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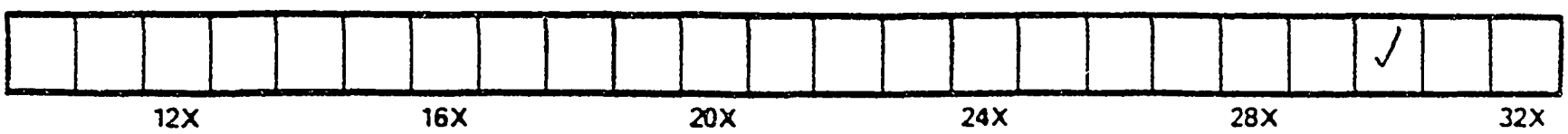

THE CANADA FARMER

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The Field.

A Manure Receipt.

Mr. D. Messenger, Cooksville, sends us a receipt which he states was used by his father in the old country, and which he designates a receipt "to make four tons of superphosphate." The directions are in many respects very good, but the result would be a large amount of fertilizing material, besides superphosphate of lime, and would be more correctly described as a compost. The receipt is as follows:—

"Materials employed,—seven quarters of bones, forty gallons of liquid manure, thirty bushels of soot, half a ton of oil of vitriol, five hundred weight of salt, a cart load of dry ashes.

To prepare the manure, procure a cart load of clay, and work it up like mortar. With this clay enclose a sufficient space in which to mix the above ingredients, forming a tight wall about eighteen inches high, care being taken that no holes are left through which the fluids could escape. Having thus secured a suitable working space, then

1st. Spread the bones evenly within the enclosure.

2nd. Add the liquid manure, spreading it all over.

3rd. Pour on the oil of vitriol, beginning at one end so as to have dry bones to stand on. Let the bones, liquid manure, and vitriol be well mixed.

4th. Spread the soot evenly over the mixture, so as to keep down the steam, which will rise in great abundance.

5th. Put on the salt equally.

6th. Cover all over with a cart load of dry wood ashes.

Let it remain for twenty-four hours. On the following day remove the clay wall, and let the whole mass be well mixed, moving it backwards and forwards, as in mixing lime and earth. Dry ashes should occasionally be added, both to moderate the strength of the preparation, and to make it dry and fine, so that it will pass through the seed drill without choking. Put the whole snugly away in a compact heap in some convenient place, under cover, until it is required for use."

In reference to the above we would observe, that, though the materials brought together are all undoubtedly excellent fertilizers, and the directions respecting them in general good, yet, considerable loss of, perhaps, the most important compound, namely, the phosphoric acid, would result from the treatment recommended. By the addition of the wood ashes while the operation was going on, the *super*-phosphate of lime would be converted into a *neutral* phosphate—that is, a compound in which the phosphoric acid and the lime exactly neutralize each other—being the condition in which it exists in ordinary bone, an important fertilizer, indeed, but not equal to the super-phosphate, in which the phosphoric acid is in considerble excess. We would suggest, then, as an improvement on the method prescribed, that the sulphuric acid and bones alone be first mixed: this will convert the phosphate of lime of the bones into super-phosphate, part of the lime uniting with the sulphuric acid to form sulphate of lime. Let this process be complete, and the whole allowed to become thoroughly dry, before the remaining ingredients are added, which may afterwards be done, in the manner directed by our correspondent, with advantage, and without the drawback of decomposing the superphosphate. Mr. Messenger deserves commendation for his disinterestedness in giving his information to the public, and thus presenting to his brother farmers a good manure receipt.

Sugar from Beet Root.

To the Editor of The Canada Farmer:

Sir,—In the March number of your excellent paper, Mr. Carl Beecherer, of Montreal, kindly offers, in an answer to a letter of mine of a previous number, to give to parties desirous of such knowledge, "information concerning the manufacture of sugar from the beet root, and do all in his power to have at least one or two factories started in Upper Canada."

I at one time took a good deal of interest in the matter, and made many enquiries in Europe concerning it, intending to aid its introduction into my native county. I had my doubts, which, I hope, were groundless, since I find in a paper from Illinois, of the 27th June last, as follows:

"Recent Illinois papers speak with confidence of the results of the efforts making in that State to manufacture sugar from beets after the plan adopted in France a few years ago, and since prosecuted with much success. The subject is again brought up prominently, by the consignment of about thirty thousand pounds of sugar to Chicago from a manufacturing establishment at Chattsworth, Ill.

"This sugar is said to have been made in March, and is a part of the product of last season's business. the beets having been preserved in pits through the winter. Experience seems to be conclusive in regard to the good saccharine properties of beets grown in the United States as compared with those of France."

In addition to the above, Mr. Beecherer, whosays he is conversant with the manufacture of sugar from beets in Europe, feels quite sure that the business can be carried on in Canada profitably. Will he not let us hear from him again on this important subject?

I should like to know what the President of the Board of Trade in Toronto did about obtaining seed and information when he was in France this spring. I see by the papers that he returned some time ago, and addressed the merchants of Toronto on the subject of his travels, much of which address was very entertaining and useful; still I think he quite forgot his promise made about beet-root sugar before he left. If this letter should happen to fall under his eye, probably he would let the country know, through your Journal, what information he obtained on the subject.

DENIZEN.

July 1st, 1867.

☞ Gail Hamilton says, we do not know how to work until we know how to play.

Diseases of the Hop.

It is well known that the Hop in all countries wherever it has been cultivated is an uncertain crop, if not *the most* uncertain of all farm crops. This arises from various causes, the chief of which is insect depredation. The soil naturally and artificially may be of the most suitable description, the culture and management of the most approved kinds, early indications of a remunerative crop most promising, and yet a stealthy fungus may infest the luxuriant leaves, or a swarm of caterpillars and insects take possession of the same, so as partially or totally to dash to the ground the brightest hopes of the cultivator, involving him in a pecuniary loss, to which failures in other crops have no comparison. If hops did not yield in what are termed "fortunate years" much larger profits than ordinary farm crops, it is plain from these facts that they would eventually go out of cultivation, as proving in the long run unprofitable. In proportion as science and experience enable the hop grower to prevent or even mitigate the depradation of insects—the chief source of the evil—will his business, as we shall show, assume a more reliable and profitable character.

The most common and destructive enemy of the hop is the Aphis, particularly the species denominated, *Aphis humuli*, and generally better known by the name of plant-lice, or green-blight. This family of insects, including several species, is often very troublesome to the gardener as well as the farmer. Rose bushes, beans, peas, and many other plants, are more or less liable to their depredations. The hop aphis is popularly known in England as the "fly," a small winged insect, often appearing on the under surface of the younger or smaller leaves in May and June, at first only three or four in number, which is often rapidly increased. The little nits or lice, of a green colour, often literally cover the under surface of the leaf and the young shoots of the bine, which soon shows symptoms of a sickly and declining character. The manner of living and reproduction of this curious family of insects are exceedingly interesting, and we would strongly advise our readers to observe these things for themselves, with the valuable assistance to be derived from treatises on entomology, with a view of enlarging their knowledge of this department of nature, and of applying it to practical purposes. Aphides propagate themselves both by depositing eggs and bringing forth their young alive; a property not belonging to any of the four-winged insects. Their power of multiplication is truly marvellous; a single plant louse will often produce a hundred young ones, from which countless numbers will rapidly succeed. The head of the aphis under the microscope is an interesting study; the eye is beautiful and bright, and the proboscis, for so small a creature, is a wonderful instrument, by which it extracts from the growing plant its life-giving juices.

In hops or other plants much infested by Aphides for any considerable length of time, a shining, glutinous substance, forming a kind of varnish, may be observed on the leaves, particularly the upper surface. This substance, popularly termed "honey dew," is secreted and exuded by the insects; it is of a sweetish taste, and most effectually chokes the pores of the leaves; so that with the sucking of the juices and the injury done to their functions, this pest alone, unless speedily arrested by natural or artificial means, will surely effect the destruction of the plants.

Fortunately, nature, or rather the wise and beneficent Author of nature, has so instituted counterbalancing forces in His works, as to maintain the conservation of the whole. As regards the honey dew, so injurious to the healthy functions of the plant, bees may be seen in thousands sweeping it from the leaves on which it has fallen, while ants innumerable lend their valuable aid to the cleansing process. The aphides are far more numerous in some seasons than in others; the force and direction of the wind have considerable influence as regards their distribution, and even probably their numbers. But the once prevalent notion that destructive insects, commonly called "blight," were *originated* by any particular condition of the atmosphere, such as an east wind, is clearly shown by the researches of the modern entomologist to be a popular error. Fortunately, not one-tenth, probably, of the larvæ reach the winged state; and many little ichneumons lay their eggs in the aphis, causing it to swell and die, when shortly arises out of its decomposing body a hidden parasite, which has there marvellously undergone its necessary transformations. But the most destructive, and fortunately the most common enemy of the aphis, is the beetle popularly known as the *Lady-bird* (*Coccinella*), a great variety of which are to be found in all parts of the world, and are the best and truest friends of the farmer and gardener. The popular name by which they have been known in Europe from time immemorial, denotes the sacred esteem in which they were held for their important services. They were regarded as being under the special protection of the Virgin Mary, hence they were called birds, or cows of our Lady, and even children still regard them with affectionate reverence. The largest species of these beetles we have in Canada is the *Coccinella borealis*, often to be seen on the vines of melons, pumpkins, and other kinds of gourd; not eating the leaves, as is often supposed, but the innumerable plant lice which are so destructive to this kind of vegetation. On hops, rose bushes, peas, &c., are to be found other and smaller species, varying in size and colour; but all rendering most valuable services.

The hop-vine Hepiolus (*Hepiolus Humuli*) sometimes does considerable harm to the young roots of the hop, and the larvæ of other species, caterpillars or worms, attack the leaves of the vine so as to riddle them completely, and thus most seriously affect the development of the plant, and the size and quality of the fruit. These worms have been known occasionally to attack the hop in America for many years, but it is only comparatively recently that any serious consequences have arisen from the attacks of Aphides, which have almost destroyed the crops twice, both in Canada and the State of New York, within the last half dozen years. We never saw the "fly" blight more virulent in England than what has been experienced here—the vines completely stunted and blackened, with such an accumulation of honey dew, lice and filth on the leaves, that after a heavy rain the surface of the ground around the hills has been colored as with ink. There is reason to fear that in the case of hops, as in fruit, the injuries arising from insects will increase.

It is, then, an important and very natural question to ask—what can be done to prevent or mitigate these evils? In England, till within a recent period, the hop-grower was entirely passive under the attacks of aphides. True, he occasionally burnt heaps of weeds in different places of his plantation in calm weather, dusted the poles with quicklime, soot, and other like things, which at the best had only a very partial effect. The cleansing of the leaves of the lice and flies at the earliest period practicable, by means of a small hand brush, was occasionally tried, and not always with satisfactory results, as new broods of insects would sometimes follow. Besides, this operation could not be generally carried out even in England, and would be wholly inapplicable here. Within, however, the last few years great progress has been made by the English hop-growers in this direction. An apparatus has been invented by which the flowers of sulphur can be readily and uniformly dusted over the plant as it grows on the pole; likewise, a syringe which will spread over the plant a solution of tobacco and other substances, each or both of which combined has been known to save the crop. In some cases the operation has to be repeated, involving an expense of twenty or thirty dollars and upwards per acre; a sum too insignificant for consideration in cases where the operation is successful. The fumes of tobacco and soap suds have been often tried with more or less success. We would certainly recommend our hop-growers to experiment with these remedies when occasion requires. The saving, or even the half saving of the crops, would justify any reasonable amount of expense and trouble required, as hops in blighting years always command high prices. It is worthy of remark that high cultivation of hops is often no preventive of the aphis blight; sometimes the richest and best managed grounds will actually fare the worst. That is, under such conditions, the plant is enabled to maintain a much longer struggle with fresh generations of insects, till its energies at length give way, and the season being far advanced, it has no chance to rally, and the failure will be complete. Therefore, any additional cultivation or manuring during the attacks of aphides is not to be recommended; it would probably only increase the evil, by enabling the plants to prolong the struggle without finally conquering. We have frequently seen an early attack of aphides on hops not naturally very vigorous, producing only a temporary effect; these insects soon die from the want of food, a favourable change of weather takes place, and a tolerable yield of fruit, after all, is realised. *After* the insects have departed, too much attention, by way of culture and applying manures which will readily become soluble, to invigorate the plant, cannot be given.

Hops are also liable on certain soils, particularly in warm, moist weather, to the attacks of fungi, commonly termed "mould," or "mildew," which though seldom so widely injurious as the aphis blight, is often exceedingly destructive within limited areas, and in particular kinds of hops. For instance, the Golding is more subject to it than the Grape; and rich calcareous soils than the inferior clays. Small white spots first appear on the leaves, gradually enlarging, till the juices and tissues of the plant become so diseased as entirely to prevent the maturing of the fruit. The remedies before mentioned relative to aphides have of late been applied to the mildew or mould, with partial success; but the disease is exceedingly obstinate, and in these, as in other maladies, both of plants and animals, no reliable panacea has yet been discovered.

A little beetle called the flea, very similar to that which commonly attacks the leaves of young turnips, is frequently injurious to hops, particularly before the bines are long enough to reach the poles; and in this way the young shoots are often seriously injured, and the plant weakened and kept back. Quicklime has but little effect upon these case-hardened depredators. The frequent cultivating of the ground and hoeing closely round the hills will always disturb them more or less, and assist the growth of the plant to get out of their reach. In England attempts have been made to catch the fleas in a glass bottle by means of an inverted funnel, seldom, we believe, with much success. The *wire worm* is sometimes exceedingly injurious to hops,—particularly during the first and second years. It eats the young roots beneath the ground, seldom, if ever, attacking the growing shoots. We have known this enemy destroyed by capturing it alive in this manner: put pieces of fresh cut potatoes around the hill, slightly covered with earth; the wire worm will be attracted from the hop roots to the potato cuttings, which after a day or two are to be taken up and the worms destroyed. A single piece of potato will often contain a dozen worms in land badly affected.

And now, a word or two of caution to our readers. We advise none of our farmers to commence hop-growing unless they have a suitable soil and climate, and make themselves particularly acquainted with the most approved systems of cultivation, drying, and preparing the crop for market. This knowledge can only be acquired by personal observation, and taking a part in the different working processes. Hops, unless of good, sound quality, carefully picked and dried, cannot be exported to England profitably. The present high prices, both here and there, the prudent man will regard as *exceptional*, and our hop-growers must make up their minds, probably not at a distant date, to take again ten or fifteen cents a pound. In case of a large American growth, we must necessarily look to England for our principal market. An objection is commonly made by English brewers against American hops, on account of their rank and unpleasant flavour, resembling the taste and smell of black currant leaves; a circumstance no doubt arising in some measure from soil and climate; but more probably from the coarse kinds too commonly raised, and some defects in the mode of cultivation and curing, matters which are within the planter's control; and to the improvement of these various details we must mainly look for making the business of hop-growing more remunerative.

