"	Red and White.	Captain Gunter.
gr. g. d.....	"Duchess 72,"	Roan .....	Captain Gunter.
gr. gr. g. d.....	"Duchess 67,"	White .....	Earl Ducie.
gr. gr. gr. g. d.....	"Duchess 59,"	Roan .....	Thos. Bates.
	"Duchess 56,"	Red and White.	Thos. Bates.
	"Duchess 51,"	Roan .....	Thos. Bates.
	"Duchess 41,"	Roan .....	Thos. Bates.
	"Duchess 32,"	Red and White.	Thos. Bates.
	"Duchess 19,"	Yellow Red....	Thos. Bates.
	"Duchess 12,"	Red and White.	Thos. Bates.
	"Duchess 4,"	Red and White.	Thos. Bates.
	"Duchess 1,"	Red and White.	Chas. Colling.

SIRE.	Sire's No.	Colour of Sire.	Breeder of Sire.
"4th Duke of Oxford,"	11887	Red and White.	Earl Ducie.
"Archduke,"	14099	Roan .....	Capt. Gunter.
"4th Duke of Oxford,"	11837	Red and White.	Earl Ducie.
"Usturer,"	9769	Roan .....	W. Hall.
"2nd Duke of Oxford,"	9046	Roan .....	Thos. Bates.
"2nd Duke of Northumberland,"	8646	Red and White.	Thos. Bates.
"Cleveland Lad,"	8407	Rcan .....	Thos. Bates.
"Behvdero,"	1706	Yellow Red....	Thos. Bates.
"2nd Hubback,"	1423	Y. Red & White.	Thos. Bates.
"2nd Hubback,"	1648	Y. Red & White.	Thos. Bates.
"The Earl,"	646	Yellow Red....	Thos. Bates.
"Ketton 2nd,"	750	Roan .....	Chas. Colling.
"Comet,"	155	Roan .....	Chas. Colling.
"Favourite,"	252	Roan .....	Chas. Colling.
"Daisy Bull,"	186	Roan .....	Chas. Colling.
"Favourite,"			
"Hubback,"			

**Oldest Horse.**

PERHAPS the oldest horse in Ontario is owned by M. Yoder, of Springfield, Elgin County.

Old "Jerry" was bought at Mitchell's Corners (now Aurora), twenty years ago. He was sold at that time for an old horse. Twenty-five years ago he was a dashing roadster on Yonge St. He is no doubt now over thirty, and as fat, plump, and handsome as a four year old colt; will not bear the least touch of the whip, and is as shy and notional as he was at his prime. If this is noticed by anyone around Aurora who remembers the horse, will he please send his

exact age to the CANADA FARMER, as no doubt many would like to know the age a horse may live to with proper care, and be useful.

Would it not be well to have high prizes at Agricultural fairs for the best old horses? Any one can have a good colt, but it is only a good, kind horse-man that can show a sound, active old horse. We see many horses at twelve that are old, prematurely old, every joint out of place, and the owners will boast of heavy loads drawn and long drives.

Old "Jerry" may not be the oldest horse in Ontario, but he would be matched for strength, roundness of form and mettle against any horse over twenty-five in the New Dominion.

The Merino ram, Golden Fleece, owned by Messrs. Mason & French, of New Haven, Vt., recently died of lung fever, or pneumonia. He was valued at \$10,000.

The Iowa Homestead has an article designed to show that "the extra large breeds of swine are not so valuable for general use as the medium weights."

## Veterinary Department.

## Colic in Horses.

Colic is a frequent complaint amongst horses during the fall season of the year, and farm horses are exceedingly liable to attacks of this very painful disease. At this period a common cause is the sudden change in the state of the temperature; a cold, raw day being a prolific cause of the disorder. It is also produced by turning horses out to grass at night, and giving them, when taken up in the morning, a large feed of oats, and immediately afterwards putting them to rapid or heavy work. It is also brought on by allowing an animal to drink freely of cold water when he is in a heated state. Colic occurs in two forms. When the muscular coat of the intestines is spasmodically contracted, it is known as spasmodic colic. When the bowels are distended with gas, it is called flatulent colic. The former is most frequently met with, and the symptoms are well marked. The horse is suddenly seized with excessive pain; he becomes uneasy, stamping with his feet, and looking round his flanks, all at once he will throw himself down, and attempt to roll over and balance himself on his back; this position seems to give the greatest amount of relief; he will frequently break out in a profuse perspiration. In a short time the paroxysm will pass off, and he will immediately get upon his feet again. But before long the spasms will again return, and perhaps with increased violence, when he will throw himself to the ground and roll wildly about as before. During the period of quietude between the paroxysms, the pulse in many instances will be little altered, and ever the legs and ears are of a natural heat. When the attack is the result of any debilitating influence, as exposure to cold or hard driving, the pulse is quick and weak, and the ears and legs are extremely cold. Spasmodic cholera, although a very painful affection, is generally of short duration, and by no means a fatal complaint. When it terminates favourably the painful symptoms become less severe, and the interval of quietude is much longer. If an unfavourable course of the complaint occurs, the griping pains increase in frequency, and the animal rolls frantically about, sweat pours off him in streams, and the pain becomes almost continuous, and inflammation of the intestines sets in, which speedily terminates in death. Death may also occur from the violent spasmodic contractions. In the treatment of this disease, the patient should be placed where he has plenty of room to roll about as he chooses; nature tells him the position which gives relief. Frequently poor animals are subjected to very harsh treatment with the view of keeping them upon their feet; the whip is freely applied and they are kept trotting about, which, instead of relieving, has a tendency to aggravate the symptoms, and we have no hesitation in saying that many valuable animals are lost from this absurd and cruel practice. There are many medicines used which have an excellent effect in giving speedy relief. One of the best is one to two ounces of the tincture of opium, given in four to six ounces of water or linseed oil. If no relief follows in one hour, half the dose should be repeated. Injection of soap and water should be given every half hour, and the abdomen well hand-rubbed. When the pain is very severe, hot cloths applied to the belly have a very good effect. Except in cases where inflammation of the bowels is likely to take place, blood-letting is not required. After a severe attack it is always advisable to allow the horse a day's rest.

**SCRATCHES ON HORSES.** A correspondent of the *Country Gentleman* sends that journal the following recipe, which he pronounces "the best medicine that can be made" for the ailment above-named:

4 oz. ointment of rosin;  $\frac{1}{2}$  oz. finely ground verdigris; 2 oz. turpentine;  $\frac{1}{2}$  oz. oil of origanum;  $\frac{1}{2}$  oz. tincture of iodine;  $\frac{1}{2}$  lb mutton tallow. Mix all well.

Wash the foot clean with castile soap and soft water, and apply the ointment after the foot becomes dry. Once a day will be sufficient to apply the ointment.

## The Dairy.

## Dairymen's Association.

The Secretary of the American Dairymen's Association has sent out the following, which is worthy the attention of dairymen.

The time has now arrived when dairymen should be preparing for the next annual convention of this Society. They are now in the midst of cheese making, and are favorably situated for experiment and tests, for proving or disproving the various theories relating to the business; for searching for the causes of the troubles which the practical cheese-maker so often encounters. For instance, there is an almost universal complaint this season, of the floating curd. Careful observation on the part of many dairymen in various sections, when brought together and compared at the convention, may lead to a solution of this difficulty, by pointing out the cause, and thus indicating the remedy; and so respecting other troubles.

Besides, the subjects under discussion at the meeting last January were by no means exhausted, and it is known that scores of factories are testing the value of the suggestions then made regarding curd, milk, two days' pressure, etc. Let us have the result of these tests.

It would add greatly to the interest of the convention if members practical dairymen would take a more prominent part in the meetings, coming with short and carefully prepared papers on subjects connected with milk and cheese giving the results of experiments and the conclusions drawn from them, of the theories and practices respecting cheese-making, or any of the details of the process, and the reasons and observations which have induced the change.

Another valuable feature might be added in the introduction to the notice of the convention of samples of cheese, shown for their style, manner of manufacture, or for other reasons, not with a view to competition, but that this demonstration may be made of the value of the experiments of which the cheese shown is the result.

Communications from dairymen and others upon subjects relating to this matter, or making suggestions respecting the next annual meeting, will receive prompt attention.

Let members begin at once to prepare themselves to add to the interest and value of the convention of January 1869.

## New Milk Cooler.

A milk cooler, exhibited at the Herkimer County Fair, deserves special notice. On first inspection it might be mistaken for an ice cream freezer, but after a closer examination and a little explanation from the stranger who was exhibiting it, it was found to be a device for cooling milk as it is drawn from the cow. The construction being novel, and of some interest to dairymen, we will attempt a brief description for the benefit of our readers. The milk, as it is poured into it, passes in a thin circular sheet, about the thickness of wrapping paper, for a distance of about three feet, between two thin metallic surfaces, over which cold water is constantly passing. By this means the animal heat is entirely removed, and the milk reduced, gradually but immediately, to any degree of temperature desired. A thermometer being attached to the machine, having its bulb immersed in the cooled milk, enables the operator to watch and control the process. The milk, after being cooled, is collected together and passed out through a tube, to which a faucet is attached, into a pail or can. It is claimed for this little affair, which is called the "Empire Milk Cooler," and which a child can carry in his hand, that it will cool milk as fast as four or five men can milk. Gardner B. Weeks, the Secretary of the American Dairymen's Association, has examined it, and recommends it for general use in private dairies, as well adapted to put the milk in admirable condition for sending to the cheese factory or market. The machine can be readily taken apart and cleaned, with the greatest facility. We hope an arrangement will be made with some of our manufacturers of dairy utensils, to enable our dairymen to test the utility of this cheap and simple device. If one-half which is claimed for it is true, it will indeed be a valuable accession to the dairy interest. It took the first premium at the State Fair. The inventor is Dr. M. F. Potter, of Kaneville, Illinois. *Am. Exchange.*

The London dairymen have decided that the most profitable cows are graded short horns, not because they give more milk, but because when past milking they make most beef.

## Poultry Yard.

## Pigeons.

To the Editor of THE CANADA FARMER:

Sir,—A few remarks on fancy pigeons, in continuation of the letter which appeared in the CANADA FARMER of September 15th, may interest some of your readers. Fantails are perhaps the most numerous of any fancy pigeons in Canada, and are sometimes pretty good; but they are far behind the "Side View" in Tegetmeier's Fantail. Many have tufts, but want that shape and fineness of neck so desirable. I have never seen any with the carriage up to the English standard.

The best fancy pigeons in Canada are the Trumpeters, although here they are called Drummers. They are as a class deficient in size, but the moult and feathering are good. They are chiefly whole-colored. The Black Mottled are considered the best; but I remember in the year 1830, seeing at Mr. Warner's, of Hoddesdon, Hertfordshire, England, what I have never seen since, a large flight of these birds, which were white, with little black crescents all over their plumage. They were very similar in color &c. to the picture given in Mr. Eaton's work, but, if possible, more uniformly marked. The effect of this plumage was very pretty and peculiar.

Turbits are scarce in Canada, some few specimens are good, but there are not many, although from the markings of the mongrels in the streets there appears to be a very general tendency to Turbit shoulders.

Owl Pigeons in Canada are represented by one pair. There are some breeds called such, but very inferior specimens.

Runts are unknown. There are plenty of mongrels, but no true Runts.

Of the German Toys I have seen attempts, but nothing very striking, and of course they are very scarce.

I was almost forgetting the "Bath." Mr. Johnson, of London, exhibited a good pair at the Ontario Show. These are the only specimens I have met with of any merit.

I think I have mentioned all the varieties I have met with. They are all decidedly below par; but as the utility of them is questionable, except as an amusement, it is perhaps no wonder that they should be scarce in a young country like this. Nevertheless, as the Societies are in their annual exhibitions offering premiums for the best of the different varieties, I can but hope that the specimens will deserve the prizes awarded.

F. C. HASSARD.

Toronto, October 20, 1868.

## Ontario Poultry Association.

The first meeting of the season was held on Friday evening, Oct. 16th, in the Agricultural Hall, Yonge Street. There was a fair attendance of members. After the transaction of some routine business, and the election of several new members, the subject of a Fall Show was discussed. It was urged by several members that the holding of two poultry shows in the year was too much, and that the efforts of the society should be concentrated in one annual exhibition, to be held either in the spring or fall, as would be thought most suitable to exhibitors, and advantageous to the public. As the subject was one on which a fuller expression of opinion from exhibitors was deemed desirable, no final action was taken; it was, however, determined on holding a fall show on the 25th of November next, open to the entry of birds of members of the Association only. As this exhibition is not intended for competition, but merely to give fanciers the opportunity of showing and comparing their birds, and of selling and making purchases if desired, no prizes will be awarded. It is

understood that several members of the Association had imported some choice poultry from England and the continent of Europe during the summer, and several more specimens are on the way here. The praiseworthy efforts of the Poultry Association deserve every encouragement; and this contemplated exhibition without prizes should be especially appreciated by the public, as affording an opportunity of improving stock from the progeny of choice imported birds at prices much below the original cost to the importers. We trust the project will be carried out and prove successful. Intending exhibitors should apprise the Secretary of their purpose before the close of the week, as the 7th of the month has been fixed upon as the date, on or before which all applications for pens should be sent in; and the holding of the show will depend on the number of specimens that may be expected. The final decision on this matter will probably be made on Monday, the 9th, when the Association hold their next meeting.