We cannot better close this series of papers than in the words of the late Professor Johnston:—"It is interesting to observe how men carry with them their early tastes to whatever new climate or region they go. The love of beer and hops has been planted by Englishmen in America. It has accompanied them to their new empires in Australia, New Zealand, and the Cape. In the hot East their home taste remains unquenched, and the pale ale of England follows them to remotest India. Who can tell to what extent the use of the hop may become naturalized, through their means, in these far off regions? Inoculated with its milder influence, may not the devotees of opium, and the intoxicating hemp, be induced hereafter to abandon their hereditary drugs, and to substitute the foreign hop in their place? From such a change in one article of general consumption, how great a change in the character and habits of the people might we not anticipate?"

Alsike Clover.

THE following account of this valuable variety of clover we take from the *North British Agriculturist*, and is translated from the "Hand-Book of Swedish Agriculture," by J. Anhenius, Secretary of the Royal Academy of Agriculture. As a pretty full description of the peculiarities and culture of a crop that is attracting considerable attention, the extract will no doubt be interesting to Canadian farmers, whom we earnestly recommend to try this variety of clover. We are convinced by actual experiment that it will do well in this climate. A small field of our own, seeded down last year, is the most luxuriant bit of clover we have seen this present season, and the perennial character of this variety of clover renders it most valuable, if only it is found to do as well as the common clover.

"Alsike Clover (Trifolium hybridum) is a pale red perennial species of clover, which, mixed with grass, is cultivated with great advantage on permanent grass land, whether employed for pasture or mowing. This species of clover thrives best on marly clay with a somewhat moist bottom.

Alsike clover has obtained its name from the parish of Alsike, in Upland, where it was first discovered, and where it grows in the greatest abundance in every field ditch.

This species of clover has pale red flowers, a somewhat lank stalk, and oval obtuse leaves, which are less, and of a lighter green than those of red clover. The flower-head, growing from the upper leaf joint, is globular, and formed of fragrant blossoms supported by stems. These blossoms are at first whitish and upright, and subseqently of a pale red, which, when the flowering has passed, becomes brown and somewhat bent. The calyx is smooth, and its tags of equal length. The seed pods, containing three or four grains of seed, extend out of the calyx, surrounded by the withered crown. The seed is much less than that of red clover, is in the form of a kidney, and dark green, or verging somewhat towards violet. Yellow green seed of this plant is not ripe.

Alsike clover does not attain its full luxuriance until the second or third year after it has been sown, and during the first year seldom arrives at any great degree of growth. It is therefore best adapted to mixture with grass, for permanent grass land. It yields, on suitable and fruitful soil, rich and good fodder. It loves clayey soil, especially marly clay, with a somewhat moist position; but it also thrives on cultivated fens and marshes. Alsike clover grows but little after mowing, and no second crop can be expected from it, as is the case with red clover. Both in this respect, as well as in the longer time it requires before it yields a full crop, Alsike clover stands after red clover. Its great and undeniable

advantage, on the other hand, lies in the fact that it is far more hardy than red clover, and can be cultivated on moist soil, and land that is flooded at certain times of the year, on which red clover will not grow. If Alsike clover be mixed with white clover and suitable grass, it yields rich and certain crops, and when cultivated on arable land common red clover may and should be mixed with the seed with which the field is sown, by which the great advantage is gained that, the first year after sowing, two crops of fodder may be gathered, chiefly consisting of red clover; and that the following years, in the same proportion as the red clover declines, the Alsike clover appears in its place, and yields rich and certain crops, together with the grass with which it is sown.

With reference to cultivation and tending, the same prescriptions will apply, in the main, that are usually given with respect to red clover, with the addition of the following:—As Alsike clover, in full vegetation, has a great tendency to lodge, it should always, when cultivated for fodder, be sown together with grass—by preference with meadow or fox-tail grass on marshy land, and with timothy grass on drier soil. The crops by this means become much richer, and the grass supports the Alsike clover, so that it does not fall down to the ground and rot.

As Alsike clover seed is not more than about half the size of red clover seed, no more than about half as much, in measure, of the former is required as of the latter, and it may be sown winnowed or in pods like red clover. Every farmer will soon learn by observation what quantity of seed is required to the acre. If he uses the unwinnowed, or seed in the pod, the quantity required is four or five times greater than if he uses the clean seed.

Alsike clover seed, both winnowed and unwinnowed, may be sown in the autumn, directly after the sowing of autumn grain, or in the spring. When the seed is unwinnowed it is considered best to sow it in the autumn; it may, however, also be sown in the spring on the last snow. From the time Alsike clover first began to be cultivated by us, it has been found that the unwinnowed seed produces a stronger growth than the winnowed," which has been rightly attributed to the fact that "the tender shoot derives, in part, its first nourishment from the husks that surround the seed." (Annals of the Academy of Agriculture for the year 1819, 2nd vol., p. 223.)

The yield of mixed grass and Alsike clover seed is, on good and rich soil, very considerable. Lundstrom (Hand Book for Farming, p. 294), considers that it should yield, with certainty, from two to three tons per acre At Frotuna, in Nerike, in four years, one of which was a very dry year, the average yield was nearly two tons of Alsike clover and timothy hay per acre; the largest crop, on well manured and lime strewed soil, amounted to between four and five tons per acre (Farming Transactions, 2nd, vol., p. 101), a yield that certainly cannot be expected, excepting on very rich soil and in rainy years, in which Alsike clover especially thrives and attains much greater luxuriance than in ordinary dry summers. It yields, however, in general, good and safe crops, and both in the middle of Sweden (especially in Nerike), as well as at several places in Upland, Gestrickland, and Helsingland, Alsike clover, mixed with grass, is prized as being far more reliable than red clover. Alsike clover yields, too, better and finer hay, and, when ripe, the stalk is not so hard as red clover.

Gathering the seed of Alsike clover demands especial care, as it is of importance to gather seed for home use; the purchase of such seed being always connected with considerable expense. In addition to this, however, the gathering of Alsike clover-seed for sale may be attended with considerable profit, it being in great request in the foreign markets, and fetching high prices. It is also well known that the gathering and sale of Alsike clover-seed is now prosecuted on several estates as the main object, and it is desirable that the production of this seed for sale were more generally carried out, as from it might be derived a very profitable article of export.

On one estate in Sweden, where twenty acres were set apart for raising the seed, the average annual production for five years was 133 pounds per acre, while the production of one year was 200 pounds per acre. When it is recollected that Alsike clover-seed generally obtains in the market about double the price of the common red clover-seed, it is evident that the gathering of the former seed must render a very handsome return.

Alsike clover-seed is more easily threshed than red clover-seed. When cultivated and threshed together, the Alsike clover-seed always comes out of the pods before the red clover-seed. The ripened seed-heads of Alsike clover, however, fall off easier than that of red clover, and therefore in mowing Alsike clover that has been allowed to ripen, still greater care must be taken than with the seed of red clover.

The mowing of ripe Alsike clover should always be effected either early in the morning or late in the evening while it is moist with dew: otherwise the riper seed pods fall off with the best and finest seed, however carefully the mowing may be performed. The mowed Alsike clover is left lying as it falls, and is turned once or twice while moist with dew, after which it is housed when dry. In carting home, canvas lining should be used in the carts, of sufficient size to cover the whole of the bottom and a part of the sides of the carts, so that those seed pods that fall off in carting may not be lost."

Cultivation of Canadian Indigenous Plants.

To the Editor of The Canada Farmer:

Sir,—Are there not good grounds for supposing that the kinds of grasses most commonly cultivated by British agriculturists came originally into use rather by way of accident, or from the fact that those grasses, or their seeds, more readily presented themselves to the farmers' notice, than from any claim that they had over the other classes of the Gramineæ, by reason of superior excellence? The perennial rye-grass (*Lollium perenne*), so much cultivated in Britain, does not appear to be superior, if it is, indeed, equal, to the timothy grass (*Phleum pratense*), generally seen in Canada; and the timothy, again, would seem to be very inferior, as a productive grass, to the fox-tail grass (*Alopecurus pratensis*), known as such in the British Isles, and which is somewhat similar to the timothy in general appearance. This fox-tail grass might be found to be very suitable for Canadian agriculture, being, according to the Woburn or Bedford experiments, nearly on a par with timothy as far as nutritive qualities are concerned, but greatly excelling it for aftermath. The timothy, as every one knows, springs up very slowly after one crop is cut; the fox-tail, on the contrary, shoots out then luxuriantly, like clover, for a second yield. The grass known as fox-tail in England, and which is also indigenous in Canada, is, however, very different from the one known under that name in Canada, which latter is also, and more properly, known here as the red-top (*Agrostis vulgaris*), and it is, I believe, a useful grass for moist lands.

But, Mr. Editor, are there no other of the cattle-feeding plants whose herbage might reasonably be supposed to be well adapted for green fodder, or to be cured for hay, but which have as yet been neither sown nor reaped, to any important extent, on cultivated lands? All our cultivated Canadian pasture-plants appear to have their short-comings. The clovers are very excellent where they can be cultivated with success, but every one knows that the species which is most commonly sown, and which is, probably, the most productive of the family, viz., the *Trifolium pratense*, is very liable to be winter-killed. Spring tares, again, are a most nutritive crop, but, alas, we can procure them as green fodder only at that time of the year when we least require their aid. Had we a perennial tare sufficiently hardy to withstand, year after year, the rigours of a Canadian winter, and which would yield a moderate swath in early summer—that scarcest of seasons—what an acquisition it would be to the farming interest! But it is to be feared that our nursery-men cannot supply us with such a plant. It is very doubtful whether the English winter tare could successfully brave the frosts and snows of a Canadian winter. Why not, then, attempt the cultivation of our own indigenous tares or vetches, about the robustness of whose well-tried constitutions there can be little doubt. We possess several species of Canadian vetches, and, judging from my own observations of a few past years, I can scarcely doubt that some of these wild vetches would well repay the labour of their cultivation. The main requisites, apparently, that a Canadian pasturage or soiling plant should possess, are, that it be extremely hardy in habit, perennial in duration of life, and luxuriant in growth. Many of your readers will no doubt think that I am too exacting, and that it will be very difficult to find a vetch to come up to this standard. Yet, I have taken notice that, within less than a mile of my residence, there has been growing, for many years past, a patch of wild Canadian vetches, in a spot entirely denuded of sylvan shelter, and surrounded by a thick and luxuriant sward of natural grasses: the place being almost wholly protected against cattle. Notwithstanding the disadvantages of an exposed situation, and of a never-cultivated soil, this Canadian vetch is vigorous in its growth. It occupies a space of some sixty or seventy square yards, and has successfully held its own for years past, to my knowledge, and for a much longer period, no doubt, of its pre-historic times, against the grasping and enduring family of the *poa*, (such as spear-grass, blue-grass, &c.,) and the other denizens of the wilds. This vetch comes up early in spring, about as early as clover, and very soon forms a thick growth of herbage, yielding a rather good swath to the scythe: this year its swath is quite heavy. A horse to which its fresh-cut herbage was given ate it with avidity, and the plants sprang up at once, like clover, after having been cut. This vetch grows about three feet or upwards in length, but appears to be shy of flowering, at least in this locality. Though I have taken some care, I have never yet succeeded in gathering any of its seeds. Neither is it by any means common in these parts, for though I have looked for plants of this species in a great part of this neighborhood, yet, I have found none except in the spot aforesaid. I have not yet fully examined its flower, (which is not easily got), but I believe the vetch to be the *vicia cracca*; but it flowers in June, and not in September, as Eaten says. Several sods of the sward formed by this plant having been set out by me this year in my cultivated land, this vetch may probably flower there more readily, and mature the seed more thoroughly than it would have done in its natual habitat. I have observed, especially since transplanting it, that it appears to have a great tendency to shoot out from the root at some distance from the main stem, a useful habit in a pasture plant. Further experiment may show whether it will grow with the luxuriance of the English tare under cultivation, and whether it will possess the extreme nutritive qualities of that species as green food for horses, pigs, and horned cattle.

There is another species of Canadian vetch, which is greatly more common in this neighborhood, and which is very different from the last, in that it flowers remarkably readily, and very early in the season. I have never seen it, however, form a sward like the former species, though in that way it may improve much under cultivation. It might be useful by reason of its early maturity, being generally in full bloom in May, considerably before red clover. Its botanical name is the *Vicia Americana*, and it grows some two or two and a half feet in length. The result of further trial I may communicate, if you think it would interest your readers.

JOHN MAXWELL.

Brantford, June 17th, 1867.

Best Time to Sow Grass Seed.