### Duty on Imported Poultry.

A number of valuable importations of poultry from Great Britain and the continent of Europe have recently been introduced into this country at considerable cost by enterprising individuals, who deserve all possible encouragement in their efforts. It is the wise policy of many public bodies in this country, and in general of the Government of the Dominion, to foster in various ways the improvement of our live stock by importations from the old country. The Provincial and other agricultural associations double the amount of premium gained by any imported animal, and the Government have taken off the duty on most classes of live stock imported for the improvement of the breed; but hitherto the class of poultry has not shared in this exemption. The subject was brought up at the last meeting of the Ontario Poultry Association, and the Secretary was requested to communicate with the Commissioner of Customs, and ascertain how the law stood in this matter: for, naturally believing that the same regulation which applied to the importation of cattle extended to poultry, some gentlemen had declined to pay the duty on their imported fowls. The Secretary accordingly wrote to the Commissioner of Customs at Ottawa, and received the following reply:

In reply to your letter of the 17th instant, I beg leave to inform you that the Tariff sanctioned by Parliament on the 22nd May last (31 Vict. cap 44) is the present law governing duties and exemptions on importations into Canada. The Act referred to supersedes all previous rules and orders at variance with its provisions, and the free list in the schedule to that Act not containing any exemption in favour of the importation of poultry for the improvement of the breed, the department has no power to create one, and the article is therefore dutiable as non-enumerated.

I have the honor to be, Sir,  
Your obedient servant,  
R. S. M. BOUCHETTE."

Such being the case, the Commissioner of Customs has of course no option in the matter; but we believe the omission in the law as it stands should be remedied, and now that the matter has been brought under notice, we trust the Department will seek at the next meeting of Parliament to have the class of poultry put on the same footing as other stock; for though not equal in importance to the nobler animals, they should not be overlooked, and the importation of fresh specimens from Europe involves in itself a considerable amount of trouble and expense, which should not be increased by the additional burden of a Government impost.

A Parisian speculator sent a large number of carrier pigeons to Lisbon, to replace the telegraph, when all communication with Spain was interrupted

## Entomology.

### Cockroaches.

These disgusting creatures, which swarm at night in the kitchens and cellars of houses in towns, are happily seldom or ever seen in the country, thus lending an additional though negative charm to farm life. Many nervous people and cleanly housewives detest them—indeed to such an extent that they would gladly exchange the comforts and conveniences of town life with cockroaches, for the, to them, more dull existence in the country without cockroaches. To be sure we have them in the country, but then our rural species are only found under stones and the bark of old stumps, and very rarely, if ever, in houses. The domestic species, like many of our most noxious insects, is an imported pest, and not a native of this country; it is supposed to have come from the East Indies originally, by the aid of commerce, and thus to have spread all over Europe in recent times; thence it came to the seaboard towns of America, and now it is to be found in all our large towns and cities, even a thousand miles from the sea. Its flat form enabling it to creep under the hoops of barrels and into the crevices of trunks and packing cases, as well as its secret nocturnal habits, causes it to be carried about without notice, and renders easy its establishment of colonies all over the world. Though commonly called a "black beetle" it is not a beetle at all, but belongs to the soft bodied straight winged order of insects (*orthoptera*), which includes also crickets, grasshoppers, and locusts; all of them have their under wings, when not in use, beautifully folded up like a fan, in long straight plaits over their back; and they also differ from beetles in undergoing no complete transformation in coming to maturity, the larvæ being generally only distinguished from the adults by the absence of wings and variability of size, and the pupæ (unlike those of most orders of insects which are inactive during this stage) by their rudimentary scale-like wings. Our common species is about an inch long, and of a dark brown colour; in the eyes of most people it is a sufficiently repulsive object, but what would our lady friends say if they found their larders and pantries infested by the kind that swarms in the tropics whose wings expand six inches, and whose bodies and appetites are large in proportion! We have in our collection a specimen brought us from Mexico whose wings expand five and a half inches, while its body is two and a half inches long and an inch broad; with the exception of breadth of wing, it is as large as the immense emperor moth that we figured in our last number. Fancy such huge beasts flapping about your kitchens and trailing their loathsome bodies over your various household stores, and then thank Heaven that you live in Canada, and not in the tropics! They are said to devour all kinds of victuals, dressed or undressed, and to damage all sorts of clothing, leather, books, paper, &c., which, if they do not destroy, they at least soil with their filthiness. They swarm by myriads in old houses, making every part filthy beyond description. They have also the power of making a sharp knocking with the knuckle upon the wainscoting, whence one species is called the drummer in the West Indies, and thus they keep up replying to each other through the night, to the great annoyance of those who are trying to sleep; those who do sleep are even said to be sometimes attacked by them, and they will also eat the excrements of the dead. Thus it appears that there is no respite from them at night, asleep or awake, dead or alive, they give no peace!

The common household species in this country, though bad enough, is of course not to be compared to the foregoing. As is well known, it is nocturnal in its habits, biding itself during the day in holes and crevices, under the skirting boards of rooms, &c.; it is very fond of heat, being generally found in

the greatest numbers near stoves and furnaces, and especially about bakers' ovens, where they have the additional attraction of a constant supply of food. It eats flour, bread, meat, in fact all kinds of provisions, and has a particular relish for anything greasy or oily; it is fond also of the blacking on boots, and will sometimes eat leather and all. If any one wants to know what cockroaches look like, all he has to do is to go at midnight with a lighted candle or lamp, and suddenly enter the down-stairs kitchen of some friend's house in town; he will see these disgusting creatures scuttling off in every direction over the tables and floor, and will probably learn quite enough about their appearance in a very few minutes.

How to get rid of these creatures is the next question. A capital trap for them may be made with a small wooden box, having a circular hole at the top fitted with a glass rim, out of which it is impossible for them to escape. It should be nightly baited, and the contents thrown the next morning into scalding water. Various poisons are also used with success; Dr. Harris mentions the following:—Mix together a table-spoonful of red lead and of Indian meal, with molasses enough to make a thick batter, and place the mixture at night on a plate or piece of board in the closets or on the hearths frequented by them. They will eat it, and become poisoned thereby. The dose is to be repeated for several nights in succession. Another mode is to mix one teaspoonful of powdered arsenic with a table-spoonful of mashed potato, and crumble one-third of it every night, at bed-time, about the kitchen hearth, or where these insects will find and devour it. As both these preparations are very poisonous, great care should be taken in the use of them and of any portions that may be left.

MOSQUITOES IN ENGLAND.—The tropical heat of last July, which prevailed in Northern Europe as well as in this country, appears to have rendered the gnats of England peculiarly rabid, as we may judge from the following account taken from an old country paper:—

"A large number of girls and boys employed in the East Laboratory, or marsh portion of Woolwich Arsenal, have been disabled by the mosquitoes, the swelling and irritation in some cases assuming an alarming and dangerous appearance. The stings are treated at the Arsenal Infirmary by an alkaline lotion of common soda and water, the poison emitted being an acrid acid. Several entomologists have visited Woolwich, and they all agree that the insects are the *Culex pipiens* of the gnat genus, common to the watery and marshy places of all countries, but deriving additional vigour and ferocity from a warm and moist condition of the atmosphere. Legions of these English Mosquito larvæ can be seen in the stagnant ditches at North Woolwich and the marshes at Plumstead. They thrust a sharp and strong proboscis into the soft skin, preference being given to females and children. Though they become more blood-thirsty and venomous in wet weather, some experiments made with them in the arsenal prove that they can resist any degree of cold."

A few years ago we remember an English medical friend of ours, who came out to settle in the backwoods of this country, was obliged shortly after his arrival to place his arm in a sling, on account of a single mosquito bite; he soon, however, became more accustomed to them.

WATER SNARES.—We are much obliged to "Zebra" for the interesting specimens of these curious creatures that he has allowed us to retain. We purpose preserving them in alcohol. His duplicate specimens, we should think, might be kept alive for some time by frequently changing the water in which they live. It would be an interesting experiment to present the young ones with a grasshopper, cricket, or other insect, and observe whether they would attack it or not. Our correspondent states that he finds them an unerring weather glass, as they poison themselves at any distance between top and bottom of the water in the vessel; we have observed the same thing with leeches, which we have kept for some months in water, and always noticed that they varied their position in accordance with the greater or less density of the atmosphere.





## Winter Barley—Crops in Hastings, &c.

To the Editor of THE CANADA FARMER :

SIR,—I am pleased to hear that you have sent for some of the wheat advertised by Mr. Deitz, and shall be interested in learning how it succeeds with you.

I see by his circular that he advertises a variety of winter barley for sale. Would it not be worthy of experiment? Some varieties of it must be very hardy to grow and mature in latitudes where, if I am informed correctly, other cereals do not flourish. In high, loamy land, too light for the spring barley, for the short time it has to grow, it would, perhaps, be valuable. Another advantage would be its ripening earlier, so that a crop of buckwheat or turnips could be sown after it. It weighs more to the bushel than spring barley, and is therefore more profitable. How can a straw-cutter be used to best advantage in economising fodder? Would it pay to cut up corn-stalks for cattle? If you would favour us with an article on the use of it, it would be of interest. Our crops here are rather light, especially spring grain. Many fields of peas were not harvested—some yielded nothing but straw, never blossomed. Such kinds as grow very quickly would be best adapted for such a season. Farmers have sown more fall grain than usual, I think. On stiff tenacious clays, the growth of fall grain should be encouraged. Clover crops were benefited so much by a liberal dressing of plaster and the early rains, that they bade defiance to the drought, and a large crop was obtained in good order. The second crop was rather poor, and not worth sowing for seed in many places. Potatoes are very much benefited by the late rains; but other root crops are poor. I sowed turnips twice without success; but I have a few rows of fine carrots. I think other roots are surer than turnips, mangold wurzel, kohl rabi or carrots. There will not be a large crop of fruit hereabouts. Apples, in old orchards especially, are small, and bear evidence of the severity of the drought; but young trees, properly mulched and attended, bear fine large apples. Is not fresh manure injurious to young apple trees? What is the best dressing? We have a green-gauge tree on our place, apparently very thrifty, but it never bears. What would be the best way to make it fruitful? The Web Fall Caterpillars were very numerous on the trees here, not only on the apple. JOHN LEBOUTILLIER.

Sidney, Sept., 1868.

NOTE BY ED. C. F.—We have to apologise to our correspondent for the late appearance of the above letter. The pressure of Exhibition and other matter has prevented an earlier insertion. With regard to the use of corn-stalks for fodder, we can say from personal experience that, cut with the straw-cutter, and mixed with other food, they are useful and economical. In Illinois we fed them both in this way, using horse power to the straw-cutter, and also by the ruder and more common method of turning stock into the fields after the corn crop was gathered. The feed contributed its full share to keep our cattle in excellent condition. We believe barnyard manure and ashes a good dressing for orchards. Other miscellaneous queries shall receive attention as soon as possible.

A LADY writing from Hull Township has our best thanks for her pleasant communication, which is, however, too late for more than this acknowledgment in our present issue. We reserve it for the earliest opportunity of publication.

WEANING COLTS.—An inquirer from Quebec, over the signature "Gosford," writes:—"If any of your correspondents practically acquainted with a good way of weaning colts would give the benefit of his experience through your columns, he would confer a great favour."

We hope some experienced farmer or breeder will respond to the above.

ALDERS.—PAINTS.—A correspondent sends us the following brace of enquiries:—"Please inform me, through the medium of your paper, the easiest and most effectual method of eradicating the 'Alder bush' so often found growing on our streets, uncultivated fields and fence corners—also, the different ingredients and proportions used for painting agricultural implements and waggons. Colours, red, blue, green, yellow, and brown."

ANS.—The Alder flourishes on wet land and river sides. We never saw them in the streets. Grubbing and draining will destroy them. With regard to the second query, the proportions of oil and solid material to produce the requisite consistence will soon be ascertained by experience. For the colours mentioned the following ingredients are required:—Red, Venetian red; blue, Prussian blue and a little white lead; green, Brunswick green; yellow, chrome yellow and a little white lead; brown, black, with a little Venetian red.

DEEP PLOUGHING.—A subscriber, whose example we highly commend, sends us the following communication and enquiry:—"I have just finished ploughing a field with three horses. I ploughed it about twelve inches deep. The soil is a stiff clay, and it is very hard in the bottom. Would you be kind enough to inform me whether I could cultivate such land any deeper? Would it be best to plough it again this fall, or plough it in the spring?"

In reference to the deep ploughing, our correspondent does not inform us what sort of plough he used. It is not well, especially in cold clay, to turn up to the surface too much new soil at a time, though it can hardly be loosened too deeply. The next ploughing would be most advantageous in the spring, or might perhaps be dispensed with by the use of a good cultivator. Our correspondent is in the right track, and will no doubt see the benefit of his trouble in augmented crops. An excellent method of deep cultivation is to follow in the furrows made by the first plough with a subsoil plough that shall loosen and stir the ground to the depth of several additional inches without bringing fresh soil to the surface.

## The Canada Farmer.

TORONTO, CANADA, NOVEMBER 2, 1868.

### Westward Emigration.

THERE is no denying the fact that a large proportion of the fresh arrivals of emigrants from the Old Country pass through Canada to settle in the Western States. We continually meet in the daily papers such announcements as the following:—"A train of five hundred emigrants passed through the city to-day, most of whom were bound for Wisconsin, Illinois, or Iowa." Of these a large number may be Germans or Norwegians, but there is no doubt that, even from British ports, a considerable proportion of those who cross the Atlantic and land on our shores do not take up their permanent abode with us, have not come out with a view of instituting any comparison of the relative advantages of Canada and the States, but left home with the fixed intention of settling in the fertile lands of the adjacent Republic, and using this country merely as the readiest highway to the West, scarcely even look upon us, and "pass by on the other side." It would occupy far more space than the limits of an article in an agricultural journal to discuss fully the reasons or the merits of this widespread preference, but it may not be amiss briefly to notice the important subject, and show why we do not think that even the most favoured regions of the West possess any overwhelming advantages, as a field for emigration, over the unoccupied and inviting portions of our own Dominion.

In addressing British subjects it is hardly necessary to say that there is nothing in the government or institutions of the United States that will secure a

greater amount of personal freedom and social rights than will be found under British or Canadian rule. All that is best and noblest in the constitution and laws of the "Great Republic" had its origin in the spirit and institutions of the mother country: and there is no people in the world who enjoy more true liberty than the subjects of Great Britain. Nay, more; we are fully convinced that in this respect there is no nation under the sun can boast of equal advantages. No one, now-a-days, will exchange the British dominions for any land on the face of the earth, to secure greater freedom than is enjoyed throughout the whole extent of the empire.

If it is not the government of the United States, is it the climate of the country that gives the Western portion any superiority over ours? In this respect, we believe the advantage is with us. Of course over so vast a territory there is great diversity of climate; but comparing our own with that of Wisconsin, we perceive a close similarity, while in many respects we prefer the climate of Canada to that of Michigan, Central and Northern Illinois, or Iowa,—the portions of the West with which we are best acquainted. In these States the cold is more severe than it is with us, the heat of summer is more intense and trying, and the changes of temperature are more sudden and extreme. The snow, which generally for a long season covers the face of the earth in Canada, is also a great advantage, both as a protection to winter crops, and as affording facilities of traffic and travel. In this country we are also comparatively free from those intermittent and other fevers that prevail to so serious an extent over a large portion of the Western States. Most people who have lived, as we have done, in both countries, will give the preference to Canada, as regards climate.

Granting that the broad West cannot boast of a finer climate than our own, it may be claimed that the soil of the region is superior. We will acknowledge that it is more uniformly of excellent quality. The prairie land especially cannot be surpassed in richness and fertility; and for the growth of the staple crop of the country, Indian corn, both soil and climate undoubtedly surpass the very best districts of Canada. But this is not the case in regard to other crops. The cereals flourish best with us; and the average yield of wheat especially is larger, per acre, throughout the whole of the wheat-growing region of the Dominion, than anywhere in the States. The place of corn, too, as winter food for stock, is well supplied by roots, which find a more congenial soil here than either in the South or West. Many portions of this country are also as well adapted for the growth of all kinds of fruit as any part of the West.

With regard to the profits of agricultural produce, we are nearer the seaboard, and of course nearer the markets, than our neighbours, and command, therefore, a higher price for all we can raise. This is a most important consideration, and would counterbalance any presumed advantage of either richer soil or cheaper land. The same remark applies to the profits of live stock. If we have no unoccupied prairies for free pasture, we can sell at a price that will amply repay the additional cost of raising; and we can point to the success of our principal breeders, and the excellence of their stock, in evidence of the profitable field which Canada offers for this branch of agriculture.

There is again another point in which we have the advantage; namely, the cost of living. The heavy taxation and the unsettled state of the currency, consequent on the late unhappy war, have so depreciated the value of American money and increased the price of all articles of clothing and most of the necessaries of life, that the United States has become notoriously a dear place to live in. Many have been tempted by the deceptive accounts of high wages in the States, forgetting to make allowance for the depreciated currency, have left Canada to try their fortunes on the other side, have been wofully disappointed, and after a longer or shorter trial have

gladly returned to this country, poorer but wiser than when they left it.

If we allude to another consideration which will have weight chiefly with Englishmen, that is, the sympathy they will meet with here and miss on the other side in regard to their national predilections, we trust we shall give no offence to any right-minded American. It is of the highest importance that friendly and fraternal feelings should be cultivated between neighbours so closely allied, and from personal experience we have every reason to speak well of the frank, kindly, and generous disposition of those Americans with whom we have come into closest contact. During a residence of six years in the west, we do not remember hearing a single remark calculated to wound our national partialities or give offence to our patriotism. But while we gladly give this testimony in regard to our personal intercourse with the people, we must be allowed to make exception to the tone of too large a portion of the American press, and record our conviction that a loyal Englishman would be more at home in Canada than in the land of the *New York Tribune* and other organs and abettors of Fenianism, the maddest and most wicked phase of anti-British mania. Moreover, it is not to be denied that a reckless and lawless spirit is too prevalent in some portions of the country; though this remark applies less to the West than to the South, where Liberty is so very rampant that a trusty revolver is a necessary weapon of self-defence against her vagaries.

No doubt a large amount of the popularity enjoyed by western lands, and the consequent influx of emigration, is due to the liberal policy of the American Government in the free grants of land and the general encouragement given to emigrants. Much also is due to the filial and fraternal spirit that induces the Irish, Germans, Swedes, and Norwegians who have found a home on this side the Atlantic to expend their first earnings in assisting other members of their families from the fatherland to join them in their newly adopted country. The whole subject is one of great and pressing importance, demanding the serious consideration and the prompt and liberal action of the Canadian Government. Much may also be done by disseminating correct information respecting the resources and prospects of this country, not only in England, but also in those parts of the European continent whence the stream of trans-Atlantic emigration chiefly flows. New railroads are projected, new territory will be opened up, and many fresh inducements are yearly growing out of the progress of our Dominion that should bring a large accession of population to this country from the struggling classes at home. We frankly avow our belief that as there is no portion of the British colonies so easy of access, there is also none that offers a better prospect to the emigrant than this Dominion of Canada; and we have yet vast tracts of territory inviting occupation, that are as eligible for settlement as any district within the limits of the United States.

### Cattle Disease Convention.

We gave some account in our last issue of a meeting held at Rochester, N. Y., during the State Fair, in reference to the Texan cattle disease, at which it was unanimously resolved to take steps toward summoning a Convention with a view to uniformity of legislation in the several States of the American Union, and in the Dominion of Canada, both in regard to the disease now raging, and the regulation of matters connected with the transportation of cattle. The Cattle Commissioners of the State of New York have issued a circular calling such a Convention, and we have pleasure in giving it an insertion in our columns. We have been permitted to see a private letter from one of the New York Commissioners, the Hon. J. S. Gould, to the Hon. D. Christie, in which that gentleman states that the Texan disease is still rife,—that it appears to be most insidious in some of its characteristics, and that positive proof has been obtained that it may be and has been transmitted from native cattle to native cattle, that have never been in contact with the Texans. Mr. Gould thinks we have made a mistake in relaxing the stringency of our regulations, and says that there is an absence of

strict inspection, so much so that an ox with an enormous cancer on his face went through to Buffalo the other day. The circular is as follows:

ALBANY, October 13, 1868.

DEAR SIR:—In view of the ravages of the disease known as the Texas Fever among cattle, and the inadequacy of the laws enacted by the several States for the repression of this and other kindred diseases, and the conflicting provisions of these laws, which have been disclosed since this disease has been prevalent, a general desire has been felt and expressed by farmers, drovers, and the consumers of meat in several States, that a wise and efficient system of legislation should be adopted for the repression and prevention of this and other similar diseases in the several States, so that the laws should be harmonious and adapted to mutual protection. And it has been believed by nearly every one that has expressed an opinion upon the subject, that the best mode of effecting this object is by the assembling of a convention of the Cattle Commissioners of the several States interested in the subject, who would represent all the varied interests of the producing and consuming States, and supply all the information necessary for the full elucidation of the subject, and whose duty it should be to prepare a draft of a law which should ensure the most perfect protection to all parties, to be recommended to the several Legislatures for adoption. And the Commissioners of the State of New York having been requested by the Commissioners of several of the States, and of the Dominion of Canada, to take the initiative in calling such convention,

We do, therefore, recommend that a convention be held in the city of Springfield, in the State of Illinois, on Tuesday, the first day of December, 1868, at twelve o'clock noon of said day.

The object of such convention is to consider the pathology, symptomatology and history of the Texas cattle fever and other infectious and contagious diseases to which cattle and other stock are subject, and the best methods of preventing the spread of such diseases with reference to the interests of the producer and consumer, and also to consider the sanitary requirements of the community with reference to the feeding and rest of the animals in transitu, and to the best methods of slaughtering and preparing them for market. The convention will also prepare a draft of a law which shall provide for the accomplishment of these objects, to be submitted to the Legislatures of the States represented therein for adoption. Each State and Province to be represented by three Commissioners. The Cattle Commissioners of the State of Illinois are requested to secure a suitable place of meeting for the convention.

His Excellency, the Governor, is hereby respectfully requested to transmit copies of this call to the Governors of the several States, where such Commissioners are not already appointed, with a request that they would appoint such Commissioners to represent their States in the Convention.

M. R. PATRICK,  
L. F. ALLEN,  
JOHN STANTON GOULD.

### The Nova Scotia Provincial Exhibition.

FROM the accounts that have reached us of the great Agricultural and Industrial Exhibition of Nova Scotia, it appears that the undertaking has proved eminently successful. The Exhibition was open from the 5th to the 10th of October, inclusive, was largely attended, and excited a warm and general interest. We gather, chiefly from the report of a speech delivered on the occasion by Hon. Joseph Howe, that the great feature of the show was the collection of apples, which we are told could not have been surpassed in any part of the world. Of other fruit there was a fine display. There was also a splendid collection of vegetables. The show of stock was creditable. The principal prizes for cattle were taken by agricultural societies. The world-renowned name of Cunard figures also conspicuously in the prize list. The industrial department bore ample testimony to the mechanical skill and enterprise of the Province. The eloquent speech of the Hon. Joseph Howe, in which he expatiated with patriotic pride on the wonderful progress of the Province and the noble character of the people, closed the public proceedings, which appear to have been altogether of a very enthusiastic character. We hope to receive an official account in the next number of the *Nova Scotia Journal of Agriculture*.

### Book Notices.

**DRAINING FOR PROFIT AND HEALTH.** By Geo. E. Waring, Jr., Engineer of the Central Park, New York. Illustrated. New York, Orange Judd & Co: 245 Broadway.

WHETHER viewed in its relation to the profit of farming, or the health of towns and cities, drainage is well worthy of much more attention than it gets either in town or country. The little work above-mentioned is the completest and most practical treatise we have met with on the important subject to which it relates. Within the compass of some 250 pages, it treats of the reasons for draining; how drains act, and how they affect the soil; how to lay out a system of drains; how to make the drains; how to take care of drains and drained land; what draining costs; will it pay; how to make drain tiles; the reclaiming of salt marshes; malarial diseases; house drainage and town sewerage in their relations to the public health. The illustrations, forty-nine in number, make the practical directions very plain, and altogether this is just the book for an intelligent farmer who has resolved to drain, and means to do the work thoroughly while he is about it.

**THE PERCHERON HORSE.** Translated from the French of Charles Du Huijs, Author of the "Dictionary of the Pure Race;" "Trotters;" "The Horse-Breeder's Guide;" &c. Illustrated. New York Orange Judd & Co., 245 Broadway.

THE breed of horses of whose history, qualities, and characteristics this little work treats, is beginning to attract considerable attention in this country. Four stallions of this class were exhibited at the recent Quebec Provincial Fair, all imported from France within the past two years. We believe they will prove a great acquisition to the farmers of the Dominion, inasmuch as they combine the qualities that are valuable on the farm in a higher degree than any other known breed. Of larger size than the Clydes, being on an average taller and longer, and of scarcely inferior muscular development, they are nevertheless capable of attaining a high rate of speed on the road. Indeed, for moving heavy loads quickly they have no equals, as travellers who have ridden in French diligences and Parisian omnibuses uniformly testify. What the farmer wants is a horse with which he can plough deep, haul a large load, or drive his family to church and market, at something more than a snail's pace. This he has in the Percheron. The work above-named supplies all the desirable information respecting this valuable animal, and we commend it to the attention of the stockmen of Canada.

**AMERICAN AGRICULTURAL ANNUAL FOR 1868. AMERICAN HORTICULTURAL ANNUAL FOR 1868.**

FOR some reason or other, these publications, issued by Messrs. Judd & Co., of New York, have only recently come into our hands. But they have a permanent rather than transient value, and furnish a large amount of practical information, useful any month in the year, and any year in all time. The *Agricultural Annual* contains, in addition to much other valuable matter, nearly thirty pages of information respecting factory cheese and butter-making, which render it worth many times its cost to any dairyman; while its Horticultural companion is crowded with a miscellany of useful and attractive contents, among which it would be difficult to elect what is of greatest interest and worth, without it be the articles on small fruits and new vegetables. Both publications are beautifully and profusely illustrated.

**A FOURTEEN WEEKS' COURSE IN CHEMISTRY.** By J. Dorman Steele, A. M., Principal of Elmira Free Academy. New York: A. S. Barnes & Co., 111 and 113 William Street.

THIS publication is meant as a school text book, but is equally suitable for private use. It is intended to teach such as do not expect to become chemists, nor even professional students, a few leading principles and applications of the noble science to which

it relates. The preface states that "unusual importance is given to that practical part of chemical knowledge which affects our every-day life, in the hope of bringing the school-room, the kitchen, the farm, and the shop into closer relationship." This book is likely to give not a few, who study it, a great desire to study more extended treatises, and if it does this only, it will prove a very useful contribution to the cause of popular education. But beside this it will give many a glimpse of the temple of nature, who cannot possibly explore its mysteries, or study its beauties to any great extent.

#### A FOURTEEN WEEKS' COURSE IN DESCRIPTIVE ASTRONOMY.

This work, by the same author as that last mentioned, and issued by the same publishing house, is also similar in its plan and purpose, and aims to do in the region of Astronomy what the other work does in the domain of Chemistry. Recent discoveries in astronomical science are particularized in this volume, and the latest information concerning Meteors, Shooting Stars, and the results obtained by the Spectrum Analysis, are likewise given. Star maps form a noticeable feature in this work, enabling the teacher and student to get on without either globes or charts. Although farm operations are not to be guided by moon or stars, yet the farmer may well aspire to know something about

"The spacious firmament on high,  
With all the blue ethereal sky  
And spangled heavens, a shining frame;"

and here within small compass, and at a trifling cost, may be found a choice store of knowledge in regard to these familiar and attractive objects.

LESSONS ON POLITICAL ECONOMY. By J. T. Champlin, President of Colby University. New York: A. S. Barnes & Co., 111 and 113 William Street.