In publishing the following extract from the *Boston Cultivator*, we do not mean to affirm it as our decided opinion that the fall is, in our Canadian climate, the most suitable time for grass growing; we are well aware that differences of climate often make a practice which has been found eminently successful in one country wholly unsuitable for another; but we do think the plan of fall sowing for grass-seed well worthy of extended trial in Canada. S. Brown writes to the *Boston Cultivator*:—

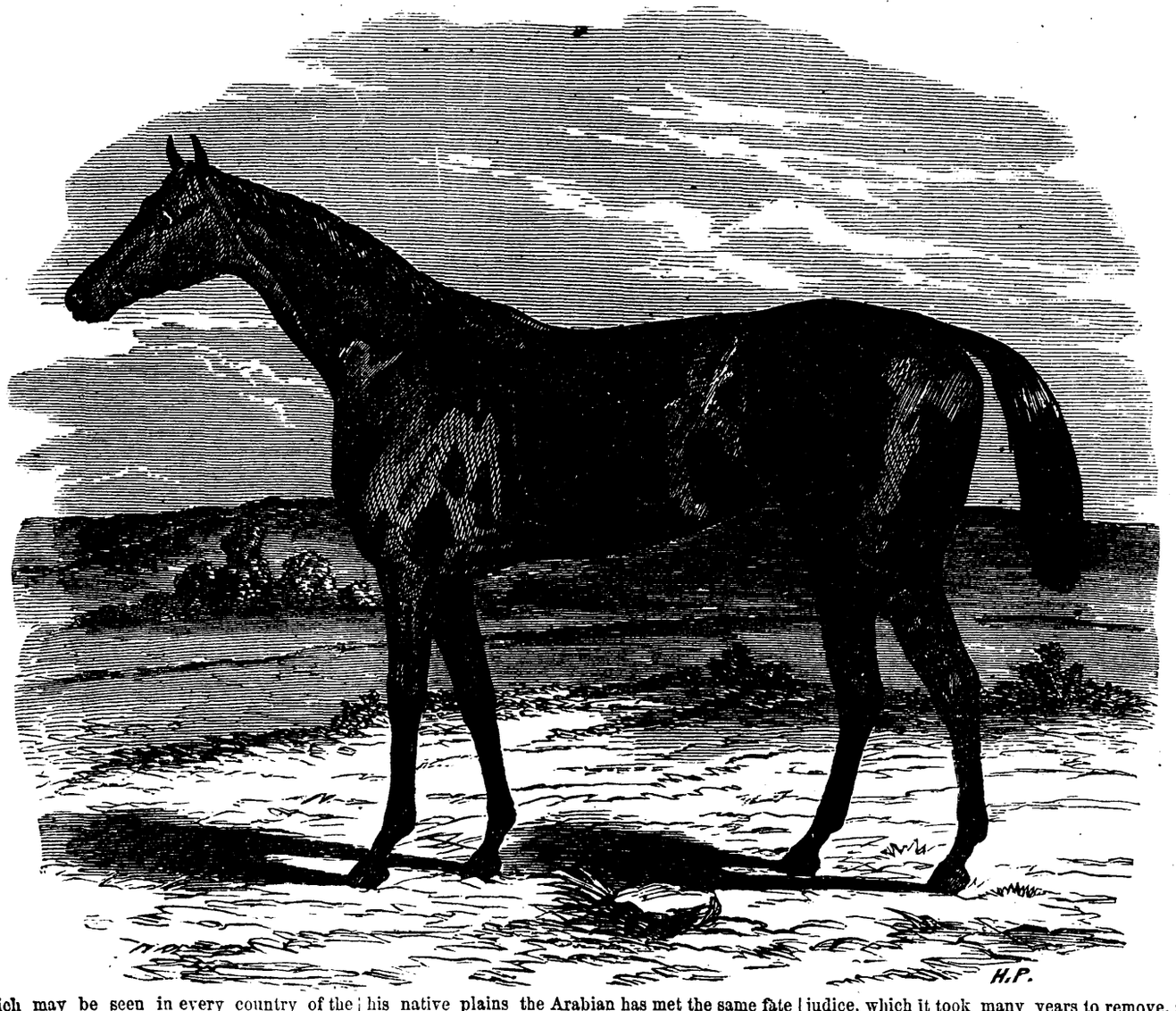
"I have an impression that experimental knowledge is the most valuable for the farmer. For more than half a century I have been experimenting to find the best time to sow grass seed. For more than thirty of the first years of my farming, I did as my neighbours did; we supposed that the spring months were the only proper ones for that purpose. But later in life, by reading agricultural papers, I discovered that some enterprising farmers were successful in sowing their grass seed in August or September. I tried the experiment with complete success; that being the season it would naturally fall, it appeared evident to my mind that it was the right one. But still later I have not been particular, and have sown grass seed at any season when my ground was ready to receive it, and if the seed was good it uniformly vegetated and did well.

Last fall we (my son and myself), after harvesting our potatoes from the low wet soil, which would not admit of seeding down in early spring, sowed Herd grass and red-top seed on the 14th and 15th of October upon said potatoe field, doubting, but still hoping for the best; and now, the 8th of July, it bids fair to give up the best crop of hay produced on any of my farm lots. This grass probably will require two weeks longer to grow than that which has been seeded down longer. I think I never saw seed vegetate better at any season. Grass seed will vegetate a long time after being sown In the spring of 1862 I seeded down a lot of good ground, but rather dry, with red-top seed; the months of June and July were uncommonly dry, and at the middle of August there was no appearance of a grass sprout on the piece On the 10th of August, the same year, it began to rain profusely, and continued raining for several weeks, till the ground was saturated. In September, more than four months after the seed was sown, every seed seemed to vegetate, and the ground appeared like a beautiful lawn. And on the whole, I have concluded that any time when our land is in a good state of preparation to receive the seed, is the best time to sow it."

Stock Department.

The English Thorough-bred Horse.

THERE is, perhaps, no animal except the dog that exhibits such a variety in the same species as the horse. From the superb English draught-horse to the diminutive Shetland pony, we have a marvellous diversity in size, and not less extraordinary is the difference in general proportions and configuration presented within the same limits, in such examples as the London brewer's dray, the thorough-bred race horse, the hunter, the carriage horse, the hack, and the hundred distinct or nameless varieties of horse and



pony which may be seen in every country of the globe. The differences are due partly to natural causes, in which man has had only an accidental share, or none at all, and they are partly also the result of artificial management and breeding. Under a long-continued and judicious system of the latter, as in the parallel case of the breeds of cattle, a marked improvement has been effected upon the original wild stock, and the various types of form and character, adapted to special purposes, have been brought to a high degree of excellence, if not to the *ne plus ultra* of perfection. This is especially the case with the English thorough-bred horse, in which so many of the best qualities of the horse are combined, that although bred and trained for the particular object of the race, yet it is also the parent of nearly all the improvements attained in the other useful breeds, to the excellencies of which some infusion of thorough-bred blood has mainly contributed. That art, by acting in accordance with natural laws, has effected in this beautiful race of animals an exaltation and not a degeneracy of nature's type, may be shown by a comparison of the best specimens of almost any well established and approved domesticated breed with the wild or semi-wild horses of any country. The far-famed Arabian steed, long accounted matchless in symmetry, speed, endurance, and intelligence, may perhaps justly be regarded as the best type of the original race, and inhabits a region which may be considered the most natural home of this noble animal—yet he is undoubtedly surpassed by the English thorough-bred, and even by the English horse of inferior rank with thorough-bred blood in his veins. The trial has repeatedly been made in England with the best Arab horses that could be procured, and they have invariably been beaten, miserably beaten, we believe, by the English race horse; and even on his native plains the Arabian has met the same fate when put in competition with the English horse, not only in regard to speed for a short distance, but also in the more useful qualities of endurance, strength, and capacity for long-continued exertion. A sort of romantic and poetic interest attaches to the Arabian horse, and without doubt he possesses great beauty, a most winning docility of temper, and marvellous powers; but it must be admitted that the English trained horse is more beautiful, far swifter and stouter than the justly famed courser of the desert. In the burning plains of the East, and the frozen climate of Russia, he has invariably beaten every antagonist on his native ground. But while we claim this superiority for the English horse, we acknowledge that it is to the introduction of Arabian blood that the first marked improvement in the breed of the former is due. The African horse or Barb, the Turk, and the Persian, have also had their share in imparting to the thorough-bred horse of the present day those original excellencies which the skill and training of the English breeder have, by judicious perseverance through successive generations, at length so successfully combined and developed.

If it now be asked what constitutes a thorough-bred horse, we believe the correct answer to be that the term implies one that can be traced through the "Stud-Book," by sire and dam, to any Eastern stallion, or to what were called the royal mares, imported by Charles the Second, as they, together with two or three of the first imported stallions, constitute the remotest limit of all racing pedigrees. The first step to improve the native breed of English horses appears to have been taken by James the First, who gave £500, an enormous sum in those days, for an Arab stallion, which, however, the Duke of Newcastle, in his work on horsemanship, decried, and thereby created a prejudice, which it took many years to remove, against Arab blood. Charles the Second subsequently effected considerable improvement by the importation of Barbs and Turks, whose blood was engrafted on the original stock, already considerably ameliorated by the services of a stallion called Place's White Turk, imported by Oliver Cromwell's master of the horse, and subsequently by those of the Helmsley Turk, followed by Fairfax's Morocco Barb. The greatest event, however, in the early history of the English thorough-bred horse, was the introduction, during the latter part of Queen Anne's reign, of the Darley Arabian, purchased in the Levant by a Yorkshire merchant of that name. The immediate descendants of this invaluable horse, the parent of the best English stock, were the Devonshire or Flying Childers, the Bartlett's Childers, Almanzor, and others. The two Childers were the means through which the blood and fame of their sire were widely circulated, and from them descended another Childers, Blaze, Snap, Sampson, Eclipse, and a host of excellent horses.

The Devonshire or Flying Childers, so called from the name of his breeder, Mr. Childers, of Carr House, and the sale of him to the Duke of Devonshire, was the fleetest horse of his day. He was at first trained

as a hunter, but the superior speed and courage which he discovered caused him to be soon transferred to the turf. Common report affirms that he could run a mile in a minute, but there is no authentic record of this, which is probably an exaggerated popular rumor. He ran over the course at Newmarket, (three miles six furlongs and ninety-three yards), in six minutes and forty seconds; and the Beacon course (four miles one furlong and one hundred and thirty-eight yards), in seven minutes and thirty seconds. In 1772, it is stated, a mile was run by a horse named Pretail in one minute and four seconds.

Eclipse, another illustrious descendant through the Bartlett's Childers of the Darley Arabian, was never beaten on the course. Of his speed no correct estimate can be formed, for he never met with an opponent sufficiently fleet to put it to the test. He was bred by the Duke of Cumberland, and ultimately came into the possession of Colonel O'Kelly. His first race, which, however, did not take place till he was five years old, was in May, 1769. A writer speaking of his first triumph, says, that he and a companion who were anxious to witness the race "were a little too late; but they found an old woman who gave them all the information they wanted. On enquiring whether she had seen the race, she replied, she could not tell whether she had seen a race or not, but that she had just seen a horse with white legs running away at a monstrous rate, and another horse a great way behind trying to run after him; but she was sure he never would catch the white-legged horse if he ran to the world's end." The owner of Eclipse observing that in this first trial his rider had been pulling at the horse during the whole of the race, offered to "place" the horses for the next heat. This seemed, of course, incredible, and being called upon to name the order of the various competitors, he replied, "Eclipse first, and the rest *nowhere!*" The event justified his prediction. All the others were completely distanced by Eclipse with the greatest ease, or, in the language of the turf, they had no place. In the following year he won four successive races, in the last of which, no horse daring to enter against him, he walked over the Newmarket course unopposed. He was afterwards employed as a stallion, and produced the extraordinary number of three hundred and thirty-four winners. This fine animal died in 1789, at the age of twenty-five years.

More than twenty years after the Darley Arabian, and when the value of the Arabian blood was fully established, Lord Godolphin possessed a beautiful horse, which he called an Arabian, but which was really a Barb. He was picked up in France, where he was actually employed in drawing a cart; and when he was afterwards presented to Lord Godolphin, he was in that nobleman's stud a considerable time before his value was discovered. He subsequently became, in almost an equal degree with the Darley Arabian, the founder of the modern thoroughbred horses. Another foreign horse, known as the Wellesley Arabian, was, perhaps, the last imported horse of any note to whose services the present English breed owes any large share of its excellence. English skill in breeding and training have since brought the breed to a high condition of merit, which no admixture of foreign blood seems able to advance.

Having thus given an outline of the origin and early history of the thorough-bred horse, it now only remains to notice briefly its chief characteristics or "points." One of the most essential and fundamental qualities in the structure of his frame, is compactness and solidity of bone, by which small size and easy motion are combined with great strength; to this firm frame-work is attached a fully developed, well defined and sinewy muscular system. With regard to his form, he is distinguished by his beautiful head, with broad and flat forehead; a fine and finely-set-on neck; oblique, lengthened shoulders; long and muscular forearm; well bent hinder legs; ample muscular quarters; flat legs, rather short from the knee downwards; and long and elastic pastern.

The following are amongst the principal points in the race horse, as described by Mr. Darvill. "His head should be small and lean; his ears small and picked; his eyes brilliantly large; his forehead broad and flat; his neck should be moderate in length, and rather of the deer-like shape than high or loaded on top; the withers should be moderately high, and the shoulders, sloping well back, should be deep, broad and strong; the back straight and moderately long; the loins should have great breadth and muscular substance. His body should be deep in the girth, and round or well arched in the ribs, so as to give ample room for the play of the lungs. The forearm should be broad and long, and most particularly well furnished with muscles on its top parts, inside as well as out, leaving but a moderate space between the fore legs. The knee-joint should be large, broad, and flat in front; the legs from the knee to the fetlock short; the pastern should be strong and elastic, with its length and obliquity in the medium. The wall, or crust of the feet, should be moderately oblique, with the heels open, and the frogs sound. The hind-quarters are of special importance, and should be in breadth, substance and length, of very superior dimensions. The hips should have great breadth between them; the croup should be of great length; and the length of the quarters, from the croup to the hock, can scarcely be too great, in order that there may be sufficient room for those broad, powerful, and distinctly divided muscles on the outside of the quarters and thighs. The stifle-joint should be in a direct line under the hip, with considerable length from this joint to the hock. The hind leg, like the fore one, should be short, broad, flat and straight."

The artist's admirable illustration will give a very fair idea of the general form and characteristic points of this beautiful animal, which we have thus brought before the notice of our readers, not to encourage the usages of the "turf," but simply to sketch the history and delineate the distinctive features of a breed to which the varied excellencies of all our most useful horses are largely due. We may admire the race horse and acknowledge the obligations which agriculture owes him, while, at the same time, we emphatically denounce the unblushing knavery and unutterable meanness of those gambling operations that have disgraced the British "turf."

☞A flock of 338 sheep, in Brookfield, Vt., yielded, on May 1st, 3,000 lbs. of wool,

ADVERTISEMENT.—"Wanted: a man to take charge of a pair of horses of a religious turn of mind."

☞ At an Agricultural meeting in Boston one of the speakers remarked, that on a tract of land which was overrun with woodbox, briars, and other shrubs, he turned one hundred and fifty sheep. At that time a cow could not have lived on the whole tract. The sheep were kept there several years, and so killed out the wild growth that the tract now affords good pasture for fifteen cows.

RECIPE TO CLEANSE WOOL.—Hunt Brothers, of the "North Bloomfield Custom Woollen Mill," N.Y., give the following recipe for cleansing wool: To two pailsful of water add a quart of soft soap and half a pint of common salt. Heat from 150° to 180°—or a little warmer than the hand can bear. Put in all the wool that will stir conveniently, and let it remain fifteen minutes, moving it in the kettle occasionally. Then take it out, let it drain, return the drained liquor to the kettle and add all the water needed. Repeat the process, and occasionally add a little soap and salt. After the wool is sufficiently drained, simply rinse it out well in cold water, and you will then have it white and soft. Never let wool boil in the liquor, as that will fix the gum, render the fibre stiff and gray, and unfit to make soft, flexible yarn. Fine wool needs more time in the kettle than coarse. Taggings may be cleansed in the same manner, by clipping off all the hard matter that cannot readily be compressed between the thumb and finger.—*Rural New Yorker.*

The Dairy.