LET no "loyal Briton" suspect us of Annexation tendencies in noticing this work, for it does not treat of republicanism, or of any other particular form of government, but deals with subjects common to all civilized nations, as will be seen by a glance at the following summary of its contents:—"Wealth, and the means of creating it; value, cost, price; capital, and its forms; labour, its forms and results; division of labour; aid to production from natural agents; stimulants to labour; taxes; profitable and unprofitable labour; business; exchange; money, metallic and paper; banks and banking; credit; finance; interest; land and rent; profit and wages." A very useful book for the farm library.

VIOLET KEITH. An Autobiography. By Mrs. Ross. Montreal: John Lovell, St. Nicholas Street.

This is a Canadian publication, and from the pen of a Canadian authoress. As a native product, we are quite proud of it. It is well written, paints very graphically scenes from real life, and has an air of truth and actuality about it which cannot fail to interest and impress readers of every class. It is a capital book for the fireside and chimney corner, these long, chill nights which November is ushering in. It is wholesome in sentiment, inculcates lessons of true wisdom, and is emphatically a family book. It is winning golden opinions from the editorial fraternity, and will doubtless have, as it deserves, a wide sale.

THE "RURAL AMERICAN."—The proprietors of this excellent agricultural journal, one of our most valued exchanges, have recently effected several considerable alterations in the conduct of the paper. Some time ago the office of publication was removed to New York City, and the editorial office to the City of New Brunswick, in New Jersey. On the first of October a double number was issued, with the intimation that it would in future be published once a month only, instead of fortnightly, and that its size would be doubled. We think this an improvement. The first monthly number is full of valuable matter, and is an excellent specimen of a practical and interesting journal of agriculture and rural affairs.

## Agricultural Intelligence.

### Annual Sale at Moreton Lodge Farm, Guelph.

The sale of Mr. F. W. Stone's stock, which came off on the 15th ult., was less extensive than usual, no cattle being offered. The lots consisted of Cotswold and Southdown sheep, and Berkshire pigs. There was a fair attendance of buyers, including a number of prominent stock breeders from various parts of the province, but the bidding was by no means spirited, and the sale can hardly be called a very successful one.

Fifteen Cotswold rams were sold. Those put up first, including one or two imported rams, did not fetch good prices, the figures paid for each running from \$28 to \$34. Prices got better when the one shear lambs were brought out, two being sold at \$60 each, one at \$51, one at \$50, and the others ranging from \$50 down to \$31. No Cotswold ewes were sold. The bidding on the Southdown rams was not brisk, and only two were sold—a two and a one shear—for \$23 each. Some Berkshire spring pigs were sold at from \$14 to \$16 each, and a sow for \$22. Nearly all the sheep were sold to breeders outside of the county.

The Swedes are populating Kansas. One party is purchasing 26,000 acres.

The "Township of Tuckersmith Agricultural Society," South Riding of Huron, has been incorporated.

With all the drawbacks, the present crops in the United States are the largest in many years. Such is the report of the Department of Agriculture, at Washington.

The price paid for flax in St. Mary's is \$12 per ton. The *Argus* says that at this price the crop has proved most profitable, and the success attending flax growing will probably induce its cultivation to a still greater extent next year.

The Agricultural Society of North Crosby, in the east division of the south riding of Leeds, having complied with the provisions of the Act, has been incorporated as the "Township of North Crosby Agricultural Society."

The aggregate attendance at the late New York State Fair, at Rochester, is estimated at 68,400. The largest attendance at any State Fair in the State was that held in Rochester, in 1851, the estimate for which is 95,600. The smallest attendance was 27,000 at Saratoga, in 1853.

It is estimated by the *Brampton Banner* that there are over 100 acres of land under hops in the township of Esqueping. The yield the past season was about 600 lbs. per acre, as against 800 last year; the price last year was from forty to fifty cents per lb., while it is as low as fifteen cents per lb. at the present.

FAILURE OF THE HOP CROP IN WISCONSIN.—The success of hop-growing, and the high prices realized in 1867, gave a great impetus to this branch of agriculture in Wisconsin. It was followed by many even to the extent of neglecting the more important cereals; and the failure of the hop crop this year has entailed heavy loss on thousands both of farmers and merchants.

PRIZE WHEAT.—The prize for fall wheat annually offered by the Canada Company, requires that twenty-five bushels shall be placed at the disposal of the Association for distribution. The following gentlemen, representing, we presume, agricultural societies, have obtained samples:—Phillip Armstrong, West York; Jacob Young, Haldimand; William Beattie, South Leeds; G. J. Miller, Niagara; Josh. G. Fisher, N. Huron; P. M. Shannon, South Bruce; Hugh Love, South Huron; F. W. Stone, Guelph; Hon. Asa A. Burnham, Northumberland; Wm. McCann, North Oxford; Jas. Nimmo, Addington; Chas. Ross, East Elgin. The Canada Company retains two bushels, and, strange as it may seem, about two bushels are carried away every year by visitors at the exhibition.

WEST RIDING OF YORK AND VAUGHAN SHOW.—On Tuesday and Wednesday, Oct. 20th and 21st, the Union Exhibition of the West Riding of York and Vaughan Agricultural Societies was held in the town of Berwick. Notwithstanding very unfavourable weather, there was a large number of visitors, amounting to as many as 6,000. In the dairy department there was more than usual competition, and the show of implements was specially deserving of notice. Mr. Abell's extensive works are established in the neighbourhood, and this enterprising manufacturer contributed largely to the implement department of the exhibition. Altogether the show was a success.

ALGOMA FALL SHOW.—The first exhibition of the Algoma Agricultural Society was held early in October, at Sault Ste. Marie. The Secretary of the Society, in a letter to the *Owen Sound Times*, gives a glowing account of the affair. The grain, roots, and vegetables, he says, were particularly fine, "being much over the provincial average in weight, and every sample of cereals exhibited over the standard weight per bushel measure. The prize oats, four pounds over; barley, five; wheat, six." There was also an especially excellent display of "Algoma's pride," potatoes. The show of stock was of course not large, but creditable. We congratulate the Society on the success of their first agricultural exhibition, and their laudable efforts to bring before the notice of their countrymen, and neighbours in Michigan, the resources of the District of Algoma.

OXFORD COUNTY AGRICULTURAL EXHIBITIONS.—R. W. S. writes that "The exhibitions throughout the County of Oxford have excelled anything of the kind ever seen here before. Upwards of \$5,000 have been distributed in prizes (while only \$1,400 were received from the Government grant). This is exclusive of expenses attending such distribution. This speaks well for the rising generation of farmers, and shows that a deeper interest is felt in agricultural progress than formerly. It is computed that 6,000 persons attended the North Riding Exhibition, held at Woodstock. 3,500 passed through the Hall, and \$181 were taken from non-members. There were nearly 2,000 entries. In grain and dairy produce the show exceeded, by far, the same departments of the Provincial Exhibition. The first six Provincial Exhibitions did not equal the North Riding Show in the number of its entries. The same may be said of the South Riding, which was about the same in the aggregate. Several of our Township shows had 1,400 entries each, and one of them has nearly 500 members. Grain never was better. Roots and fruit are better than was anticipated. Horses and cattle are low in condition. Sheep are as good as usual at the annual exhibitions."

ALDBOROUGH AGRICULTURAL SHOW.—The Secretary of the Aldborough Agricultural Society has sent us a letter and clipping from the *St. Thomas Home Journal*, giving an account of the Aldborough Show, with the list of prizes. We regret that it is quite impossible to find room for the whole report. Our present issue is already made up, and half the next will be occupied with the Provincial Prize List. The Secretary has our thanks, nevertheless, for his communication. We can only insert the following extract from the printed account referred to:—

"The last agricultural show of the season in this County was held by the Aldborough Society, at Rodney, on Friday, the 16th. It would almost seem as if the Aldboro' people had purposely held back till the last, in order that they might have an opportunity of surpassing all others. But whether this charge of intent can be supported or not, it must at any rate be admitted that Aldboro', with all its drawbacks, its sand farms and chestnut groves, came out No. 1 in the show list this year. No other Society in the two Ridings made so many entries; no other Society sustained so fair an average in the quality of the articles shown.

The entries in each class were as follows:—Horses, 139; Cattle, 92; Sheep, 67; Swine, 31; Poultry, 28; Grain and Seeds, 133; Roots and Vegetables, 69; Horticulture, 38; Dairy, &c., 57; Home Manufacturers and Implements 105; Ladies' Work, 84; making a total of 843."



## Meeting of the Fruit Growers' Association.

THE regular autumn meeting of the Ontario Fruit Growers' Association was held in the Town Hall, St. Catharines, on Tuesday, 13th October, 1868. The meeting was organized at 11.30 a. m.; the President, W. H. Mills, Esq., in the chair. A large number of members were present from different parts of the country, almost all, however, from west of Toronto, and a fine display of fruit was exhibited.

After the reading of the minutes of the last meeting by the Secretary, D. W. Beadle, Esq., the first order of the day was taken up for discussion, viz.—What varieties of apples are best for market?

Mr. O. T. Springer, of Wellington Square, being first called upon for his opinion, said that he shipped by boat to Montreal the Early Harvest and Red Astracan, followed by the Pinate and Early Strawberry; they arrived in good order, and realized the highest market price. He found the Early Harvest to be liable to spot and crack, and would plant the Red Astracan in preference. He thinks the Pinate a good apple for shipping, a good bearer, firmer than the E. Harvest, and a better bearer than the E. Strawberry; can also be shipped a little greener. He values the Fall Pippin higher than any other autumn apple, but this variety requires high cultivation to secure fair, perfect specimens, else the fruit is apt to be gnarled and spotted. The Ribstone Pippin he considers very valuable. The Snow is apt to spot badly unless highly cultivated, but when perfect commands the highest price. His orchard is between Wellington Square Station and the Lake, of a sandy soil, under-drained, with good natural drainage also; it is about twenty years old. He top-dresses in the autumn with barn-yard manure, and gives it ashes occasionally. He finds the Porter very good, but it requires to be picked before it is perfectly ripe. A red-colored apple will always sell more readily than a green or yellow one; besides, it does not show a bruise so soon. Among winter apples he has the R. I. Greening, Roxbury Russet, Baldwin, Northern Spy, and Golden Russet of Western N. Y. He finds the R. I. Greening a very valuable variety for home sale and shipment, hardy, and bearing an abundant crop in alternate years; the Roxbury Russet one of the most valuable, because it keeps so long, even till June. It is a scarce bearer and slow grower. The samples he has obtained have been fine and of sound quality. An objection to it is that the fruit is very subject to the ravages of the codling worm—more than any other winter fruit. The Baldwin has not been altogether satisfactory; it bears well every other year, but is very subject to worms. Out of eight barrels last year, there was one of bad fruit from this cause. It kept till February, but was often rotten at the core when apparently sound outside; when grown on clay it was better. It is a firm, sound fruit, and does not show bruises; hence its value for shipping purposes. The Northern Spy is the most valuable apple he grows; it puts forth its leaves and blossoms seven to ten days later than others, and thus escapes the late frosts; it grows vigorously anywhere, but requires high cultivation to secure the best results. In pruning, all the centre shoots should be cut out, in order that the fruit may colour well, without which it has no good flavour. It should be carefully handled for shipping, as the skin is thin and the flesh delicate. The tree bears every year, but is slow in coming into bearing, not beginning till it is from eight to ten years old. It keeps well when preserved in an even temperature, as late as till June. It hangs well on the tree, and

commands a higher price than any other winter apple. The Golden Russet he finds not particularly valuable, perhaps because its situation in his orchard is not favourable; yet it is hardy, and a free bearer. It keeps well, ships well, and bears rough treatment, but withers when long kept.

Mr. C. E. Woolverton, Grimsby, said that the Sweet Bough and Golden Sweet yielded more fruit than the Early Harvest or Red Astracan. The Spitzenberg is the best apple for foreign market that he has, especially in Glasgow, Scotland.

Mr. A. M. Smith had shipped the Early Harvest to Montreal, and they arrived in good order. He considers this variety as good as any, and more profitable than the Red Astracan, because it bears better and ripens more evenly. The Sweet Bough is a good early market apple. The Duchess of Oldenburg is a productive, valuable and handsome apple, and commands a high price. The Fall Pippin and Ribstone Pippin are the best fall apples for market. The Black Detroit sells well; its quality is not equal to the Fall Pippin, nor is the tree a better bearer, but its colour makes it attractive to buyers. The Snow does well with him. He thinks the N. Spy a better apple than the Baldwin, but the latter is more profitable, being more productive. The Spitzenberg produces about two-thirds as much as the Greening. The Roxbury and Golden Russets are very long keepers.

Mr. R. N. Ball, of Niagara, said that for foreign market the Newtown Pippin commands the highest price. The Ribstone Pippin is very valuable, and bears every year. The Baldwin is very profitable. The Golden Russet is not quite as long a keeper as the Roxbury Russet, but is a very valuable market fruit. The Rambo spots very badly with him; his is a clay soil; it does better on mixed clay and sand. (Mr. Morse said that it did well on sand with him.) The Greening brings a less price in foreign markets than any other variety—from two to four shillings less than the Spitzenberg. The Roxbury Russet does not take in foreign markets. The Lady apple commands a fancy price. The Newtown Pippin requires a clay soil and high cultivation. He ranks the Green Newtown Pippin first, Ribstone do. second, Baldwin third, for market. The Swaar is too uneven in size. The King of Tomkins Co. is good. Duchess of Oldenburg promises to be a very valuable market apple. The English Golden Russet is hardly as good a bearer as the E. Spitzenberg. The American Golden Russet does not shrivel when kept barreled tight.

Mr. A. Morse, Smithville, said that the Early Harvest is a good apple for local demand, and is a regular bearer; the Sweet Bough and Red Astracan come next; after these the American Summer Pearmain comes in before the fall varieties, and sells readily; it bears every other year. The Fall Jenneting and Duchess of Oldenburg take well and sell well. He thinks highly of the Dutch Mignonne, as it is a prolific bearer, of showy appearance, and sells well; the tree is very hardy; the fruit keeps till the first of January. The Golden Russet has never failed to yield a good crop. The Spitzenberg, Baldwin, N. Spy, Greening, and Twenty-ounce Pippin, all do well. The Talman Sweet bears indifferently with him; it may be owing to its position in a dark river bottom soil. None of the trees on this bottom do as well as those higher up. The Snow does not succeed well with him. The King of Tomkins Co., Cayuga Red Streak, Jersey Sweet, Ribstone Pippin, Grayenstein and Alexander, thrive and bear well. He showed a new large green-coloured cooking apple, ripe in October and November, a good bearer, with crops every year.

The Hon. D. Reesor, Markham, said that he finds the best early apple is the E. Harvest. The Red Astracan is not quite so good in quality. The Fall Pippin and Blenheim Orange are the best autumn apples. The Twenty-ounce apple and Cayuga Red Streak are good. The Snow is sometimes scabby, yet the same tree, with the same cultivation, may next year yield fine fruit. The Esopus Spitzenberg stands highest among his winter fruit. The young trees in the nursery are sometimes killed by the winter, while in the same neighbourhood this variety grafted on the top of standard seedlings has endured the winter well and borne good crops of fruit. The Baldwin is a fair bearer, but the fruit is not so perfect or as fine in flavour as the E. Spitzenberg; it has not, however, had as long a trial with him. They have not had very severe winters since the Baldwin has been fruiting in their neighbourhood. The R. I. Greening is an excellent bearer and a favourite fruit; taking its qualities together, productiveness, flavour and keeping powers, it is much esteemed. The Am. Golden Russet is a good bearer, keeps well, and is of good quality. The Ribstone Pippin on good soil, and when well cared for, bears well; its flavour is usually good, but he has seen something of water-core and dry rot in it. Has seen the dry rot also in the Baldwin, even to a greater extent than in the

Ribstone Pippin. The Snow apple, on sandy and clay soil, sixteen miles north of Lake Ontario, comes to fine perfection; when sent to Glasgow five years ago it brought from \$8 to \$10 per barrel.

Rev. R. Burnet, Hamilton, remarked that the Ribstone Pippin was late in leaf and flower, and hence frequently escaped the later frosts of spring. This apple was generally agreed upon by those present to be the best variety of all when well cultivated; the N. Spy ranked next.

Mr. A. Leslie, of London, recommended the Red Astracan and Duchess of Oldenburg; the Early Harvest was apt to get spotted and wormy. The Sweet Bough succeeds well. He values the N. Spy among the first of the winter apples; the Baldwin he considers tender; the Spitzenberg variable; the R. I. Greening and Golden Russet good; the Snow succeeds well and is a good market variety. The Talman Sweet bears heavy crops on all soils, but is not appreciated; Esopus Spitzenberg not a general bearer. He exhibited a seedling apple that keeps well; until January 1st, and even till March, but then has lost its flavour; it is good both for cooking and dessert.

Mr. O. T. Springer exhibited a new seedling; it was a medium-sized, showy apple, a good dessert fruit, keeping until 1st of March, from a vigorous growing tree, very hardy, and a good annual bearer; the flavour of the fruit is sub-acid, sprightly, juicy.

*Picking and Packing for Market* was the next subject for discussion. Mr. R. N. Ball, Niagara, being requested to describe his method, said that apples should be picked as soon as mature, and then kept in a heap till they sweat, which he considered far better than putting in barrels at once, as it prevented shrivelling. For appearance they should be placed stem down. The barrel should be shaken gently during filling, filled up to the top, and then pressed down about an inch and a half to admit the head, using a pressure of five or six hundred lbs. Only first-class apples need be sent to Europe; any others will prove unremunerative. Two grades might be sold in Canada, but he considered second-class fruit only fit for cider. By a first-class apple he meant one that is free from worms, blotches, and bruises, carefully picked off the tree by hand, and of the average size and form of its kind. He preferred using baskets to sacks for picking, reaching tall trees by means of ladders. When filled and headed the barrels should be laid on their sides.

Mr. Lathav, of Paris, said that each variety of apple has its own season of maturity, and should be picked in accordance with it. He prefers in dry weather to pick, sort, pack, press and head up in barrels at the tree at once, and all on the same day, leaving the barrels out of doors as long as the weather is fine; they will then keep well, and can be shipped to Egypt or anywhere else. This is his practice and experience. He has put up in this way from one hundred and fifty to two hundred bbls., and shipped them to New York, where they have come out perfect. The fruit should, of course, be picked dry, and not opened till it is wanted; and only varieties that keep should be put up.

Mr. Stewart, of Goderich, said some Baldwins were put up in a rough way in barrels, sent to Glasgow, and then forwarded inland some one hundred and fifty miles by rail, and they arrived safe and sound. He said they should be well pressed from a round heap above the barrel to flat.

Mr. Ball said that first-class tight barrels, made with split staves, should be used, and then there would be no shrinkage.

Rev. C. J. S. Bethune, of Credit, on request, gave a very clear and interesting account of the insect which was at work upon the trunk of a young apple tree, brought to the meeting by Mr. Smith, of Grimsby. It was the *Buprestis borer*, *Chrysobothris femorata*.

The meeting next proceeded to the consideration of PLUMS.—The best varieties, and the best methods of preventing the black-knot, curculio, and other insects.

Mr. Lewis, of Niagara Falls, stated that he had been for some time trying to grow plums, but they always dropped off when half grown. He had tried throwing lime into the tree, but it did no good.

Mr. Martin, of Cayuga, found that they did better on clay than sand, and better in gardens than on lawns; the green varieties suffered less from both black-knot and curculio than the purple. He has plenty of fruit, and has taken but little pains with his trees.

Mr. R. N. Ball stated that a friend in Hamilton, who had manured his plum trees with tobacco stems and refuse from a factory, had not been troubled with the curculio since.

Mr. Read, of Port Dalhousie, cuts a semi-circular notch in the end of a long stick, lines it with an old India-rubber shoe, and with it jars his trees, placing under them a sheet, split half-way up the middle to admit the trunk of the tree, and with slats nailed to

the ends to keep it from moving about. He jars his trees regularly every morning from the first formation of the plum until the stone hardens, and destroys every curculio and plum that falls upon the sheet. By the aid of two of his children he performed the work very quickly and with little trouble. He always has a good crop now, and saves also his nectarines and apricots in the same way.

Mr. Ball finds that a few good sharp-set hogs in the plum orchard keep the curculio under.

Rev. Mr. Bethune thinks it now well established that the black-knot is produced by a fungus, and not by an insect, and that it can be kept under by prompt amputation. The insects found in it merely make use of it as a convenient abode, and are not the authors of the trouble. He considers that the only effectual remedy for the curculio is that described by Mr. Read, viz., jarring them off by sharp blows into a sheet spread below, and destroying those that fall by fire or boiling-water; also gathering up the fallen fruit as fast as it falls, and destroying it with the living larva inside. He recommends, where practicable, keeping hogs in the orchard, who will destroy not only the curculio but also the codling worm.

Rev. R. Burnet has found that the curculio very seldom travels much, and that one may be quite sure of saving the fruit in his own garden by this jarring and killing process.

Hon. D. Reesor wished to caution the public against turning too large and too hungry hogs into orchards, as he has known an entire young orchard badly injured by the hogs eating the bark of the trees.

Mr. John Freed said that he had put a quantity of tobacco stems under his plum trees, six inches deep, also some in the branches, but the curculio did not seem to be inconvenienced by it in the least; one of his neighbors keeps his hogs in his orchard, and finds that they do good service.

Mr. J. Arnold, of Paris, whitewashed the ground under several of his trees with a thick coat until it formed a crust; the curculios did not trouble those trees, but affected all the rest.

Mr. W. H. Mills, of Hamilton, said that the brightness of the white surface kept the curculio from the trees so treated and drove them to the others, and that if Mr. Arnold had whitewashed beneath all his trees he would have found that the curculio would have attacked all alike. He himself found nothing equal to the jarring process.

Hon. D. Reesor enquired whether salt under the trees would kill the curculio. Mr. Beadle replied that the experiment had been tried, and that the grub was seen to creep through several inches of salt uninjured.

With regard to varieties, Mr. W. H. Mills thinks highly of the Columbia as a cooking plum; it ripens unevenly, and is, therefore, a long time in use; the tree is hardy. Reine Claude de Bevey is too late with him; Jefferson is a fine plum; Victoria is large, better than Pond's seedling, Guthrie's Apricot plum was sent by Mr. Saunders, of London; a very fine flavored plum.

After an adjournment of an hour the meeting re-assembled at 7 p. m., and proceeded to the discussion of the best variety of GRAPES.

Mr. A. M. Smith thinks the Adirondac the best earliest grape; his vine has endured the winter so far well; it is a good bearer, and is earlier than the Delaware. Mr. Martin agrees with him.

Rev. R. Burnet, Mr. Holton, and Mr. Freed have not the Adirondac; with them the Hartford Prolific is the best and earliest grape.

Dr. Smith, of Komoka; Mr. Stewart, of Goderich; Mr. J. B. Lewis and Mr. A. Leslie, considered the Delaware the best.

Mr. Farrell, of Cayuga, finds the Delaware and Rogers' No. 3 ripen about the same time; he prefers the latter.

Mr. C. Arnold finds Rogers' No. 3 better and earlier than the Hartford Prolific, and with him the best earliest grape.

Mr. Read considers the Delaware the best earliest, and the Laura Beverly far superior to the H. Prolific, of a better flavor than the Concord, and equally hardy.

Mr. Jas. Taylor, of St. Catharines, thinks highly of Rogers' Hybrids, yet he finds some variability in them. No. 33 is not as fine this year as last. The Laura Beverly is so like the Crevelling that it is not easy to say that there is any difference.

Mr. Morse, of Smithville, has the Concord, H. Prolific and Delaware; of these the last is the earliest—it was nearly ripe on the 30th August.

Hon. D. Reesor knows only the H. Prolific and Delaware of the early kinds; he prefers the latter. In his neighborhood (Markham) these grapes are covered in winter.

Mr. Bauer, of Hamilton, places the Delaware first; he has tried it seven years in all exposures, both North and South, and has had them ripen on the first of September.

Mr. W. H. Mills has a few varieties:—Delaware, Rogers' Nos. 3 and 4, and some others. He considers the Delaware the very best earliest variety; Rogers' No. 4 ripened the same time as it, and a week earlier than No. 3.

The next topic was the best varieties for market.

Dr. Cross was at Hammondsport, N. Y., where a large business is done in marketing grapes; only Catawba and Isabella are grown there, of which the latter is found the most profitable. He himself finds the Isabella on his own grounds more profitable than the Concord.

Mr. Arnold thinks we know but little on this subject; he prefers Rogers' 4 and 15.

Mr. Read considers the Concord and Ontario to be the most prolific; the latter sells most readily on account of its large size. Mr. Taylor confirmed this opinion respecting the Ontario.

Mr. Martin packed the Sweetwater tightly with severe pressure in a box, and sent it to New Brunswick in good order.

Mr. Lewis sold his Isabellas on the vine at four cents per pound; thinks he could have obtained ten cents per lb. for Delawares.

Mr. Stripp finds the fruit dealers do not think much of the Isabella when grown in this Province, as it does not ripen well enough. The Concord ripens well and sells well.

Mr. Freed found the H. Prolific sell better than the Concord. It was generally considered that a large, showy grape sold better than a smaller and finer variety.

The soils best adapted for the several varieties were next considered.

Mr. Smith has a sandy loam, on which the Concord does best.

Dr. Cross has a clay loam, well under-drained, on which the Isabella does best, the H. Prolific next; the Delaware fails utterly. They were heavily manured when first planted.

Mr. Farrell said that his best vines grew on a light soil, but the Delawares did better on a soil somewhat clayey.

Mr. Taylor has a clay loam, on which all do well. The Diana succeeds, and he values it very highly. He thinks we are in danger of manuring too much. Allen's Hybrid is his best white grape, but it is subject to mildew.

Mr. Stewart has a light soil, on which the Delaware and Concord do best.

Mr. Arnold's soil is a mixture of clay and sand with a limestone bottom. The Delaware and Diana do not succeed, but some of Rogers' and his own Hybrids do very well.

Mr. Read's soil is a sandy loam, on which all seem to do well; he has a piece of clayey loam, on which he finds his best specimens. He prefers a rather stiff loam.

Mr. Martin has a strong loam; he thinks that those kinds which make a vigorous growth and have a large leaf do best on clay.

Hon. D. Reesor has a stiff clay loam, on which he has the Delaware of a fine quality, though the quantity has not been large nor the growth rapid. The Concord grows pretty well, but does not bear as much as the Isabella.

Mr. Bauer has a black clay loam, on which the Diana and Delaware do well and are free from mildew; they seem to ripen as early as in Ohio.

Mr. Lewis has a black loam, bordering on clay; all varieties do well.

Mr. Stripp found those Delawares on gravelly limestone soil sweeter than those on deep sand. The Concord when on limestone gravel produced the largest crop.

Pruning and Training of Grapes was next in order for discussion.

Dr. Cross thought that every vine required pruning adapted to its growth, soil, and habit, and that the heaviest pruning should be done when the leaves are off, doing but very little in the summer.

Mr. Farrell succeeded best by a rigid system of pruning.

Mr. Taylor tries not to leave too much wood, but to prune enough to give good well-ripened wood.

Mr. Read trains to a single stake, and prunes according to the age and variety of the vines, leaving buds for fruit accordingly. He does not pinch or prune in summer, but in the fall.

Mr. Martin does not prune in summer.

Mr. Bauer does no summer pruning beyond keeping the stock free from shoots or suckers up to eighteen inches above the ground.

Mr. Lewis prunes just after the vine comes out in leaf, as in winter pruning the cane dies back two to four inches from the place where it is cut; he does no pruning in summer.