More About the New York Cheese Factories.

These establishments are almost without exception conducted on the association or co-partnership principle. The plan of buying milk at so much per gallon seems to meet with no favour. A single proprietor, or a company, erect the buildings and find the requisite apparatus. They are then allowed a fixed price per hundred weight for manufacturing. This price varies from $1 to $1 50 per hundred weight, when anotta, bandages and other requisites are not found; when everything is found, from sixty to eighty cents more are allowed the manufacturer. About $2 per hundred-weight may be considered the usual cost of manufacturing, all expenses included. Where factories are near enough to excite competition, lower prices obtain, but it is generally agreed by those engaged in the business, that $2 per hundred-weight is as little as the work can be done for to be at all remunerative to the maker, if he does his patrons justice. The parties who supply milk have a regular account kept of their daily deliveries, and the proceeds of sales are divided among them in proportion to the milk furnished by each. Sales are made on general account, usually by the person at the head of the factory, under the direction of a committee of management. In this way all share alike. If the market be depressed all suffer together, and if good prices are obtained the gain is participated in by all. Of course the amounts above stated are in American currency.

Pretty much the same system of manufacture is adopted at all the factories. Cheese is made only once a day, the night's and morning's milk being mixed together. Some think it is not well to mix the cream of the night's milk with the morning's milk, but with proper management no difficulty arises out of this practice. The best method appears to be, to allow the cream to remain until the morning's milk is in, apply heat until the mass is at the proper temperature for applying the anotta and rennet, but before putting these in, skim off the cream, and run it through a strainer. The ingenious device mentioned in our last, by which a slight agitation is kept up on the surface of the night's milk, is a decided improvement on the old method of allowing the cream to rise, and there is little doubt it will come to be pretty generally adopted.

The milk having been raised to a proper temperature (from eighty-two to eighty-six degrees) the anotta and rennet are applied, being mixed in by stirring, after which the mass is left to coagulate. This takes from half an hour to an hour. The curd is then cut lengthwise and crosswise of the vat, and broken carefully with the hand and agitator. There is difference of opinion as to whether coarse or fine curds make the best cheese. Some break the curds as fine as corn or wheat grains, others leave them as large as chestnuts or walnuts. After the curds are sufficiently broken, heat is gradually applied so as to raise the temperature to ninety-eight or one hundred degrees. The mass is then left until a slight acid begins to develop, when the whey is run off, the curds are put on the sink to drain, salt is added, the curds are dipped into the cheese hoop, a gradually increasing pressure is applied for an hour or so, when the cheese is bandaged, turned, and put into the press for twenty-four hours. It is considered a good plan to leave the cheeses under pressure as much as thirty-six hours, or more; but to do this requires a double set of presses, which very few factories can boast. From the press the cheeses are taken to the drying room, to undergo the process of curing. The curing-house should be a well-ventilated building. It usually has venetian blinds to the windows, and is ventilated from the ground floor upwards, and by means of openings in

the sides of the building provided with closely-fitting doors or shutters. The summer drying-house is usually a mere shell, enclosed with but a single thickness of boards, but that for spring and fall use must be a tighter building, as artificial heat requires to be applied properly to cure the cheese during the cooler seasons of the year.

The milk is almost universally delivered at the factories by the parties who supply it. Sometimes a number of neighbouring farmers join in hiring a teamster to come round and gather their milk morning and evening. Each can has its owner's name on it, so that there is no confusion at the factory. When a farmer delivers his own milk, he usually carries it in a one-horse buggy or light spring waggon, so as to shake it as little as possible. The transportation of the milk is felt to be a serious difficulty in connection with the cheese factory system. Where it has to be taken several miles, the tax upon human time and horse-flesh is considerable, and in hot weather milk is by no means improved by jolting for an hour or more in the heat of the sun. From one to two miles is quite distance enough to carry milk to a factory. To obviate this difficulty, the system of branch factories has been resorted to in some localities, and is said to work well. At some central point a main establishment is located, with a drying house of sufficient size to cure all the cheese made at the central and branch factories. The branch factory is a cheap building, say 18 x 24 feet in size, provided with a single vat, and capable of using the milk of 150 or 200 cows. A single hand can manage the branch factory. After the cheeses are sufficiently pressed they are hauled to the drying-house. Thus the teaming of the cheese, when manufactured, is substituted for the carting of the milk. This plan has its warm advocates. It is said to bring the milk to the vats in better condition. Being only brought a short distance, the milk can be operated on earlier in the day, and the work done more promptly. There is also a better opportunity for distributing and using up the whey. Small factories or the branch system seem to be the alternative. Small factories are not considered nearly so remunerative in proportion as larger ones. Private dairies are quite as profitable as small factories. Indeed it is becoming very common to have private dairies managed essentially on the factory system. Vats of all sizes are now made, furnished with heating and water conveniences equal to the kinds used in factories, and those farmers who have help enough, and prefer to be independent, can, with proper attention to the matter, make as good cheese, and obtain for it as high a price as the factories. Mr. X. A. Willard, of Little Falls, who has done and is doing so much to promote the dairy interest of New York and the United States generally, has a nice little private dairy of this sort, furnished with one of Ralph's Oneida Vats. While inspecting this model little dairy, we could not help thinking how practicable it was for any enterprising farmer, in a locality where a factory was impracticable, to set up a similar small establishment, and make cheese of the very finest quality.

The disposition of the whey is a perplexing question with cheese-factors. Feeding it to hogs is a short-hand method of getting rid of it, but it is at the risk of a nuisance that cannot but jeopardize the quality of the cheeses. Any bad smell readily taints cheese, and there is no worse smell than that emitted from a factory hog-yard. This mode of using the whey has other objections. Unless meal of some kind be fed with it, whey does not make good, solid food. Some feed a portion of it to the cows, rendering it palatable with bran and shorts; others give it to the calves; and in many cases, though it is fed to hogs, they are not kept at the factory, but each patron teams his proportion of the whey home. This last practice, however, involves a large amount of trouble. The plan of making butter from whey has been resorted to with encouraging results. An average of one pound of butter can be made from the whey of 150 pounds of milk. One or two patent processes for making butter from whey are in the market, and it is said that, by one method, the patentee made $1,600 worth of prime butter in a factory receiving the milk of only 450 cows, and that not under the most favourable circumstances.

The objection has been urged against cheese factories, that their multiplication will tend to make butter scarce and dear. This objection is in a fair way of being obviated, by the establishment of what are called butter factories, or creameries, at which the milk is first skimmed, butter made from the cream, and cheese manufactured from the skim milk. These establishments are in vigorous operation in Orange County, so famed for its milk and butter. We shall endeavour to give some description of them in our next issue.

Amidst much to admire in the thoroughly scientific and practical management of the New York Cheese Factories, there is one thing which cannot be too strongly deprecated, and that is the almost universal practice of running them Sundays and week-days alike. The plea of necessity, which is urged for this, is no more valid than it would be in regard to many other businesses. Seven days' work in most occupations would, for a time at least, be more remunerative than six, though in the long run it is found unprofitable. A law of man's physical constitution requires one day's rest to balance six days of labour, to say nothing of the higher and better interests that imperatively demand the Sabbath. Cheese factories can be carried on without infringing on the day sacred to religion and to rest. If they could not, better that they should be dispensed with altogether, for no material, pecuniary gain, can compensate for the moral injury thus done. It is estimated that there are upwards of 500 cheese factories in the State of New York. Each will employ at least four hands. Here, then, are 2,000 persons precluded from the right observance of the Sabbath, because cheese must be made. Beside this number, there are many more who are similarly precluded by having to team the milk and perform other duties connected with the business. Thus a wide-spread and demoralizing influence is created. Most of those with whom we conversed on this subject regretted the practice. Only one individual spoke contemptuously in regard to it, and his remark was, that the Almighty should have made cows to give no milk on Sundays if it were wrong to make cheese on that day. We hope there is not much of this irreligious feeling in existence; but assuredly the prevalence of the custom we are reprobating will have a tendency to induce it. When it is considered that by stopping the factories on Sunday you have a ready solution of the butter difficulty referred to above, it will at once be seen that there is really no excuse for the practice under consideration. Let the milk sent to the factory on other days be set for cream on Sunday, and the trouble is at once disposed of, and a butter supply provided. It is of no use disguising it;—a sordid, money-making, covetous haste to be rich is what keeps the cheese factories going on Sunday, and the same spirit would keep every mill and manufactory in operation, would keep every shop open, and every mechanic at work, all over the country. The agricultural and religious press of the United States owe it to their country and their God to write down the unjustifiable, needless, and wicked custom of Sunday cheese-making, until its abandonment shall be as universal as its prevalence is now.

Cheese Factory in Erin.

MR. D. KIRKWOOD, of Rockside, sends the following account of a Cheese Factory recently established in that neighborhood. The factory is situated on lot No. 6, 10th con., Township of Erin, county of Wellington. The proprietors are the Messrs. Townsend, who have had considerable experience in the trade in Canada, besides having in their employ a gentleman lately from England, who has been long in the business in some of the best dairies in Cheshire and Devonshire. The terms of manufacturing are those adopted by the factory men of the counties of Peel and Halton, viz., the manufacturer to be paid two cents per gallon, for manufacturing and furnishing hoops, bandages, colouring, &c., the patrons supplying one rennet, or 20 cts. instead, for each cow's milk manufactured.

Parties living in the vicinity of the Factory deliver their own milk. The proprietors have, as yet, but one team engaged in drawing milk, which is done for an additional cent per gallon. Whey is sold for one half cent per gallon. The owners of the factory commenced operations on the 11th of June, making about 150 lbs. per day at first, but have been daily increasing until they are now making 250 lbs. or more; and in a few days they intend starting another team, when they will not make less than 400 lbs. per day. At a meeting of the patrons held previous to beginning manufacturing, a committee was appointed to act with the proprietors in the general management and disposal of cheese; each patron to be paid from the monthly average made.

Production of Cream.

EXPERIMENT has proved that if we take two equal quantities of milk, and place one in pans to the depth of six inches, and the other to the depth of only two and a half inches the latter will yield from seven to eight per cent. more cream than the former. This is the case more particularly in cold and damp weather, and at this time the mistake is most commonly committed. The temperature of the surrounding air has also a great effect upon the time required for the rising of the cream; experiment has demonstrated that the process is more rapid in warm than in cold weather. With the thermometer at

80°,	all the cream will rise in	10	hours
77°	"	"	12 "
68°	"	"	18 "
55°	"	"	24 "
50°	"	"	36 "
45°	"	"	43

Sprengel found that if milk was kept at a temperature as low as 37°, but little cream would rise in three weeks. In order to avoid the trouble of keeping the cream at the proper temperature, it is customary in some dairies to churn the whole milk. The advantages claimed by those who follow this plan may be briefly stated thus: The proper temperature can be readily obtained both in summer and winter; five per cent. more butter can be obtained from the same milk; the butter is not only of the same quality while fresh, but if properly managed will keep much better.—(*Germantown Telegraph.*)

HALDIMAND UNION CHEESE MANUFACTURING COMPANY.—A new cheese factory under this name has been started on the second concession of Haldimand, by the farmers in that neighbourhood, and is now in full operation. They have two vats capable of holding 600 gallons each, and can work up the milk of from three to four hundred cows; their buildings are pleasantly situated on the side of a hill where they have a plentiful supply of pure cold water, with descent enough to carry their slops to a distance for the purpose of feeding pigs.

ENGLISH METHOD OF PREPARING RENNET FOR CHEESE MAKING, AND THE IMPORTANCE OF PURE SALT FOR SALTING THE CURD.—In our description, while abroad, of the various styles of English cheese, and the methods of manufacture, we omitted to give the best English practice of preparing rennet. The best English dairymen think it always an advantage to the cheese that the rennet be prepared some time before it is wanted for use. Hence they prefer that it be made in February or March, and in as large a quantity as can be conveniently done consistently with the size of the dairy. Large olive jars are found useful for steeping the rennet. They are of various sizes, some holding thirty gallons. A hole is made at the bottom of the jar to draw the rennet from, which they think is much better than disturbing it at the top by dipping out. A wooden tap is used, as the acidity of the rennet would have an injurious effect upon one of metal. For convenience, they have a piece of board, with holes perforated in it, put into the jar, under the vells, to prevent their getting to the bottom, and so prevent the liquid running out by getting against the taps. The rennet is prepared by first making a brine strong enough to bear an egg. It is then boiled half an hour, and when quite cold put into the jar, and to every two gallons are added six vells and one lemon, sliced, which does away with any disagreeable smell. To this, an ounce of saltpetre is added for every two gallons. They think it essential in cheese making that the rennet be prepared some time in advance of its use, as it is more likely to check the tendency which early cheese has to heave. By being in large quantities the dairyman is not obliged to be often testing the strength of the rennet, which is the case when it is made in small quantities. The English dairymen pay especial attention to the salt which they are to use in making cheese, as some salt contains foreign substances which are very hurtful to the quality of curd. Thus, magnesia, they say, imparts a bitter taste, and lime (as an alkali) produces effervescence when meeting the acid of the rennet used to curdle the milk. From this effervescence often arises, they say, the blistering seen on the outside, and the bad colour inside the cheese. Nothing, therefore, but the purest salt is used, which in the West of England is refined at Bath, for dairy purposes, and on account of purity a less quantity is required than the common salt.—*Utica Weekly Herald.*

Veterinary Department.

Pneumonia in Horses.