Mr. Stripp thought the Diana as vigorous as the Concord, and requiring to be pruned longer than the Delaware.

The meeting then proceeded to taste and discuss the seedling grapes exhibited by Mr. C. Arnold and

Mr. Read. Of Mr. Arnold's varieties, No. 8 was almost unanimously considered the best table grape; Nos. 5 and 16 being next in estimation. No. 16 was deemed a fine wine grape by Mr. Bauer; while the producer esteemed No. 2 above the rest. The only draw back to them was their want of size, which will probably be obviated when they are cultivated in a more favorable soil and climate than that of Mr. Arnold's garden. On motion the following resolution was unanimously adopted:—

"This meeting begs to tender to Mr. Arnold a vote of thanks for exhibiting his new Hybrid Grapes, and earnestly recommends them for trial in all parts of the Province."

Mr. Jas. Taylor stated that he had fruit-d No. 1, and found it much better in his grounds at St. Catharines than the sample shown by Mr. Arnold, grown at Paris.

Respecting Mr. Read's new grapes, the verdict of the meeting was strongly in favor of his Silver Cluster, which was considered to be of a fine delicate flavor of high value. His Hattie and Dominion were also much commended.

Before the close of the meeting the Committee on the fruits exhibited reported as follows:—

"Your Committee appointed to inspect and report upon the fruits before the meeting, beg to present the following:—

Rev. R. Burnet—1 variety of pears, 5 grapes, 9 apples.

Hon. D. Reesor—2 pears, 12 apples.

D. W. Beadle—12 grapes.

W. H. Mills—3 pears, 5 grapes, 3 plums.

W. Saunders—2 pears, 4 grapes, 5 plums.

A. Leslie—1 seedling apple.

W. Holton—22 pears, 8 apples, 1 quince, 3 crabs.

J. Freed—3 pears, 6 apples, 1 quince, 1 crab.

Mr. Latschaw—8 apples.

A. Morse—1 seedling apple.

W. H. Read—14 grapes.

C. Arnold—4 pears, 5 seedling grapes, 6 apples, 2 raspberries.

Wolverton and Smith—6 pears, 5 apples, 2 peaches, 2 quinces, 1 crab.

O. T. Springer—8 apples.

The foreign grapes exhibited by Rev. R. Burnet, and grown by him in the open air, were remarkably fine, particularly the Sweetwater, and a variety called the Hungarian Princess.

In apples the Committee remarked fine specimens of King of Tompkins Co., N. Spy, Boston Russet, Fameuse, Baldwin and Waggoner.

In pears, large well-grown specimens of Duchesse, Vicar of Winkfield, Howell, Swan's Orange and Washington were observed.

The show of plums, though not large, contained fine specimens of Reine Claude de Bevey, Guthrie's Apricot, Denniston's Supperb, Bingham and Columbia.

The display of grapes was large and attractive. Amongst the newer sorts fine bunches of Isabella, Iona, Rogers' number 19 and Adirondac were noticed, and the new Canadian seedlings of Messrs. Arnold, Read, and Rev. Mr. Dixon attracted particular attention.

Your Committee noticed with great pleasure the hybrid raspberries presented by Mr. Arnold, and from the apparent hardy character of the cane with its free-bearing habit, being now loaded with ripe fruit, they think it must prove valuable.

Several varieties of crabs were on the table, and the attention of your committee was drawn to a promising seedling of our native *Pyrus coronaria*, or wild crab, showing what improvement may be hoped for by a little effort in that direction.

Respectfully submitted,

(Signed) CHARLES ARNOLD,  
JOHN FREED,  
W. HOLTON."

MEETING OF DIRECTORS OF THE FRUIT-GROWERS' ASSOCIATION.—On the day after the general meeting of the Fruit-Growers' Association, the Directors met at St. Catharines, for the transaction of business. The subject of offering prizes for the best seedling apples of Canadian origin, was discussed, and although action was deferred until a future meeting, it was the opinion of all that it was desirable to secure additions to the present list of varieties of such as were very hardy as well as productive, and of fine quality. The subject of an experimental garden, in which new varieties of fruits should be thoroughly tested, was also considered, but no action taken. The next meeting of the Association was ordered to be held at Hamilton, on a day to be fixed by the President.

## Report of the Committee on Prize Essays.

TO THE CHAIRMAN OF THE DIRECTORS OF THE FRUIT GROWERS' ASSOCIATION

Sir,—The Committee appointed by the Fruit Growers' Association of Ontario to judge of the relative merits of the essays on the apple and its cultivation as applicable to the Province, beg leave respectfully to report:

That four Essays were submitted to their consideration, bearing the following mottoes, viz.: "The price of good fruit is eternal vigilance." "Vive et discere." "Here's to thee, Old Appleton." "Fine fruit is the flower of commodities." That all the Essays are of superior excellence, and that your Committee had some difficulty in arriving at a satisfactory conclusion as to which was the best.

That the Committee are unanimous in the opinion that the paper with the motto, "The price of good fruit is eternal vigilance," is fairly entitled to be considered the best treatise on the apple, and its cultivation as applied to the Province, and to it, therefore, they award the prize. That they have come to this decision from the admirable arrangement of the Essay, the correct statements on every particular item passed in review, and for the judicious and exhaustive list of the varieties of the apple, as at present known, adapted to the Province.

They further report in reference to the prize Essay, that they find that about two-thirds of the whole are taken up with the important subject of insect pests—a subject yearly pressing itself on the attention of fruit growers; but they cannot but express the thought that in an Essay of eight octavo pages, or thereabouts, that the amount of matter on this point, valuable as it is, is out of due proportion. And further, that the matter of protection to the orchard is overlooked.

Your committee also report in reference to the Essay with the motto, "Vive et discere," that it possesses many excellencies, and that great good might result from its publication. They much regret that the terms of competition did not allow of a second prize, as they are firmly persuaded that with a few emendations valuable results would follow from its also being given an extensive circulation.

That your Committee return the letters with accompanying mottoes unopened, to be dealt with as the Chairman and Secretary of the Board may deem fit.

All which is respectfully submitted by

WARREN HOLTON, } Committee.  
ROBERT BURNET, }

## The Apple and its Cultivation, as Applicable to the Province of Ontario.

PRIZE ESSAY—BY D. W. BEABLE, ESQ., ST. CATHARINES.

**THE SOIL.** It is essentially requisite to the health and longevity of the tree and the perfect development of the fruit, that the soil on which it is planted be perfectly drained. If such a condition does not exist naturally, it must be secured by artificial means; to plant the apple where the roots must be soaked with excess of water during any large part of the year, can only be productive of disappointment and loss. This having been secured, all other questions concerning the soil are of little moment. Any soil that will produce a good crop of corn or potatoes will be found well suited to the apple. No doubt a strong calcareous loam is the perfection of soils for the apple, but with proper care they can be made to thrive well in sandy soils or in a stiff clay. A strong clay is preferable to a light sand. All soils should be thoroughly tilled, and made as mellow as for a crop of grain before planting, and after planting should be kept mellow and loose by cultivation while the trees are growing. Hoed crops are the best for this purpose to raise in an orchard; no doubt the very best way is to keep the ground thoroughly cultivated without any crop, but that is not to be expected of the most of our farmers, who hardly feel able to till the soil so many years without any returns.

**TRANSPLANTING.** The season for performing this operation is in the autumn after the fall of the leaf, or in the spring before the buds break. In this climate experience seems to indicate the spring as the best season. Care should be taken to preserve the roots from bruises and mutilations in the process, and to settle the earth well about them when filling up the hole. In very stiff soils it is better merely to scrape

away some of the surface soil, spread out the roots in their natural positions, and then cover them well with surface soil. The trees should be staked and tied firmly, so that they will not be swayed about by the winds, and in tying them let it be with strips of leather or woollen, and in such a way as not to cut into the bark of the tree. Before the heat of summer comes on, the trees should be mulched, that is, the surface of the ground under the trees, a little farther than the roots extend, should be covered with cow-mano or litter from the barnyard, or with clip manure from the old wood-pile, or spent tan-bark in short, with anything that will keep out the heat of the sun and keep the soil cool and moist. When transplanted trees require watering, the water should be given abundantly, so that it shall descend to the roots; a superficial watering that only moistens an inch or two of the surface is usually worse than none.

**CULTIVATION OF ORCHARD.** Until the orchard comes into bearing, it ought to be thoroughly cultivated and the soil kept mellow and loose. There can be nothing worse for a young orchard than to seed it down and let it lie in grass. The trees should be pruned so as to form an open head, and keep the branches from crossing each other or interlacing. A little pruning each year will accomplish all this, and is much better for the trees than a severe pruning once in several years. The best season for pruning in this climate is the month of April. This gives the wound an opportunity to heal over during the growing season. When it is necessary to remove large branches, the cut should be covered with grafting wax or clay, so as to prevent the exposure of so large a surface to the weather. It is a very bad practice to prune late in the fall; the action of our severe winters upon the fresh wounds is injurious to the tree. It pays well to manure the orchard and keep the ground in as good condition as a good farmer will keep his corn fields. A dressing of leached ashes or of lime put on once in three or four years will be found very beneficial. Attention should also be given to all insects found destroying the foliage or injuring the bark or boring into the wood of the tree, the same kind of attention that would be given to a dog found killing your sheep.

**INSECTS.** The several kinds usually found seriously injuring the apple trees in this Province will be briefly described, and the best known methods of destroying them stated.

**THE ROSEBUDG,** (*Macrodactylus Subspinosus*). This little beetle has not as yet been very generally distributed, but where it has appeared in large numbers it has been very destructive. It is about one-third of an inch in length, slender body, entirely covered with thick, short, ashen yellow down. Its slender legs are pale red, and the joints of the feet, which are very long, are tipped with black. They come out of the ground during the second week in June, or when the roses are in bloom, and stay about forty days. At the expiration of this time the males fall on the ground and die, while the females enter the soil, where each lays about thirty eggs, at a depth of from one to four inches below the surface; they then return to the surface, and in a few days perish. In about twenty days after the eggs are laid, they are hatched, and the little grub feeds on such tender roots as it can find, completes its growth in the autumn, at which time it attains to about three-quarters of an inch in length and one-eighth in diameter, and is of a yellowish white color, with a tinge of blue towards the posterior extremity. In October, the grubs descend so as to be protected from the frost, pass the winter in a torpid state, and in the spring return near the surface, where each forms a little oval cell; within this cell the grub, during the month of May, casts off its skin and becomes a pupa, out of which, in the month of June, the perfect beetle comes forth and digs its way out to the surface of the ground. These beetles are, apparently, omnivorous, eating the leaves of roses, rosebuds, pear, plum, cherry, grape-vine and apple, and where they appear in large numbers they are exceedingly destructive. They also seem to defy all the ordinary applications which have been found destructive to insect life, so that the only well attested and reliable plan seems to be that of catching and killing them. Nor is this very difficult, for their habits are so sluggish and they congregate in such masses, that an active boy can catch and destroy a great many in a day. Whenever they make their appearance no time should be lost, for although they may at first only attack the rose-bushes or even the weeds of the garden, when their numbers have increased, as they will, and that at the rate of five and twenty in a season for every pair, nothing that has leaves will be safe from their ravages. If they have seized upon the apple-trees, they must be shaken down, and gathered and burned or put into scalding water. It would be well worth the trouble to sprinkle a bush upon which they are feeding with white hellebore, diffused in water, say at the rate of two table-spoons full of powder to a common pailful of water,

well stirred, and applied with a common watering pot, and see whether they can be killed by eating that poison.

**THE BOREB,** (*Saperda bivittata*). This beetle has become very destructive to young orchards, and does its mischievous work so silently and removed from observation that the labour of years has been often entirely ruined before suspicion was entertained that any danger threatened. The perfect insect is light brown on the upper side, marked with two white stripes running lengthwise of the body; the under side, the face and the antennæ, and the legs, are white. It is usually about three-quarters of an inch in length. It comes out of the trunks of the trees in June, moving about during the night, and remaining concealed by day among the leaves. During June and July the females deposit their eggs upon the bark of the tree, near the root, at that part usually known as the collar. From the eggs are hatched little fleshy, whitish grubs, without feet, which cut through the bark, and on reaching the sap-wood, excavate a round, smooth cavity, about the size of a dollar, immediately under the bark. It casts out of a hole, which it makes at the bottom of this cavity, its excrements, which appear like very fine sawdust, so that at this stage the presence of this enemy can be readily ascertained by searching for this dust on the ground at the collar of the tree. When it has become about half grown it ceases to cast the dust out of this cavity, and proceeds to fill it up, at the same time boring a passage or gallery upward into the heart of the tree. This gallery is continued upwards of varying length, sometimes not more than two inches, and sometimes twelve inches, and is gradually brought outwards again to the bark of the tree, but not through it. When the grub has completed this gallery, it turns round and returns to that part which is the nearest to the heart of the tree. This part it now enlarges by tearing off the fibre from the walls, and with this fibre carefully and securely closes the entrance, so that if some insect enemy should find its way through the hole in the bark at the collar, into the chamber where it passed the first part of its life, that enemy could not enter the gallery to its present abode. Meanwhile it crowds its sawdust-like castings into the upper extremity of the gallery against the bark, thus at the same time diminishing the danger of attack from that quarter, and keeping its new chamber tidy. Having thus perfected its arrangements, it again turns round so as to have its head upwards, passes the winter in a torpid state, and in the spring, casts off its skin and becomes a pupa, from which in June the perfect insect hatches, climbs to the upper end of the gallery, tears away the fine sawdust, gnaws a hole through the bark, and creeps forth.

It will readily be seen that when several of these worms are at work in any tree, their chambers approach so near each other as to girdle the tree. Unfortunately they are distributed all over our country, and no apple orchard can be considered safe from their ravages; indeed many have been seriously injured, and others wholly destroyed, before the cause of the mischief was suspected.