THE disease Pneumonia, or inflammation of the lungs, is a common occurrence amongst horses, and especially so during the end of winter and the commencement of spring. In horses, as in man, pneumonia does not by any means affect both lungs at the same time in all cases, and in the majority of cases one is more inflamed than the other, and that is generally the right lung. The causes of pneumonia are various, such as sudden changes of temperature, impure air, &c. It is very apt to supervene upon an attack of catarrh or sore throat, if a horse is put to hard work when labouring under any of those affections. It is also frequently produced from carelessness in the administering of medicines, especially such as are not properly mixed or diluted, or from forcing medicines down the nostrils, a very common habit in Canada. The other day we were consulted about two horses which had died, showing all the symptoms of acute pneumonia, and produced from pouring irritant medicines into the nostrils. Pneumonia, like many other affections, is generally ushered in by a shivering fit, and at this period the skin is harsh and cold, which is due to the blood having left the surface of the body and flowing in an undue amount to the lungs. The pulse at this stage is not materially affected; but is sometimes rather weaker than natural. When the shivering ceases, the horse begins to breathe hurriedly; the perspiration soon becomes more laboured and oppressed; there is also flapping of the nostrils, with great working of the ribs. The laborious breathing is owing to the suffocating sensation the animal feels in consequence of the lungs being overloaded with impure blood. The pulse is quick and soft, not hard and wirey as in pleurisy; the mucous membrane of the nose and eye are injected, the ears and legs are cold, and the mouth very hot and dry. The horse generally stands persistently; in the early stage he may lie down, but only for a very short time. In some cases there is a short catching cough; the breath also feels hot; and if there is a space in his nox or stable through which cool air can enter, he is sure to keep his nose against it. He does so from an instinctive feeling, which nature implants to secure for him the advantage of cold air, which is more condensed than warm, and less quantity is therefore required to be inhaled for the purification of the blood. This circumstance alone should show the importance of supplying plenty of fresh, cool air, for chest affections. The coat is generally staring, and the secretions are impaired. The patient, while the acute symptoms last, refuses food, but will often drink, and a little cold water seems to be very grateful. If the acute symptoms become aggravated, death will take place from the third to the ninth day. The signs of recovery are the pulse becoming slower, the ears and legs more of a natural heat, returning appetite, and lying down occasionally. Pneumonia is not a very fatal complaint.

In the treatment of pneumonia, as in congestion of the lungs, we recommend pure air; therefore, without delay, place the patient in a cool, roomy, and clean box; have the body comfortably clothed, and the legs bandaged—the amount of clothing must be regulated according to the weather. If discovered in the early stage, when the pulse is full and oppressed, and the horse in good condition, a few quarts of blood may be abstracted. Give, also, one to two drachms of aloes, in balls. As a sedative, the Fleming tincture of aconite may be given in doses of ten drops, well diluted, every two or three hours. Encourage the patient to take nitrated drinks, and apply to the sides clothes wrung out of hot water. By the second or third day, if the horse is still not much relieved, cut the hair off the sides and chest, and apply a blister. If the disease has existed for any lengthened period, or when signs of debility are visible, blood-letting is injurious; but aconite may be used for a few doses, then nitrous ether, or the liquor of acetate of ammonia may be given in ounce doses every three or four hours. In many cases a quart of good beer, three times a day, is highly beneficial. After an attack of pneumonia the horse should be tenderly cared for some time.

PARASITES AFFECTING THE MUSCLES OF THE OX.—Dr. Cobbold, at the late meeting of the British Association, read a paper on the peculiar parasites infesting the muscles of oxen, which had first attracted attention during the epizootic of rinderpest among cattle. These parasites, he stated, consisted of an external egg-shaped envelope, separated by divisions into compartments, which were filled with cells. The nature of these cells, he remarked, was such as to render it quite probable that their origin was vegetable, although the bulk of evidence on the matter pointed to their animal origin. Dr. Cobbold, stated that these bodies are in no way characteristic of rinderpest, being found in the finest beef. His observations, moreover, established the fact of their being altogether harmless.

VETERINARIAN.

Poultry Yard.

Keeping Fowls in Orchards.

THE public has yet to learn the full advantages of keeping poultry. Few seem to appreciate the service they may do among the trees in an orchard. Let any one try them in an orchard of a quarter or half an acre, where they may be kept by picket fence, four or five feet high, putting in say 125 fowls, and observe the result. He will avoid the annoyance in the garden of which so many complain, while they will work among the trees, doing just what is needed, keeping the ground well cultivated, and destroying everything that can injure the fruit trees in the shape of bugs, worms, or other insects, and lay a large number of eggs, which are a cash article, to say nothing of the chickens which pay well for raising at the present time.

I have tried it, and I know it is so. I have about 100 fowls, which have worked admirably among my trees, keeping the ground in good condition, keeping off the insects, and promoting the growth of the orchard. I am satisfied that we have yet to learn the full benefits which may be derived from the proper management of fowls, and it is quite possible that the method I have suggested may offer the best way of getting our apple orchards into bearing condition again.—*Cor. Northern Farmer.*

MOVING.—A man in the country says that he moved so often during one year, that whenever a covered waggon stopped at his gate, his chickens would fall on their backs and hold up their feet, in order to be tied and thrown in.—*American Paper.*

HATCHING EGGS ARTIFICIALLY.—J. R. Glover writes to the New York Farmer's Club, that he has been so engaged in his experiments in hatching eggs artificially that he has not had his clothes off more than two and a half hours in any of the twenty-four for the last three months. The results of his persevering labors he sums up as follows:—I have used about "1,600 eggs, and I have now on hand, in good condition, sixteen chickens—just one chicken to one hundred eggs." Still he believes the thing can be done, if we only knew how.—*Prairie Farmer.*

A NEGRO DISCUSSION ABOUT EGGS.—In the fairest village of Western New York, the "culled pussens," in emulation of their white brethren, formed a debating society for the purpose of improving their minds by the discussion of instructive and entertaining topics. The deliberations of the society were presided over by a venerable darky, who performed the duties with the utmost dignity peculiar to his color. The subject for discussion on the occasion of which we write was, "Which am de mudder of de chicken,—de hen wot lay de egg, or de hen wot hatches de chick?" The question was warmly debated, and many reasons pro and con were urged and combated by the excited disputants. Those in favor of the latter proposition were evidently in the majority, and the President made no attempt to conceal that his sympathies were with the dominant party. At length an intelligent darky arose from the minority side and begged leave to state a proposition to this effect; "Spese," said he, "dat you set one drozen duck's eggs under a hen and dey hatch, which am de mudder, de duck or de hen?" This was a poser, was well put, and nonplussed the other side, even staggering the president, who plainly saw the force of the argument but had committed himself too far to yield without a struggle; so after cogitating and scratching his wool a few minutes, a bright idea struck him. Rising from his chair in all the pride of conscious superiority, he announced: "Ducks am not before de house; chickens am the question; before I rule de ducks out!" and do it he did, to the complete overthrow of his opponents.

The Apiary.

American Bee Plant.

(*Cleome Integrifolia.*)

THIS plant has been cultivated to some extent in this neighborhood for several years past, and proves one of the best and probably the very best honey-producing plant known. It was introduced by the writer about the year 1860 as a new annual flowering plant, from the Rocky Mountain region, but its great value was not at that time known, and was not discovered until a year or two after, when the writer was surprised to see the plant covered with bees while other flowers in the immediate neighbourhood were quite neglected. The next year a much larger quantity of this plant was grown, and it was found that the honey stored in boxes at the time that this plant was in bloom was of a much finer quality than any other. Every succeeding year of its cultivation confirms this, and I find that while this plant is in bloom nearly all other flowers are discarded; even the buckwheat, which every one knows is a great favorite with the industrious little fellows, is quite deserted. The honey stored from this plant is positively the finest, both to the eye and the palate, of any that I ever saw.

The plant is of easy culture and looks well in the flower garden. It is a strong grower, and much branched like the common mustard plant, though its flowers are a bright purple, and are produced from midsummer until frost destroys it in autumn.

It will grow on any soil, though a rich one suits it best, and may be sown in drills, or broadcast if the ground is clean. Autumn is the best time for sowing, as it comes into bloom sooner. It has already acquired the local name of "Bee Plant," in this vicinity (Chicago) and as it is indigenous I propose that we call it the Great American Bee Plant.—H. A. TERRY.—(*Prairie Farmer*).

☞ The usual time of the issuing of a swarm is from ten o'clock in the morning till three in the afternoon. I have, however, known a swarm to rise as early as seven in the morning, and as late as five in the evening. Butler mentions an instance of one rising later than five.- BEVAN.

☞ When the general massacr of drones takes place, not only all those that have undergone their full transformations, but every embryo, in whatever period of its existence, shares the same fate; the maxim with bees being to attend to the general welfare of the community, not to allow those to eat that are not useful in some way.—*Am. Bee Journal and Gazette.*

☞ ATTENTION to the following particulars may guard the bees from many of their enemies, viz: A frequent cleaning of the hive-floors; the use of new or well-cleaned hives; the timely renewal of the coverings; and keeping the ground bare around the apiary, particularly in front of it. This last precaution may also prevent the entanglement of the bees in rubbish or long straggling vegetables, should they, on their return home, fall down through fatigue or the weight of their loads.—*Am. Bee Journal and Gazette.*

☞ Bees, when swarming, are generally peaceable, and, if treated gently, may be hived without danger or difficulty. A remarkable instance of their inoffensiveness at this period is related by Mr. Thorley. Wanting to dislodge a swarm from the branch of a codling-tree on which it had clustered, he placed the hive in the hands of a maid-servant, who, being a novice, covered her head and shoulders with a cloth to guard her face. On shaking the tree, most of the bees alighted on the cloth, and quickly crept under it, covering the girl's breast and neck up to her chin. Mr. T impressed her with the importance of neither flinching from nor buffetting the bees, and began immediately to search for the queen, which, on finding, he gently seized and removed, but without effecting a dislodgement of the swarm. Thus disappointed, he suspected there was a second queen present, which actually proved to be the case. On securing her and placing her in the hive, with a portion of the bees, the rest followed in multitudes, till in two or three minutes not one bee remained on the girl, who was thus released from her state of apprehension and alarm, without feeling the point of a single sting.—*Am. Bee Journal and Gazette.*

Correspondence

Under-Draining. Baffled by a Quicksand.

To the Editor of THE CANADA FARMER:

SIR,—I would inform you that I live by ditching and under-draining in the township of Nissouri. Some years ago I took a small piece of under-draining to do, thinking that it was clay ground; but I struck a small vein of quicksand. Not paying much attention to it, I filled it with stone, but it did not last long before it choked up with sand. I then obtained the draining tiles, and laid them on a plank through the quicksand; but they likewise failed. I resolved to make one effort more; and having obtained suitable lumber, had it jointed, and made a tight pipe, so that it would reach five or six feet both above and below the quicksand. I thought now I had surely mastered the difficulty; but to my surprise it choked up again. I then took up my pipe, and found it filled with sand, hard and tight.

I would be very thankful if you could (through your columns) furnish any information about doing up an under-drain through quicksand, and have it permanent, as it would be a great advantage to myself and also to our Nissouri farmers.

For the information of my brother farmers, I will briefly describe my method of underdraining in clay land. I have a spade that is six inches wide and fifteen inches in length; and with this spade I finish the digging out of my under-drain. I then take small stones, and pick two as shapely ones as I can find, and place them edgeways in my six inch channel, each of them to the outside, and have them meet at the top, and bind them with other small stones, so that it leaves a little archway underneath throughout the whole length. I next fill up my fifteen inches with small stones; I would prefer to have them very small on top, and prefer even gravel if it could be obtained easily. This makes a good, durable underdrain in clay land, (without the draining tile), and I believe it will last for a good many years.

The farmers around here will have their ditches dug eighteen inches wide in the bottom; they will lay a sizable stone on each side of the bottom, and then, what they call a cap, or pretty large stone, across the two, thus leaving a large channel. But I think one large stone is in the way of the water more than a number of small ones. Besides, the narrower the channel, the more pressure it has to keep itself open. WM. ROOKLEDGE.

NOTE BY ED. C. F.—If any of our readers have been more successful in draining quicksand than our ingenuous correspondent, they would do well to publish their experience.

HOP CUTTINGS.—Will some of our hop growers inform Mr. W. N. Wallace, St. Thomas, C. W., at what price he can procure "hop roots" or cuttings ready to plant?

POSTAGE ON THE CANADA FARMER.—D. J. asks:—"Is it lawful for a Postmaster to charge postage on the CANADA FARMER when mailed to a friend?"

ANS.—The CANADA FARMER is sent free of postage from the publishing office only; if remailed or posted by private hand, it is subject to the usual charge on newspapers of one cent for each copy.

A SUPERFLUOUS REQUEST.—A correspondent who may be a subscriber, but cannot have been a reader of the CANADA FARMER, asks for "information about the *hop*, soil, cultivation, training, &c. &c." If he had looked into any number of the journal since the beginning of April he would have saved himself the trouble of writing. His more reasonable enquiry respecting cranberry culture we will bear in mind.

A GOOD CLIP.—Mr. D. Messenger, of Browda, writes:—"In your issue of the fifteenth of June I notice the statement, in a paragraph headed "Canadian sheep still ahead," that Mr. Snell clipped from six sheep 103 pounds of wool, and some farmer in Michigan clipped seventy-eight pounds from the same number. Now, the difference is so very great, that I should like to know through your paper if the sheep were washed or not, and if they were rams or ewes, and the age, &c. I myself clipped from five shearling ewes, this year, fifty-two and a half pounds; three clipped ten pounds, and the others eleven and a half pounds, and one ram twenty-two and a half pounds, making a total of seventy-five pounds washed wool from six sheep, which I consider pretty good."

ORIGIN OF PLATT MIDGE-PROOF WHEAT.—The following surmise is addressed to us by "One who visited the Exhibition in 1851:"—"In perusing THE CANADA FARMER, I perceive various communications in regard to Platt Midge Proof Wheat. One correspondent states that Mr. Platt imported the wheat from France. Mr. Platt is a person of the strictest veracity, and I am confident he never stated that he imported the wheat from France. Mr. Boulter gives a plain straightforward statement of fact: he states that it was called Amber wheat; it is (Russian or Poland) Amber Flint wheat. Other correspondents, on comparing their wheat find they have a similar kind; the question hence arises, where was the seed procured? I believe I can solve this problem. In the year 1851, at the Exhibition (or World's Fair) in London, the three gentlemen who had charge of the Russian department were particularly courteous to persons from Canada who visited that department; the climate of Russia and Canada being similar in some respects, they kindly gave small samples of the different kinds of grain to persons from Canada who expressed a wish to have some. The Amber Flint wheat was one of the samples. Persons having wheat of that description, if they will trace the source from whence their seed came, I think they will find that it was procured from persons who visited the Exhibition in 1851."

The Canada Farmer.

TORONTO, CANADA, JULY 15, 1867.

Harvest Prospects.

SINCE our last issue dry weather has for the most part prevailed. An unusually wet spring is in this climate very apt to be followed by a corresponding amount of long-continued and very trying drought; and the present season has proved no exception to this very general rule. As a consequence, we hear in several quarters of some short crops, more particularly in the late-sown spring varieties, especially barley, which, from all accounts, has suffered most. Spring wheat also, a crop with superficial roots, was in some places beginning to show the need of moisture. From many other localities, however, we still continue to receive very favourable reports, both in the public press and by private communications. Refreshing showers have visited many sections of the country, and there is every prospect of their recurrence in frequency and amount sufficient to mature the more important crops. Our exchanges from all parts of Canada speak in hopeful terms; and in the neighbouring States, where rain in superabundance rather than drought seems mostly to have prevailed, the accounts are almost unanimous of the encouraging prospects of the coming harvest. Our liability to drought is a difficulty which, if we cannot obviate, we may very materially mitigate; and the experience of the present and many past summers should teach us the great importance of deep culture. By attention to two very much neglected elements of good farming, under-draining and deep cultivation, we should escape to a great extent the opposite evils of too much and too little moisture in the soil. The first operation would quickly remove the superfluous fluid, and render the ground at once warmer and in a fitter state for agricultural operations, while by the latter we secure a deep bed of loose aërated earth, which would not too quickly part with the requisite amount of moisture by evaporation.

State Entomologist in Illinois.

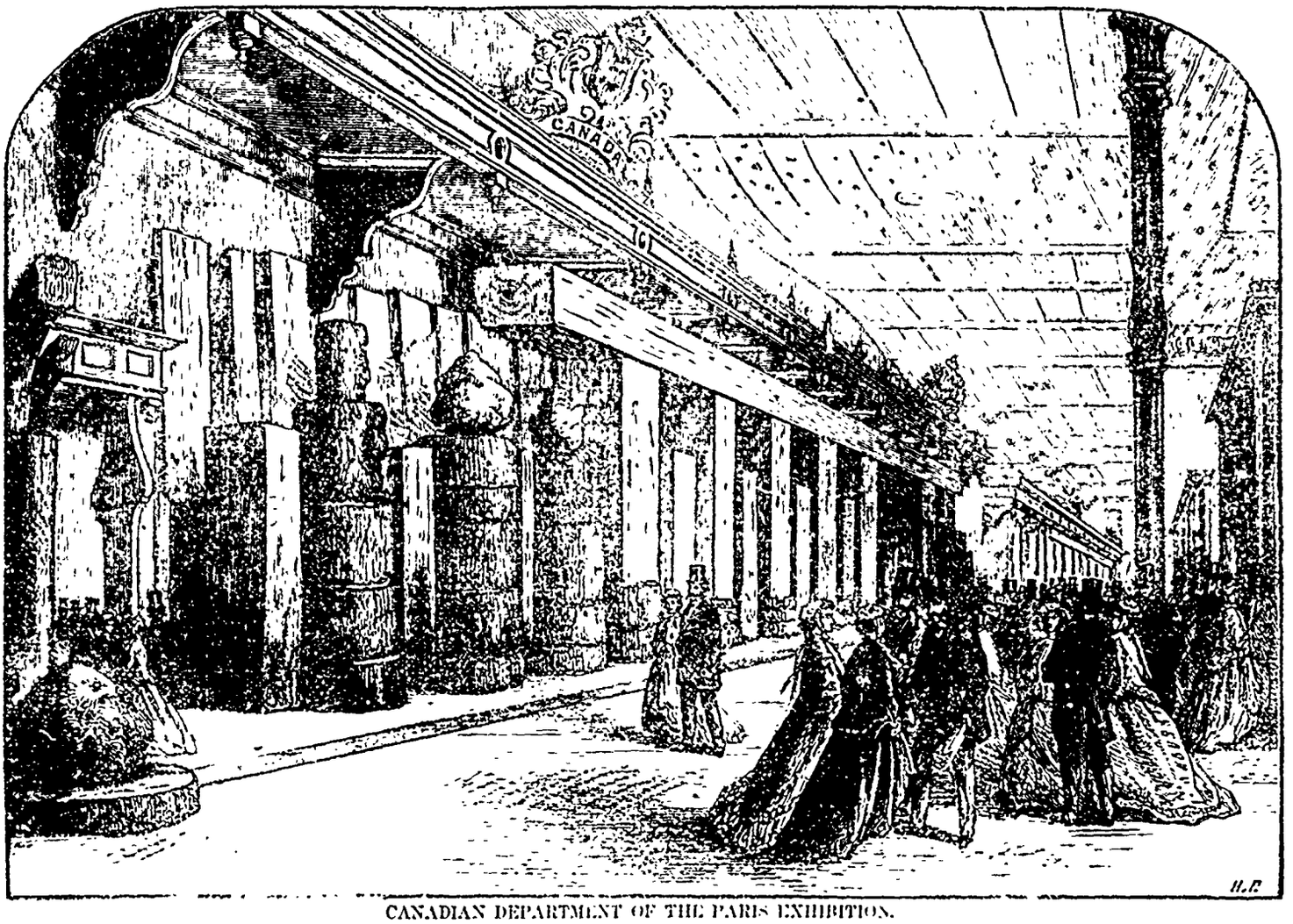
SOME months ago a bill was passed in the Legislature of Illinois, authorizing the appointment of a State Entomologist, with a salary of two thousand dollars per annum. We are much pleased to learn that the appointment has been conferred upon Mr. Benj. D. Walsh, of Rock Island, Ill., the talented Editor of the *Practical Entomologist*, which is published at Philadelphia, by the Entomological Society of America. Few men could be found in the whole of America better qualified than Mr. Walsh for the performance of the duties of his new office; we heartily congratulate the State upon the excellent choice that has been made. We have no doubt that the investigations that Mr. Walsh has been so long conducting, from the pure love of the science of Entomology, will now be carried on to a still greater extent, and prove of immense advantage not only to the farmers and gardeners of his own State, but to those of the whole of this Northern portion of America. Several States have now their Entomologist as well as Geologist, the investigations of the former being found to conduce as much to the welfare of the community as those of the latter, though conducted in quite a different department of natural science. It is much to be desired that this country should follow the example set it "on the other side," in New York, Illinois, etc., and employ competent persons to investigate the habits, injuries, benefits, and in short the whole economy of the insects with which this country abounds. Much, indeed, might be done by the Entomological Society of Canada, had it only the means of publishing and diffusing the information continually being acquired by its members, but which at present, from the want of funds, is confined to its own immediate society.

The United States Wool Clip.

WE find some difference of opinion among our American exchanges in reference to the extent of the wool crop in their country the present year. The *Ohio Farmer* does not think the yield will equal that of last year. The reasons assigned for this opinion are: 1. That the sheep in that State have not increased to any considerable extent. 2. That the season has proved unfavourable for as heavy fleeces, per capita, as usual. 3. That in the Western Reserve many farmers have changed from wool growing to dairying. 4. That large sales have been made to the butchers, owing to the high price of mutton. 5. That there has been much loss among lambs. The journal above-named neither expects any material advance nor decline in the price of wool.

The correspondence of the *Prairie Farmer* indicates a large production of wool in that State, and holders are advised to accept the first good cash offers. "Wool grower," an intelligent writer in that journal, thinks farmers will find it to their interest to sell at their barns whenever buyers apply with money in hand, instead of running the risks of delays and losses from the tardy operations of commission merchants and possible dull markets.

The *Country Gentleman* thinks farmers should not be too ready to accept low offers based on large estimates of production, but should wait a little until the facts are more definitely known, and the market has had time to reach a settled condition. This appears to be wise advice, and it is appropriate for us as well as our American neighbours. It is confirmatory of the opinions and counsels expressed in our last issue.



CANADIAN DEPARTMENT OF THE PARIS EXHIBITION.

Canadian Contributions to the Paris Exhibition.

The accompanying illustration represents the Canadian Court at the Paris Exhibition, and is thus referred to in the *Illustrated London News*, from which our artist has copied his beautiful engraving: At the extremity of the British section of the Exhibition, and adjoining the machine-gallery, the various British Colonies make their modest display. Canada, South Australia, Queensland, Victoria, Nova Scotia, and even Malta, are here represented. Canada exhibits specimens of timber, in the form of a series of rude-looking columns, some of which are a couple of feet square, and which extend from one end of the Canadian Court to the other. Above them is a kind of canopy made of birds-eye maple. The collection of polished fancy woods exhibited in this court is a very fine one. Here are samples of blistered, birds-eye and white oak; black walnut, birch and cherry: blistered and black ash; birds-eye, curled and soft maple; with tulip tree, butter-nut and button woods, and white elm, and white and yellow pine.

Here also are collected other Canadian contributions in natural productions, manufactures and arts; among them specimens of natural history, consisting of birds, fishes, insects, minerals, &c.; backwoodsmen's tools made from native iron; a variety of Indian work, furs, &c., and a large and interesting model of the village of St. Anne.

A Canadian writing from Paris, thus speaks of the agricultural contributions from this country to the world's great exhibition:

Canada's frontage on the fourth gallery is marked by pines and sylvan scenery *à la mode*, that makes it an easy place to find. An English manufacturer of muslins has had the audacity to make each pine the upright down which to suspend a muslin curtain: an incongruous addition which detracts not a little from the otherwise picturesque and appropriate device which introduces the visitor to various specimens of the productions of our forests and fields.

There is a table of woods that is really the gem of our exhibition, contributed under the heading of "collection of woods for educational purposes" by the Abbé Brunet, of Quebec. These specimens, all carefully selected, and of the most ornamental woods we have, are in the shape of veneered boards, two feet by one, arranged in tiers, so that the polished slice and the plain slice of the same piece are seen together. It is really too hot to take more than one glance at the splendid skins and furs that decorate the compartment wall, and are sent by O. Cote, of Quebec. Round about the court are tubs or barrels, with their covers on to keep out the dust. The public are requested to touch nothing; but a very curious and impertinent British farmer who chanced to lift the cover, would see some samples of grain that are quite worth being hidden, if there is any chance of their being run away with.

The wood trophy is in the form of columns, great at the base, and with each ring in the structure growing smaller, till they culminate at a height of about twelve feet surmounted with an enormous piece of squared pine, running horizontally across their tops. Two fair sized "knees" act as sentinels at the entrance to the court, but in my presence were severely criticized by a Montreal gentleman, who seemed to doubt Canada being so far "gone in them" as to be without better specimens. Dr. Tache, however, assured him that they were selected from the best at Quebec, by the official inspectors, who were in no case refused when offering to purchase on account of the exhibition appropriation. There was a stick to my own knowledge, of white oak, lying a few months ago on the bank at Oakville, that could have swallowed all the specimens here as easily as did Aaron's rod swallow its rivals of yore. The Doctor expects, however, to stand well with the jury.

The show of agricultural implements is not to be compared with what I have seen more than once at United States Fairs. Here, it is true, are root-cutters, cotton-choppers, hay-tedders, hog-tamers, corn huskers, an excelsior horse pitch-fork, and patent potato-digger; but the reapers and mowers are not the attraction they used to be. Perhaps it is that we know them better now.

Edible farinaceous products, and the products derived therefrom, are one of our chief staples of trade; and as our show, if not an advertisement, is nothing, in this department we should excel. The chief exhibitors are St. Anne's school, Messrs. Bell, Shaw, Fleming, and C. J. Bloomfield, of Toronto, Messrs. Peh and Pile, of Whitby, John Smith and Thomas Brownbie, of York, Bartholemew and Tran. of Markham, John L. Paterson, of Scarboro', E. McNaughton and Walter Riddell, of Cobourg; and a host of Lower Canadians make up the list. Wheat, winter and spring, barley, rye, peas, buckwheat, maize, oats, flour, beans, oatmeal, fecula from potatoes, and some other articles comprise our effort in this class; but nothing is said, so far as I saw, of the weight per bushel, or the yield per acre, and in this respect the show we make is deficient. It wants detailed placarded information to arrest the passer-by. A man always stops to read, if, in the confusion of bewildering objects that he does not recognize, a friendly card tells him all about a thing.

Colonel Denison has some flax, raw and steeped; and Mr. Bloomfield, of the Canada Land and Emigration Co., makes a similar contribution; the latter being one of the most tastefully arranged ones in the department.

Agricultural Intelligence.

Results of Steam Cultivation.

An elaborate report has recently been made in England by Mr. Clarke, on the results of Steam Cultivation in various parts of the country, and on a variety of soils. Mr. Clarke was assisted in his inspection of steam-cultivated farms by a committee of gentlemen appointed for the purpose, and the results of their joint investigations establish most conclusively the great advantage of the new method, both in point of economy and thorough culture. We extract the following particulars from a condensed account of the report in the *Farmer* (Scottish):

Mr Clarke has taken "medium and light land farms" as the subject of the first section of his report, although comparatively little of really light soil under steam cultivation was seen by the committee. Beginning with a medium farm of 300 acres arable and 100 acres grass, in Northamptonshire, on which steam tillage was introduced in 1858, he found a reduction of seven horses, representing a saving of £308 a-year, or, after deducting the total outlay for a year's steam cultivation, of £181 as the clear annual gain from this source alone of employing steam in place of horse power. Mr. Edwards, the occupier of the farm, stated that "the work is better done, the land is more forward, not so starved, and the crops are better." The texture of the soil is altered, so that it ploughs easier every year. The land is clean, and the root crops heavy. Mr. Edwards reports that he "should not like to farm without steam."

Mr. Francis Sowerby, Aylesby, Lincolnshire, has been using steam since 1859, and while he has been enabled to lessen the number of horses kept by him, "the great thing is that there has been a decided increase in the yield of cropping since the steam cultivator started. The drainage, too, is improved; and the root crops are eaten off with somewhat more advantage." Mr. Clarke states that "from the mere cleansing of one field, Mr. Sowerby considers that he gained as much as £150 in a single year. This forty acre piece was foul; had it been ploughed it must have become one mat of twitch; whereas, treated by the steam-engine"—Howard's set—"it gave a better crop than it had ever produced." Mr. Dring, Claxby, Lincolnshire, finds that the results of steam cultivation on his farms are "better drainage from breaking into the 'sole'; on the better land a greater breadth of corn is grown, and the crops are more productive, from being planted at the proper time and none out of season."

Passing on to the heavy land section, we find that on Mr. Bignell's farm, Bucks, the drainage of cold, stiff clay is decidedly more effectual from the deep stirring of the steam-cultivator; that the high-backed lands are levelled, and yet water does not stand anywhere, "even in the present wet time. On "the Britannia Farms," in the possession of Messrs. Howard, Bedford, Mr Clarke and his fellow inspectors found a splendid field of mangolds, "one of the few first-class crops we saw," he says, "in all our journey," also magnificent swedes and turnips, though the particular piece has not been at present drained." Similar testimony is furnished as to the results of steam cultivation in all the stiff clay farms visited. To give but one further example:

"Mr. Holland states, with reference to greater yields, that by his experience, and by comparing notes with other steam-power employers in that locality, he thinks 'it may be said that the increase per acre attributable to steam cultivation may be put at eight bushels per acre.' Mr. Clarke proceeds to say, "This is remarkable evidence; the steam-plough appears to give Mr. Holland from £190 to £270 a-year by saving in tillage labour; it gains him a quarter of wheat, say £2 10s. per acre, over half his farm, or £450; which together amounts to £640, or £720 a-year, equivalent to nearly £2 per acre on all the arable land! Then, beyond this, a further profit must accrue from the extra quantity of roots, which feed more live stock.