There are two ways of combating this enemy: the one is a way of prevention, the other one of cure. An application of soft soap (cold-made rosy soap is preferable to the hot made jelly-like soft soap) to the body of the trees, especially about the collar, if made the first of June, and again the first of July, will preserve the trees from the attacks of this insect. It is well to place a handful in the forks of the branches where they separate from the trunk, to be dissolved by the rain and run down the tree. Young and thrifty trees are the favorite resort of this beetle, and they should be especially looked after and rubbed with soft soap.

The cure, when the grub has once effected a lodgement, is simply to catch and kill him. By examining the bark at the collar in the end of August, scraping the outer surface so as to detect any black spots in the bark, the newly-hatched grubs may be found before they have cut their way into the wood, and be killed. In addition to this search, let this part of the tree be washed with strong lye; this will penetrate into the holes and kill any little grubs that have escaped detection. At the same time search should be carefully made for the fine sawdust castings, which indicate a larger worm within, and if these are seen the excavation in the sap-wood under the bark should be found, and the occupant destroyed by cutting into his hiding place with a stout-bladed knife or chisel. If he has made a gallery into the heart of the tree, the upper opening may be found usually from three to six inches directly above the chamber in the sap-wood, by sticking a pin into the bark until, by the ready sinking of the pin, the exact spot is known; then, with the point of the knife, cut away the bark and pour some of the lye into this hole until it soaks through into the chamber below, thus giving evidence that it has passed through the gallery and met the foe. The search for these saw-

dust castings should be renewed at intervals through the fall, winter and early spring, so that none of the borers shall escape.

The BARK-LOUSE (*Aspidiotus conchiformis*). In every part of the Province this destructive pest may be found. Its appearance is that of a minute scale, in form like a muscle or an oyster-shell (hence the name *conchiformis*, shell-shaped), adhering to the bark of the tree. It is about an eighth of an inch in length, colour brown, or nearly that of the bark; and, in the winter and spring, will be found to cover from a dozen to a hundred eggs. Towards the end of May these eggs are hatched, and the young larvae scatter themselves over the tree. These, after feeding on the juices of the tree, are changed into pupae, and then into the perfect insect, the males only having wings, and, after pairing with the females, perish, while the females remain on the tree. Their bodies dry up and form the scale covering the eggs that subsequently are hatched into another generation. The best remedy for these insects seems to be a sort of paint, made by boiling leaf tobacco in strong lye until it becomes an impalpable pulp, and then mixing with it cold-made soft soap (which is rosy, not the jelly-like soap) until it is about as thick as paint is usually applied, and, with a paint brush apply it to all parts of the tree where these bark-lice are found, before the buds swell in the spring. If this be carefully and thoroughly done, the bark-lice will be surely killed, and the tree will make a thrifty growth.

The TENT CATERPILLAR (*Clisiocampa Americana*). This enemy of our orchards is also distributed throughout the Province. As the buds of the apple trees burst and the young leaves put forth, the young caterpillars are hatched on some warm damp day, and creeping out of the eggs feed upon the soft glutinous substance with which they are covered. When this is consumed, they move down the limb, and selecting some convenient fork, spin a web or tent. This tent is their place of abode, from which they go in search of food, and to which they return when they are satisfied, all going out and returning together in regular procession. When full grown, they are about two inches in length, color deep black with a white stripe extending along the back, and on each side of this stripe are numerous, irregular yellow lines, and a row of pale blue oval spots. About this time they leave their tents, and are scattered about seeking some secure place in which to spin their cocoons. These are oval, pale yellow, loosely woven, and the meshes filled with a fine powder resembling sulphur. In this cocoon the caterpillar changes to the pupa state, and from the pupa comes forth the moth, which works its way out at one end of the cocoon. The moth is of a dull reddish buff colour, with two parallel, nearly white stripes, or bands, running obliquely across the fore wings. Early in July they are the most abundant, and in a few days after they come out of the cocoons, the females lay their eggs upon the twigs of the trees in a broad belt, usually encircling the twig, and cover them carefully with a thick coating of glutinous matter, which serves to protect the eggs until the next spring, and then become the first food of the newly-hatched caterpillars.

The best method of destroying these insects is to search the orchards carefully early in the spring, before the buds are swollen, and take off all the belts of eggs from the twigs and burn them. These belts will be found from one inch to twelve from the end of the shoot, and as there are about three hundred eggs in a belt, the gathering of these is a very rapid way of destroying the insects. Yet some will probably escape observation, and it will be necessary to pass through the orchard just as the young leaves make their appearance, and search for the webs or tents in the forks of the branches, and by means of a light ladder ascend so as to be able to grasp the nest in the hand, which may be covered with a good thick buckskin mitten, and crush the worms. It will be necessary to go through the orchard several times, until every tent is destroyed and there are not sufficient stragglers left to form another.

There is another caterpillar much resembling the foregoing, which sometimes gets into the apple orchards, and which was very abundant during the past summer (June, 1868) in the orchards between London and St. Thomas. This caterpillar is *Clisiocampa Sylvatica*—the Forest Tent Caterpillar, and may readily be distinguished from its congener by the row of white spots along the middle of the back. Its nests or webs are not placed in the forks of the branches, but along the side of the trunk or of some of the larger limbs, and is of so slight a texture as to be seldom seen. When nearly grown, they congregate together upon the trunk or some large limb when at rest, and may be then killed in a body. Fortunately they very seldom appear in such legions innumerable as swept over the orchards near St. Thomas last June; but when they do come, the only possible method of saving the orchards is to make a business of killing the caterpillars.

The Codlin Moth (*Carpocapsa pomonella*). This little insect does not feed upon or in any way injure the trees or their foliage, but when numerous make sad havoc with the fruit, causing it to drop prematurely, and disfiguring it with their burrows and rendering it useless. The perfect insect or moth is quite small, yet one of the most beautiful of a beautiful tribe. The expanded wings will scarce extend over three-quarters of an inch; the fore wings are crossed with numerous grey and brown lines, most beautifully scalloped, giving at a little distance the appearance of a watered silk, and near the hind angle of each of the fore wings is a dark brown oval spot, edged with a bright copper color. The hind wings are a light yellowish brown, as lustrous as satin. During the month of July these moths deposit their eggs in the cavity at the blossom end of the fruit; in a few days these are hatched, and the little caterpillar eats its way into the apple to the core, where it feeds upon the fruit until it has attained its full size, at which time it is of a light pink or flesh color. About this time the fruit usually falls to the ground; the caterpillar soon after makes its way out of the fruit, seeks a hiding place, very frequently under the rough bark of the tree, and here spins a thin silken cocoon, like very fine tissue paper, in which it changes into a chrysalis. Some of these are hatched in a few days, and the moths which come out of them lay their eggs in the blossom end of the fruit that had escaped before, and from these eggs is hatched a second brood of caterpillars, many of which find their way into our fruit cellars in the apples. Yet the greater part probably remain in the cocoon all winter, and do not come forth as moths till the following spring.

The remedy for these fruit eaters is to destroy them. This can be done by gathering the fallen fruit every day and using it in such a way as to kill the caterpillars within, or by allowing swine to run in the orchard and devour the fallen fruit. Also by placing pieces of old carpets or other cloths in the forks of the trees, or twisting a straw band around the trunks of the trees, for the caterpillars will seek these as convenient hiding places and here form their cocoons, where they can be easily found and destroyed. Also by building numerous little fires in the orchard about the end of June and during July, for these and many other moths, attracted by the light, will fly into the flame and be burned.

VARIETIES.—A large part of the Province is well adapted to the culture of the apple, and with the exception of the very cold and exposed sections, nearly every variety can be grown. Yet the really valuable varieties are not many, and those that are profitable to the orchardist are still fewer. Of course there will be personal preferences, and as tastes vary very much the nurseryman's list is necessarily large, so as to meet the various and often conflicting wishes of his customers; but he is by no means a wise man who plants a tree or two of every variety he finds in the catalogue, and he will wish when they come to bear that his collection was more select. It will usually be found that an orchard for family use, comprising the following varieties, will give good returns in fruit and furnish a supply throughout the season, namely:—For summer, the Early Harvest and Red Astracan as sour apples, and the Sweet Bough; for early autumn, the Duchess of Oldenburgh; Gravenstein, Primate, and Jersey Sweet; for late autumn and early winter, the Ribston Pippin, Hubbardston Nonsuch, Fall Pippin, and Snow Apple; for mid-winter to March, the R. I. Greening, Northern Spy, Esopus, Spitzenberg, Pomme Grise, and Talman Sweet; for spring, the Golden Russet and Roxbury Russet. With these varieties there will be plenty of good apples until the strawberries ripen.

For market, the most profitable varieties are Red Astracan, Duchess of Oldenburgh, Gravenstein, and Hubbardston Nonsuch, ripening in the order in which they are named, for a near or home market; and for shipping, the R. I. Greening, Baldwin, Golden Russet and Roxbury Russet, will yield the largest pecuniary returns.

In the colder parts of the Province, those parts that are removed from the influences of our large lakes and rivers, it is necessary to plant the hardier varieties. The following will probably succeed well in any part of the Province, and will give a succession of really good fruit, namely, the Red Astracan, Duchess of Oldenburgh, Saint Lawrence, Snow Apple, Borassa, Pomme Grise and Golden Russet. If there be any spot so chill and inhospitable that these varieties will not thrive, recourse must be had to the still more hardy crabs, of which the Yellow Siberian, Golden Beauty, Montreal Beauty, Transcendant and Hyslop Crabs, are the best.

HARVESTING.—A little care and expense bestowed upon the gathering and putting up of apples intended for market or for winter use will be found to be a very profitable investment. The fruit should be carefully gathered by hand, so that it shall not be bruised, and then should be carefully sorted. Usually

it will be found most profitable to make three grades, the first composed of fair, full sized, perfect fruit; the second of the sound but smaller sized apples; the third of inferior sized, knotty, scabby, wormy or imperfect specimens. The first grade will bring the very highest price, the second may either be kept for home consumption or sold at as much or more per barrel than could have been obtained for the lot unsorted, and the third may pay to make into vinegar. A reputation once obtained for putting up apples according to quality will cause that brand to be sought after, and secure a ready sale at the best prices. A little practice will enable one to barrel the fruit securely, first paving the bottom, and gently shaking down as the barrel is being filled, and pressing in the head with just enough of pressure to keep the apples from shaking in the barrel. After securing the hoops, the barrel should be marked on what was the bottom, so as to be opened from that end, then laid on the side and kept in a cool place, under cover from sun and rain, until put into the cellar or sent to market. A dry cellar, that can be kept as near as possible at a temperature just above freezing, is an excellent place in which to keep apples through the winter.

Thus it will be seen that, in order to secure a good crop of profitable apples, there must be care, watchfulness, labor and judgment exercised from the first preparation of the ground for planting to the final disposition of the fruit; and so the motto of this essay shall be: "The price of good fruit is eternal vigilance."

### Mr. Arnold's New Grapes.

The following opinion of these grapes by the Rev. Henry Ward Beecher, who is a thorough judge of fruit, will probably interest some of our readers.

"The box containing five varieties of grapes and two of raspberries came safely, with the fruit in excellent condition. Accept my thanks for your kindness.

"I have duly and properly examined the specimens, and am much pleased with the whole lot.

"The raspberries, for fall bearers, must be valuable. The yellow is not inferior to the Brinckle's Orange in sprightliness, and only a little inferior in richness. The red, too, is tender and juicy.

"Of the grapes I find No. 2, *Cornucopia*, hardly ripe enough, I imagine, to disclose its full merit, slightly foxy, pulp tending to break up in the month. I should think good wine could be made of it.

"No. 1, *Othello*, is good, with just a nice trace of mild flavour, solid meat, or jelly-like, but sweet skin.

"No. 16, *Canada*. This is a really good grape, melting, sprightly and sweet—I should have said good enough, if you had not sent with it No. 8, *Brant*, which I think the best coloured grape of the five, and as good a grape as one should desire. The pulp has nearly disappeared in this, and juice takes its place. I can easily imagine that one might strive in vain to choose between 8 and 16, and at last end in taking both.

"No. 5, the *White Grape* (*Autuchon*) has unmistakable *Chasselas* blood in it, and as tender (if I remember *Chasselas* aright), a sub-acid dash in it—a mere suggestion of sour, which I think finer than *Chasselas*.

"Judging simply from the specimens sent, if I were shut up to the choice of one, I would take No. 8, but on the express condition that No. 5 should go with it.

"I regard all of them as decided acquisitions, but Nos. 8, 16 and 5 as great horticultural treasures."

### New York State Grape Growers' Exhibition.

We extract the following account of the New York Grape Show, of which we have previously given intimations, from the *Boston Cultivator*:—

"The first Annual Exhibition of the New York State Grape Growers' Association, held at Canandaigua on the 7th and 8th of October, was pronounced by distinguished horticulturists the finest show of grapes ever witnessed in this country. We have never before made as large a collection of varieties, and kinds that heretofore have only scantily appeared on exhibition tables, were here in profusion. Eighty-one exhibitors spread their collections on the ample tables, and, including seedlings and a few kinds of hot-house grapes, the varieties numbered something more than one hundred. Judged by this Exhibition, New York would be placed in the front rank of grape-growing States, a position she justly merits, not only by reason of the extent of vine culture within her borders, but for the uniform health and high productiveness of the grape in the same limits. Also in the manufacture of those important products of the

grape, wine and brandy, high excellence has been attained. Both sparkling and still wines and brandies, made in New York cellars from New York grapes, challenge, with unvarying success, those from any other part of our country. And grape culture in this State, as elsewhere in the Union, has but begun. And varieties that are hardy, early and excellent, render it possible to grow grapes in localities heretofore deemed unsuitable. The culture will rapidly widen. One of the most cheerful features of grape culture, made prominent by this Exhibition, is the exemption of the vine and its fruit from serious disease in this State. There is some mildew, but no rot. Frost is the most dangerous enemy.