With such reports of the efficacy of steam cultivation in England, we cannot think it will be very long before some enterprising spirit with the necessary means at his disposal will introduce this efficient power into Canadian agriculture.

☞ Mr Timens, of West Salem, Marion Co., Ill., has sold his crop of strawberries of forty acres of land for $50,000.

Notes on Trade and Agriculture in England.

We extract the following observations on topics of practical interest to the Canadian Agriculturist from the report of a speech delivered recently at the Corn Exchange, by Mr Worts, President of the Toronto Board of Trade: He described the immense quantities of shipping to be seen at Liverpool, and gave a sketch of the large business done on the Docks, and the vast sums daily changing hands there. On the Corn Exchange, he said, he noticed there was very little Canadian grain to be seen. He only noticed a few lots of barley and some Lower Canada oats of very poor quality. This, however, did not surprise him when he remembered that for Canadian grain there is now as good a market nearer home. Canadian oatmeal, he found, was selling there in large quantities, and at that time at profitable rates. The barrels in which it was shipped sold at two shillings each, which he thought a good price, and he advised Canadians to take advantage of this, and send whatever products they were shipping to England in barrels. He then referred to his visit to Manchester, and showed that the much talked about decline of the cotton trade had in no way affected this great cotton market, as far at least as externals could be seen. It was increasing, he thought, in wealth and manufacturing interests. He described a few of the cotton mills which he had visited, and explained the colossal proportions upon which they are conducted and worked. He next spoke of his visit to Leeds and of the traction engines now in use in England. In the streets of that city, he said, he saw these engines at work carrying heavy loads, moving as easily and noiselessly as any ordinary waggon, no more notice being taken of them by the public than of any other description of vehicle. He was glad of this, as he had heard it feared by many that the engines would make so much noise and move along with so much difficulty that their use would be prohibited on the common roads of Canada, which some people supposed were intended only for horses. From what he had seen in Leeds, however, he was certain that the engines would not injure any macadamized road, and would in no way inconvenience the ordinary traffic of a street. His announcement that he had purchased a traction engine in England brought down loud applause. He said that in the course of a few weeks he hoped to be able, practically, to demonstrate to the citizens of Toronto the suitableness of such engines for the work of this country, as the engine he had purchased would be here by that time, and he would drive it through the streets of Toronto. After speaking of his visit to some cotton mills in Leeds, he next referred to what he saw in Mark Lane, London, which, he said, was to him as a Canadian grain merchant, the most interesting place in the metropolis. He there saw some samples of Russian and Californian wheat. The Russian wheat was, he thought, not so good as the Canadian while the Californian grain was no better than what used to be grown here a few years ago. In speaking of agricultural matters, he said that his native county, Suffolk, and the neighboring county of Norfolk were so highly cultivated and so rich in pasture and arable land that he could compare them to nothing but a beautiful garden. The farmers there, he found, were not at all deserving of the sympathy which it has become the fashion to bestow upon the tenant farmers of England. They were all well off, and could easily raise on their farms forty bushels of wheat to the acre. Fifteen bushels, he said, would pay all expenses of cultivation, leaving the farmer a large profit. This handsome result, he explained, was arrived at by the judicious use of capital on the farms, using the best manures, &c., &c. He could not see why the same results could not be arrived at in Canada, where the soil was naturally as rich as in Norfolk or Suffolk. At the Norwich fair, which he attended, there were 13,000 sheep, all within view, penned up for sale; in quality, however, the animals were no better than those in Canada. He remarked that there were few black-faced Norfolks amongst them, and on enquiry he found that that breed is rapidly dying out. In Norwich he visited the great establishment of Messrs. Coleman, of mustard celebrity. To give an idea of the immense business done by this firm, he mentioned that they pay no less than £10,000 per annum to their commercial travellers alone. He made a thorough inspection of the flouring mill owned by the firm and described the new machinery which he saw in operation there. He then referred to the proposed cheap railways, stating that when in England he had made himself acquainted with all the information on the subject that he could. He expressed in a marked manner his confidence in the system as applicable to the local trade of this country, stating that although affording less facilities than the usual style of railways for the carriage of an enormous through traffic, such as that from the great West over the New York Central line, they were yet, he found amply sufficient to accommodate the wants of any local trade in Canada. During his stay in England he had conversations with eminent engineers; among others with Sir Charles Fox & Sons, who stated that it was generally erroneously supposed that because the railways were cheap they were necessarily flimsy. This, he was assured, was the reverse of the fact. Those lines already constructed in Australia, Norway and elsewhere being, he was assured, as well built as complete in their outfit, and as effective for the purpose for which they were required, as any rail ways in England.

Agricultural Department of the Paris Exposition.

A writer in the *North British Agriculturist* thus speaks of the Agricultural display at the Paris Exhibition:—

At the Champ de Mars, under separate roofs, are to be seen, either in a complete form, or as models, the systems of agriculture adopted in many different countries—from the north of Russia to the sunny clime of Egypt. From America are shown many labour-saving machines, mowers, reapers, and horse-rakes; some of these machines are so carved, painted, and gilded, as to satisfy the visitor that they were intended only for show. Comstick's horse or steam digger or spader was shown at work at Billancourt, and it wrought tolerably well—a model being exhibited here. The Americans also exhibit steel forks, axes, spades, and shovels, all excellent—being very superior to English-made ones, from their lightness and strength. In this department I saw also one of the newest "ideas" in machinery—a hand-hoe which records the number of strokes which the labourer using it gives the soil. There was also a capital display of single-furrow and turn-wrist ploughs; this latter is the simplest and most efficient implement of the kind yet constructed. Mechanists may learn much from the American manufacturers—everything they make is so constructed as to be of the least complicated form, for effecting one particular object. They have great advantages over English manufacturers in making machines of wood, as they possess the finest timber, although the price of the best descriptions is considerable. Their wheel carriages, and every machine for rapid movement, combine lightness with strength. I am satisfied, from what I have seen of American agricultural implements, that were English manufacturers to study them thoroughly they would derive many useful hints from them. It is, I think, a great pity that a complete display of their implements and machines could not be had in Scotland; for although they are not exactly suited to our needs, yet with certain alterations they would suit us better than those of many English makers.

In the English machine and implement deparument which occupies a large shed in the Champ de Mars there is a considerable display of steam cultivating apparatus. Messrs. Fowler & Co., J. & F. Howard and Ransomes & Sims, have all excellent stands. Messrs Howard show their new reaping machine—a model of which Mr. James Howard brought from the United States. Judging from its appearance in the exhibition, I think it will not be easily overpowered by any kind of crop being adapted alike for light, indifferent, and heavy crops.

In the Russian and other Continental departments, it is quite apparent that many implements and machines in use in these countries are borrowed. Even Fisken's plough, driven by water, is copied. This invention of a Perthshire schoolmaster was first shown in operation in that county. Messrs. Fowler having acquired the patent, it is embodied in the steam ploughs manufactured at Leeds. There is a curious display of straw-cutters, turnip-slicers, and corn-bruisers copied more or less correctly from English machines; many thrashing machines, some consisting simply of a drum and shaker, though in form differing little from Meikle's. Of the various machines for dressing grain, those in the French department are worth noticing. It is quite evident that the long rotary screens of which Ransomes and Sims produce such a quantity, are copies—such machines have long been in use in France. Many of the French machines are excellent, separating and sizing the grain with very apparent success.

No section of rural operations is unrepresented in the French department. The simplicity and cheapness of the French-made implements and machines are points in their favour; but assuredly none of those I looked at would in Scotland be even compared with the better descriptions made in England. At Billancourt, all the different agricultural implements and machines can be inspected with great freedom; and certainly the English manufactured articles com-

pare favourably with those of any other country in completeness, strength, and efficiency.

At Billancourt there are several covered sheds fitted up for sheep, cattle, and horses. In these places are shown, during the whole exhibition, relays of stock. Each class occupies the sheds for two weeks, and gives place to another lot for other two weeks, until all the breeds will have been exhibited which France possesses. In the sheep department I only saw some Metz Merinos. I was much disappointed at not seeing the Rambouillet-Merinos. As the season advances the show at Billancourt will be very interesting to visitors. The grounds are occupied with all sorts of cultivated crops; also by flowers, fruit-trees, and every description of horticultural and agricultural plants. I had the greatest pleasure in looking over the objects brought together in the various collections, and I can confidently say that any of my farmer friends who choose to spend their holiday in Paris, will not be disappointed in the exhibition itself which, without exaggeration, is the finest, most complete, and most conveniently arranged for inspection, of any previous exhibition, either in this country or anywhere else.

The Wines of Canada.

The specimens of wines sent to the Paris Exhibition, by the St. Clair Association, of Cooksville, have attracted considerable attention in France, and the *Moniteur Vinicole*, an established authority on the subject of wines, thus speaks:

"Canada, of which we have not yet spoken, so small is its importance as a wine-growing country, has nevertheless drawn our attention by the display of the produce of the vine-harvest of Upper Canada. It is because this exhibition was unique that we felt ourselves obliged to recognize it; and well was it that we did so for of all the wines that we have tasted, not made in France, it certainly is that which approaches nearest to the nature of our *vin ordinaire*. It is at the foot of a hill that has been planted a vineyard of about fifteen hectares, and the plantation has been in existence for seven years. The vines were not brought from European countries; they have been taken from the wild vines of which there are so many in the country. We have here the plant, the extent of its culture, and its age. And now let us look at the wine. It is that which we call in France a *vin gris*, the pale red of which, by its body and its colour even, and by its strength, shows that it is only a year old. By its taste, its *bouquet* and its freedom (*franchise*), it approaches the light wines of Beaujolais. Tartaric acid abounds in it, as may be known by the taste. This wine is solid; for, born of a mother aged only five years, since it is of the harvest of 1861, and the vineyard is seven or eight years old, it has traversed the seas, submitted to the impressions of cold and heat, without the least alteration in its quality or its clearness. There is in all this matter for reflection for our producers of wines."

This is high praise from a French authority, since it indicates that our wines may be placed in comparison with the table wines of France. The same authority does not admit that any of the Australian wines are equal to those which they profess to imitate. When we have more experience in growing the grape in Canada, we shall probably find many spots where wine can be made of as fine a quality as the best of France, Germany, or Spain.

Fall Agricultural Exhibitions.

East Riding County of Northumberland—Will hold their annual Exhibition in the Village of Brighton, on Wednesday, the 2nd of October.

South Ontario.—The Fall Exhibition of the County Agricultural Society of South Ontario will be held at Whitby on Tuesday and Wednesday, October 1st and 2nd.

Norwich.—The Norwich Agricultural Society will hold its Exhibition on Tuesday and Wednesday, the 8th and 9th days of October, on the Show Ground, Norwich.

South Grenville.—The annual exhibition of this society will be held on Wednesday, Thursday, and Friday, the 2nd, 3rd, and 4th of October next, being the week after the Provincial Exhibition.

☞ At Hammonton, the newly settled fruit district in New Jersey, there are one thousand acres of strawberries, and only 3,000 inhabitants.

☞ An exchange says that acres of grass in some parts of Vermont have been destroyed by grub worms. They eat the roots, and give to the ground the appearance of having been burned over.

☞ Geo. W. Rublee, of Berkshire, Vt., made 2,000 pounds of maple sugar from 200 second growth trees last Spring.

☞ A farmer in Orleans Co., N. Y., in one year sold 1,600 pounds of butter from eight cows, and supplied his own family.

☞ The Colorado potato bugs are doing very great damage in Iowa and other Western States. No effectual prevention has been made public.

☞ An eagle was caught in a trap at Somerset, Niagara Co., N. Y., May 24th. He measured seven feet from tip to tip of the wings, and had eaten seven lambs from the flock of one farmer.

☞ A gentleman from Clinton Co., Ohio, informs the *Dayton Journal* that, from some cause, many apples and peaches are dropping from the trees. It is feared that the crop there will be materially shortened.

☞ From a careful estimate, based upon trustworthy data, it is believed ten years ago the number of working horses in N. Y. city was 50,000; five years ago it had increased to 70,000, and it is now estimated at 110,000.

☞ A party of West Virginia sportsmen recently spent a day in fox hunting, and at night left the dogs still running. They ran into a flock of sheep, and killed eighty of them. The owners of the dogs handed over $600, and received the carcasses of the sheep.

☞ The Dutch Government has ordered 7 000 head of cattle to be shot and buried in a single week, in Holland, to prevent the spread of the cattle disease. The owners resisted in some instances, and two men were killed and two wounded by the soldiers.

☞ Locusts are in myriads in Kansas this year. To protect his wheat a farmer has a locust trap which he finds effectual. He scatters hay around his wheat fields. The locusts gather in it at night, and he sets fire to it early in the morning, and thus saves his wheat.

☞ The *Scientific American* says:—There are now in operation in the States of Illinois, Wisconsin, Indiana, Iowa, Michigan, Minnesota, and Ohio, about 175 woollen mills, more than half of which have been started since 1860, running 350 sets of machinery, and consuming annually about 8,500,000 lbs. of clean wool.

Immigration.—On Monday last part of the 350 immigrants who came out by the "St. George" from Glasgow arrived in Guelph, where their friends had been awaiting them. They were the most intelligent lot of immigrants that have arrived here this season, and will prove a great boon to the part of country in which they have decided to settle.—*Guelph Mercury.*

Destruction of Sheep In Garafraxa.—At last meeting of Council, claims amounting to nearly $100 for destruction to sheep "by dogs," were ordered to be paid. Some ask whether all the damage is actually done by tame animals of the canine species. Considering the number of wolves seen in the township, we are inclined to think that a great deal of the blame may justly be laid on their shoulders.—*Guelph Mercury.*

Change of Owner.—We learn that the Berkshire boar which took the first prize at the last Provincial Exhibition, and of which a representation was given in the Jan. 1st number of this journal, has been sold by his late owner, Mr. Robert Worm, and is now the property of Mr. William Jackson, jun., of Toronto Gore, Castlemore Post office.