Among the numerous distinguished horticulturists present, we noticed Hon. Marshall P. Wilder, of Boston; E. S. Rogers, Salem, Mass.; Dr. John A. Warder, Ohio; Patrick Barry, Chas. Downing, Dr. Grant, and A. S. Fuller, New York.

The display of the newer varieties and Seedlings was very interesting. Mr. Arnold, Paris, Canada, sent five or six numbers of his series of hybrids. They are claimed to be a cross between the Clinton and Black Hamburg, and the vines are said to be hardy, and the fruit was sprightly and agreeable. The Lorain grape was shown by Barney & Carlin, of Sandusky, Ohio. This is a white or amber grape, sweet to the taste and handsome to the eye, and a supposed cross between the Isabella and Catawba. Dr. Underhill, of Croton Point, N. Y., exhibited three new seedlings, hybrids, one a cross between the Concord and Black Hamburg; another between the Concord and Black St. Peters, and the third between the Delaware and a foreign variety. These bore off the first and second premiums for seedlings. Nothing in this line attracted more attention than the "Eumelan," Dr. Grant's newest grape, which he is pushing into notice. It is a black, early variety, and said to be of better quality than the Israella."

A number of other seedlings are mentioned. Among the exhibitors, Messrs. Ellwanger and Barry showed a collection of fifty varieties, the largest number sent by any single firm or exhibitor. Altogether, the Exhibition was very successful, and will, no doubt, do much to stimulate grape-growing in the country.

**The Apiary.**

**The Honey Season in the United States.**

The long drought with which our neighbours in common with ourselves have been afflicted, joined to other peculiarities of the season, has seriously affected the quantity of honey made, and left many stocks apparently insufficiently provided for the coming winter. In reference to this subject Mrs. Ellen S. Tupper says:—

From all quarters come reports of an utter failure of honey the past season. In some places bees that did not swarm have not made enough for winter subsistence—while some that did swarm have starved, and the swarm has perished.

In Southern Illinois—usually one of the best regions for bees—no honey has been stored. In this section the spring was so cold and backward that the bees did nothing until the 15th of June—all my colonies lost in weight until then. From the 15th of June until the 10th of July they gathered faster than I ever knew them to do. From Alsike clover, white clover, and linn, the yield of honey was abundant. All strong colonies in that period of time filled their hives and stored some in boxes—but since then they have barely held their own. Not a colony in my apiary has failed to store enough for winter, and the few new colonies that were made in June have all filled their hives—but surplus honey they have not stored to any amount; I think they have not averaged more than ten lbs. to each hive.

"From different sources the inquiry comes, 'What shall we do with the bees that have not enough to live on? and how can we guard against such a state of things in future?'

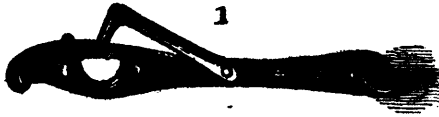
The first question each bee-keeper must decide for himself in view of the condition of his own bees and his wish for the future. If it is possible in any case to make one good strong colony out of two or three weak ones, it is the best policy always to unite them. I fear there are cases this year where this can not be done. Bees may be fed on a syrup made of sugar and water with safety; they have been wintered on this and on sugar candy when they had not a pound of honey. To do this to advantage it is best to begin at once. They do better to be fed now than in the winter. Give them constantly all the syrup

they will take up from now until near winter weather, then protect them properly, and in spring give them more aid or not as they need. Colonies that have half enough to winter on should specially be fed. It is poor economy indeed to leave them until starving before you aid them. Give them the syrup through the pleasant fall weather, and they will go into winter in better condition. Whatever course you may take don't let any bees starve. If you will not feed them yourself, give or sell them to others who will."

**Miscellaneous.**

**A Convenient Hasp.**

EVERY door which is often used should be furnished with a good self-fastening latch, but it sometimes happens that on outbuildings, which are less frequently visited, and which must be secured with a padlock at night, a common hasp is regarded as sufficient. Often the single strap is placed over the staple, and during the day time is fastened to its place by a small wooden pin, and not unfrequently with a corn cob. Several motions must of course be made every time the door is opened, and when it is closed again. Sometimes the pin is lost, and then a search must be made for a stick or broken limb of a tree to supply its place. To obviate this inconvenience a hasp has been contrived and much introduced into use, like that show in fig. 1. A small



hook is attached, moving on a rivet so as to supply the place of the pin, and is thus always on hand. Still several motions are required in closing and opening. We have made a still farther improvement, as shown in fig. 2, which we find a great convenience, and which may be fastened and unfastened almost as readily as the best latch. A projection is made on the lower side, as distinctly shown by the figure, which is dropped into the staple, and holds the door securely. Another staple is placed on the opposite side of the hinges, by which it is as readily fastened open. At night the loop is slipped on the staple and secured by a padlock. This hasp will do for doors that are frequently used or passed many times in a day.—Country Gent.

An indignant orator at a lively political meeting, in refuting an opponent, thundered:—"Mr. Chairman, I scorn the allegation, and I defy the alligator."

A small child being asked by her Sunday school teacher, "What did the Israelites do after they had crossed the Red Sea?" answered; "I don't know, ma'am, but I guess they dried themselves."

The annual importation of tobacco into England is fifty millions of pounds. Would it not be better, asks the Public Health, if the millions of acres now covered with the tobacco plant were producing cereals, tea, coffee, and cocoa, and thus our food cheapened and our poor better fed?

THE BEST THINGS.—The best thing to give your enemy is forgiveness; to give your opponent, tolerance; to a friend, your heart; to your child, a good example; to a father, deference; to your mother, conduct that will make her proud of you; to yourself, respect; to all men, charity.

ALL WORK AND NO PLAY—A clergyman who enjoyed the substantial benefits of a fine farm, was slightly taken down on one occasion by his Irish ploughman, who was sitting on his plough in the wheat field. The reverend gentleman being an economist, said with great seriousness: "John, wouldn't it be a good plan for you to have a stub scythe here and be cutting a few bushes along the fence while the horses are resting a short time?" John, with quite as serious a countenance as the divine himself, said: "See here, wouldn't it be well, sir, for you to have a tub of potatoes in the pulpit, and while they are singing, to peel 'em awhile to be ready for the pot?" The reverend gentleman laughed heartily and left.

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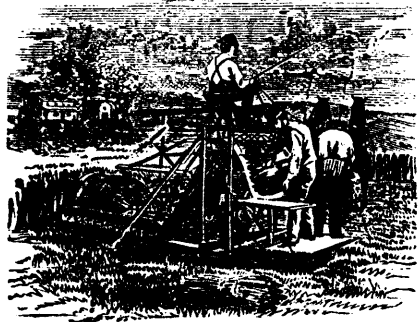
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Markets.

Toronto Markets.

CANADA "FARMER" Office, Oct. 29th, 1868. FLOUR AND MEAL.

Flour—The market has been very dull, and though no decided decline in prices can be reported, there has been a want of firmness in the market. The demand for No. 1 Super is very limited. We quote the wholesale prices:—Flour, No. 1 super, \$5 10; do. Fancy, \$5 35; do. extra, \$6 50; do. superior, none. Oatmeal, \$6; Cornmeal, \$4.

GRAIN.

Wheat—The market is quiet and dull; spring wheat has been offering freely at \$1 12 to \$1 14. On the street market the receipts are very light—only a few loads come in daily. Street prices range from \$1 10 to \$1 12 for spring; \$1 25 to \$1 35 for fall; and \$1 14 to \$1 15 for midge-proof.

Oats—The market is firm and advancing. Holders now ask 52c. to 53c. for car lots. On the street market 55c. is the ruling price. Barley—The market has been weak and irregular since our last report, rising and falling in sympathy with Oswego. In general buyers would not offer over \$1 35. Holders were asking \$1 40. There is at present in store in the warehouses here 145,000 bushels. On the street market only a few loads are now daily brought in. Prices range from \$1 38 to \$1 40.

Peas—The market is quiet and dull. There were no buyers at over 90c. On the street 90c. is the price.

HAY AND STRAW.

Only a limited supply has come into market, and prices have in consequence somewhat advanced. Hay has been selling at from \$14 to \$18. Straw, at from \$7 to \$11 50.

PROVISIONS.

Dressed Hogs—Coming in freely for the season. The receipts are daily increasing, the high prices of feed making farmers anxious to get rid of their stock as soon as possible. Once the cold weather sets in, it is anticipated that there will be quite a rush on the market. There was a perceptible improvement in the quality of the hogs offering this week over those of last, and an advance in prices has taken place, especially in heavy hogs. Selling off the cars at \$6 25 to \$6 50; choice heavy lots from farmers would bring \$7 to \$7 25.

Butter—The business between dealers is gradually lessening now the sharp frosts have cut short the make. We quote common to fair at 19c. to 21c.; fair to good at 11c. to 22c.; choice dairy at 22c. to 24c.

Eggs—The shipping business in eggs for the season is about exhausted. 17c. to 19c. was paid this week.

Bacon—Rather more active in the market. Cumberland cut offering at 11c.; some small sales taking place at that price. There are some enquiries for Liverpool account. A good demand is looked for during the next two months for the English market.

Pork—Very light stocks in the market. Held firm at \$24 75 to \$25. Chicago Mess cannot be laid down here at the above figures. The small stock in this market is principally Chicago.

Lard—In good demand and steady at 15c. The high price of butter tends to keep the market firm.

Cheese—The market continues dull, but the week closes with an improving tendency. The late rise in the English markets has given dealers more confidence. Prices are somewhat firmer. A lot of 100 boxes sold yesterday at 11c. here.

Salt—Market firm, with however less doing than of late. American is unchanged. Liverpool coarse is worth \$1 30 to \$1 40. Goderich sells at \$1 80.

Potatoes—Are scarce and in demand. Prices have advanced about 10c. during the week, and now stand at 75c. to 80c. per bushel.

THE CATTLE MARKET.

The market has been very active. There has been quite a large attendance of drovers, and competition was brisk, 1st class cattle find ready sale at \$6 to \$6 50c. per 100lbs., dressed weight.

There was a large supply of sheep and lambs in the market yesterday. The principal owner was I. Seagrave, drover. He had a drove of 300 head which were purchased in Scott and Mariposa, and sold at prices varying from \$2 to \$5 each.

Pork—The general range for good hogs has been from \$5 12 1/2c. to \$5 50c. A great many of the lots offering are poorly fattened, and would not command even the lowest price.

Wool—There has been a fair business doing in wool, principally, however, in small lots. Canada combing wools are now very scarce in the New York and Boston markets, and holders are getting in these markets the extraordinary high price of 75c. per lb. for all they can supply. It is said that so great is the scarcity of this grade of our wool in the New England States, that many of the mills there which are dependent on us for their supplies have lately been working half time, on account of the difficulty of procuring material. Ordinary pulled wool sells here at from 26c. to 27c.

Hides and Skins—Hides, green, rough per lb., 5 1/2c.; do. green inspected, 7c.; do. cured and inspected, 7 1/2c. to 8 1/2c. Calfskins, green, 10c.; do. cured, 12c.; do. dry, 18c. to 20c. Lambskins, green, 45c. to 50c.; Sheepskins, 60c.

Montreal Markets.—Oct. 28.—Flour—Superior Extra, \$7; Extra, \$6 25c. to \$6 50c.; Fancy, \$5 57 1/2c. to \$5 65c.; Welland Canal Superfine, \$5 20c. to \$5 21 1/2c.; Superfine No. 1 Canada Wheat, \$5 20c. to \$5 45c.; No. 1 Western Wheat, \$5 22 1/2c.; No. 2 do. \$4 90c. to \$5. Fine, \$1 25c. to \$4 40c.; Middlings, \$3 90c. to \$4; Pollards \$3 to \$3 25c. Wheat—Canada Fall, \$1 30c.; Spring, \$1 20c.; Western, \$1 20c. to \$1 22 1/2c. Oats—Per 32 lbs., 48c. to 50c. Barley—Per 48 lbs., \$1 30c. to \$1 35c. Butter—Dairy, 21c. to 22 1/2c.; Store-packed, 19c. to 21 1/2c. Cheese—Factory 10c. to 11c.; Dairy, 9c. to 10c. Peas—\$1 10c.

New York Produce Market.—Flour—Dull and heavy; receipts, 23,000 barrels; sales, 6,000 barrels, at \$6 to \$6 50c. for superior State and western: \$6 55c. to \$7 20c. for common to choice extra State; \$6 55c. to \$7 75c. for common to choice extra western. Rye Flour—Heavy, at \$6 to \$7 00c. Wheat—Dull; receipts, 72,000 bushels; sales, 43,000 bushels, at \$1 60c. to \$1 55 1/2c. for No. 2 spring; \$2 60c. for white State and Michigan. Rye—Quiet. Corn—Dull; receipts, 15,000 bushels; sales, 39,000 bushels, at \$1 09c. to \$1 10c. for unshod, and \$1 11c. to \$1 12c. for sound mixed Western shod; do. \$1 12c. in store. Barley—Decidedly lower; receipts, 19,000 bushels; sales, 8,000 bushels, Canada West, at \$2 20c. Oats—Lower; receipts, 50,000 bushels; sales, 67,000 bushels, at 71 1/2c. to 72c. for new Western. Pork—Firm at \$25 75c. to \$26 50c. for mess; \$25 25c. for old. Lard—Easier at 15 1/2c. to 17 1/2c. for steam; 17 1/2c. to 17 3/4c. for kettle rendered.

Chicago Markets, Oct. 28, noon.—William Young & Co.'s report.—Wheat—Receipts, 103,000 bus.; shipments, 40,000 bus.; No. 2 wheat dull at \$1 13 1/2c.; Corn dull at 78 1/2c.; receipts, 45,000; shipments 48,000. Pork nominal, unchanged.

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