Reapers and Mowers at the West.—In a recent call from Mr. Emery of the *Prairie Farmer*, we learn that the sales of Reaping and Mowing Machines by manufacturers and agents throughout the West, had been unprecedentedly heavy the present year. The *Ohio Farmer* reports substantially to the same effect as to the establishments of that State. A heavy harvest is anticipated, and farm machinery of all kinds, we trust, may be strained to its utmost capacity to take care of it.—*Country Gentleman.*

Beet Root Sugar. A consignment of over 27,000 pounds of Illinois sugar has been made to Chicago, from the beet-sugar manufactory of the Germania Sugar Company at Chattsworth, Livingston county, Ill. This is a portion of the product of past season's business. Most of this sugar, and perhaps all of this consignment, was made in March last, from beets which had been kept in the pits during the winter. This fact is noteworthy as indicating the richness in saccharine of the beets produced in this country, and the length of the manufacturing season as compared with that of the beet-sugar countries of Europe; for there beet so deteriorates in value after the first to the middle of February as to seriously affect the season's profits.—*Chicago Republican.*

The Cattle Plague in England.—More favorable reports come from England in reference to this inveterate scourge, and in the week preceding the last accounts no fresh cases of rinderpest had occurred in London. "We can hardly hope," says the *Agricultural Gazette*," that the plague has yet been completely eradicted from the metropolis, but it is nevertheless satisfactory to know that a very serious outbreak, comprising more than 150 attacks since the end of April, and necessitating the slaughter of nearly 240 healthy animals, has been so quickly reduced to insignificant proportions."

Large Clip of Wool.—An exchange says Mr. Thos. Russell, of Raleigh, sold in the Chatham market, a few days ago, the fleece of eight sheep of the long wool Leicester breed, viz., 2 aged rams, 3 ewe lambs and 3 ram lambs, which weighed in the aggregate 100 lbs., or an average of 12½ lbs. each, the weight of the heaviest fleece being 13 lbs. 10 oz. The wool was bought by Mr. Randall at 35 cents in silver per lb., and weighed by him. The length of the wool was from 12 to 14 inches. This we consider the top sample of wool brought to our market, so far, this season, and, we think, can hardly be beat, but we should like to hear if any better there be. The stock was bought at a high price, from the celebrated breeder, Mr. Miller, of Markham.

Vegetable Silk.—The Department of State has received information from the United States Consul at Lambayeque, Peru, that an important discovery has recently been made in Peru, of the Silk Plant Preparations are being made to cultivate it upon an extensive scale. The shrub is three or four feet in height. The silk is inclosed in a pod, of which each plant gives a great number, and is declared to be superior in fineness and quality to the production of the silk worm. It is a wild perennial, the seed small and easily separated from the fibre. The stems of the plant produce a long and very brilliant fibre, superior in strength and beauty to the finest linen thread Small quantities have been woven in the rude manner of the Indians, and the texture and brilliancy is said to be unsurpassed.

New Meat and Poultry Market, Smithfield.—Old country men, especially those who are at all acquainted with the metropolis, will be interested to learn that a new meat and poultry market, on a very grand scale, is about to be erected on the site of old Smithfield. It is said that the contemplated improvement will cost the corporation nearly half a million, £250,000 having been paid for the land alone. The market is to be enclosed, and will be 635 feet long, 120 feet wide, and forty-five feet high, and there is to be a roadway fifty feet wide through it from north to south. It is thought the market will afford accommodation to 200 shops; and such will be the situations and depots of the several railways underneath, that by means of lifts the meat will be placed at the doors of the salesmen.

Crop Reports. R. W. S. sends the following communication respecting the state of crops in the neighborhood of Woodstock:—"Though Canada has innumberable advantages to offer, and her resources may be unbounded, yet, the extremes and sudden changes in the weather are a great drawback to the pleasure or profit of the farmer. It appears to me that the wholesale destruction of our forests has an influence in bringing about the unpleasant changes of the atmosphere, and that their entire removal would render the country barren and desolate. For two whole summers we scarcely had rain enough to lay the dust; then succeeded a year's rain; now we are again in the other extreme of drought. Rain was so incessant in the early part of the season, that crops were put in very badly, some seed was buried so deep with the horses' feet that it never came up, and some was sown and never harrowed sufficiently to cover it; notwithstanding, the early sown crops looked well, till now the dry weather is baking the soil, and turning the culms yellow at the roots; and unless it rains soon spring crops cannot be good, and the late sown will be useless. The hay crop is excellent, and the fall wheat (what little there is) is very tall and appears to be filling well. Roots are not very promising, but there is time yet, with frequent stirring of the soil, to bring them forward. Apples will not be as plentiful as once expected. Pears and plums will be a full crop. Currants and gooseberry bushes have been denuded of their leaves by the currant worm. The cheese crops will be most abundant in this neighborhood; whichever way we turn it is cheese, and whoever we meet talk nothing but cheese."

The Profits of Market Gardening.

On the above subject, we find many useful hints in a work briefly noticed in our last issue, and entitled, "Gardening for Profit." The first chapter describes the men fitted for the business of gardening. They must be such as can stand laborious out-door employment—active, working men; possessed of good sense, energy, and perseverance. Retired city merchants and men of business who get a place near town, hire a gardener, and expect to reap a large profit, reckon without their host, and usually find their gardens costly luxuries instead of paying investments. Many golden dreams of this kind are mercilessly dissipated every year. Personal attention, labour, superintendence, watchfulness, must be given, or such a business will be anything but profitable.

In regard to the amount of capital required to work a market garden effectively, the opinion is given that, for anything less than ten acres, $300 per acre is required. This will startle many. Judging by the small amount of capital per acre necessary to farm, there are many who make sad mistakes about gardening. Gardening is concentrated farming. If the space tilled be smaller, the culture is higher, and the amount of labour bestowed on a given quantity of land far greater. Not only does the work referred to maintain that $300 per acre is needed as capital, but it holds out the not very encouraging prospect that the first season will not more than pay current expenses, and cites many cases of failure arising out of the attempt to garden with insufficient means, and under the delusive idea that the first year's crop would be highly remunerative. The attempt to cultivate too much land with small means is a fruitful cause of disappointment and loss in gardening as in farming.

As to the working force per acre, a market garden of ten acres, within three miles of market, will, if planted in close crop, require on an average seven men. A less quantity of land will require more working force in proportion. For a small area, one man per acre will be needed. This labour estimate will take not a few by surprise. There are many persons who own about an acre of land, part shrubbery and part garden, who are dismayed to find, after a short trial, that it requires all the time of one man to take care of such a place. They complain that it does not pay; and certainly, if the money value of the products grown be all that is counted, it will not be easy to make it pay. A liberal allowance must be made for health, beauty, space for exercise, &c. These are worth much to a family, and cannot be obtained for nothing. A small garden that can be worked without hiring help, or a good-sized place on which the business of market gardening is carried on, and in the management and working of which the owner's own time and energy count,—these are profitable; while a piece of ground kept partly for the display of taste and the enjoyment of nice grounds, &c., will cost the proprietor more or less according to the pains taken with it.

Our author puts the average profits of well cultivated market gardens, in the vicinity of New York, at $300 per acre for the past fifteen years. This is for the products of open gardens only, not of frames or forcing pits. Competition is very keen in the New York market, and for this reason it is thought market gardening might pay better in smaller towns, and even villages. But if the competition be keen in a city like New York, the demand is great; there is no difficulty in working off large quantities of produce; whereas often, in smaller places, the market is so readily glutted, that any overplus of production is a dead loss. Moreover, in a city, people cannot have gardens, whereas in a town or village, on quite small plots of ground, families can grow enough for their own consumption of just such articles, perhaps, as yield the market gardener his best profits.

The moral of it all is, that market gardening is not a sure fortune, or an easily worked gold mine out of which wealth is certain to come, but a *business* requiring management, industry, and many qualities rarely possessed by those who enter on it. There is no royal road to success in this world, even among the pathways of a garden. Honest work, with mind or muscle, or both, is indispensable in every sphere, and he who expects to find anywhere a smooth, easy road to wealth, is under a great mistake.

Summer Meeting of the Upper Canada Fruit Growers' Association.

THE summer meeting of the Upper Canada Fruit Growers' Association was held on Thursday, the 27th June, in the Council Chamber of the Wentworth County Council, the chair being occupied by W. H. Mills, Esq., President.

After the minutes of the last meeting had been read and approved, the Secretary submitted a communication from the Secretary of the Board of Agriculture, requesting the association to nominate three judges in the class of fruit. In accordance with this request, the meeting appointed the following gentlemen for that office; Messrs. Beadle, of St. Catharines, Arnold, of Paris, and Smith, of Grimsby. The Secretary called the attention of the members of the Fruit Committee to the fact of their appointment, which had been made at the last meeting, and reminded them that they were expected to examine fruits during the season, in their own locality, and prepare a report thereon.

A communication was read from Mr. P. Smitton, of Campbellville, County of Halton, respecting his "Insect Destroyer." This subject was taken up at a subsequent stage of the proceedings; but as he had given the association no means of knowing what was the nature of his "Destroyer," nor of ascertaining its value, no recommendation could be made.

The special subject appointed for the consideration of the meeting was then discussed, namely, strawberries, and the merits of several varieties fully canvassed. Dr. Cross said he had cultivated some forty kinds of this fruit, and had retained only two—Wilson's and Hovey. On motion of Mr. Arnold, seconded by Mr. Smith, it was resolved that Burr's New Pine be struck off from the list for general cultivation. The following varieties were then separately noticed:

Wilson.—This was unanimously pronounced a most desirable sort for the Canadian market, and is everywhere deservedly esteemed as a valuable, productive, and good flavoured fruit.

Hovey.—Succeeds best in clay soils; but some thought it needed to be planted with other sorts for a fertilizer.

Hooker.—Mr. Arnold thought this a very desirable sort for an amateur, being fine flavoured and of good size, but that it was too soft for market. After the expression of various opinions, several of which were adverse, it was finally recommended for amateur culture.

Trollope's Victoria.—Mr. Arnold and Mr. Martin had found this variety a poor bearer, and tender plant. Dr. Cross considered that it possessed the advantage of yielding a good large berry, but had also found the plant tender and not very prolific. Mr. Woolverton thought it endured the drought better than most sorts. On the whole, this, like the preceding, was recommended for amateur culture.

Triomphe de Gand.—The majority of the gentlemen present esteemed this kind very highly for size of berry and flavour, and coming in rather later than others, when the season was passing away, it generally commanded a high price. Mr. Arnold, on the contrary, did not entertain a high opinion of it. By the verdict of the majority, however, it was retained on the list, and recommended for general cultivation.

La Constante.—This has the market advantage of being late, and was considered by Mr. Bruce, the only grower present who had anyexperience of the variety, to possess very fine flavour, but to be suitable only for the amateur.

Russel Prolific.—Mr. Arnold had been disappointed in this strawberry, which he had not found so prolific as he expected, and the fruit has the disadvantage of lying on the ground; the plant, moreover, he found rather tender. Dr. Cross condemned it on the additional score of ripening irregularly. Mr. Holton thought it should be further tested. Mr. Beadle said it required high culture, and to be planted with staminate sorts; but, after all, considered it no improvement on the Wilson.

Large Early Scarlet.—This was generally approved as an old productive berry, ripening very early, and good to plant with staminate sorts. Mr. Arnold had not found it to bear a good crop. The meeting decided that it be retained on the list as a fit kind for general cultivation.

Macavoy's Superior.—Mr. Holton thought this a very good flavoured kind, though the berries are apt to be imperfect; and, on the whole, he esteemed it much. Mr. Bruce, after some years' trial, considered it a very fair strawberry, and tolerably prolific. It was decided that it be retained for trial.

Welcome.—Mr. Graydon thought it very valuable, because early and large.

Jucunda.—A variety favourably reported by several of the gentlemen present, who considered that it promised well, appearing to be hardy, good-flavoured and prolific.

Agriculturist.—Was exhibited by Mr. Bruce, who, however, did not see that it was any advance on many others. Mr. Holton had seen it largely cultivated. Mr. Smith had not succeeded in getting well formed specimens, and feared it would need a fertilizer. Mr. Beadle had grown it last year, but did not esteem it any great acquisition. By a vote of the meeting, these last two varieties, as well as Metcalf early, were placed on the list for trial.

Duc de Malakoff.—Mr. Bruce thinks this kind worthy of cultivation by amateurs.

Austin.—The same gentleman considered this a large and rather insipid berry, and a shy bearer.

Smith's Seedling.—This was a new variety, shown by Mr. A. M. Smith, who has had it two years in bearing, and finds it a large berry, of good flavor, productive, hardy, and grows like the Wilson, but is softer.

Mead's Seedling.—Mr. Beadle had received this from Mr. Peter B. Mead, of the *Horticulturist*. It is shaped like the Peabody, and has a fine flavor.

On the general subject of strawberry culture, Mr. Arnold observed that he felt discouraged in regard to the successful cultivation of this fruit. He had found it greatly infested by an insect very much resembling the curculio, only one quarter the size, and furnished with a very long proboscis. It cuts off the berries before they are half grown, by puncturing the stem near the fruit. It has been very abundant for the last two years, and done great damage, lessening the crop five-sevenths. Mr. Martin had not found the crop attacked by any enemy besides a species of snail that eats the fruit of those varieties that bear their berries near the ground. Dr. Cross considered that drought was the most serious obstacle to which the culture of this fruit was exposed. Mr. Smith had observed a small black beetle, but otherwise had not found his plants infested by insects.

Mr. Martin considered that the plants are improved by high culture and a slight winter protection, with summer mulching. Dr. Cross said, in reply to enquiries respecting the richness of soil, that he had not yet found any soil too rich for strawberrirs. Mr. Beadle had tried the Wilson by giving them very high culture and very rich manuring, and the result had been an enormous crop of large berries. Mr. Smith thought that two full crops was all that could be profitably taken from one bed. He would keep the runners off from the Triomphe de Gand, but let them grow on the Wilson; as in this way each will be most productive. Old plants are more liable to winter kill than the new. Mr. Arnold had not succeeded well with the hill system; but Mr. Holton

said that the foreign varieties were generally more productive and more uniformly large, when grown in hills, than when the runners were allowed to remain on the plants.

Mr. Smith observed, that his experience was in favor of spring planting. Mr. Beadle corroborated Mr. Smith's remarks, and stated that there was more risk in fall planting than in spring planting, and no appreciable gain.

Some specimens of Flemish Beauty Pears, covered with a black-looking fungoid growth, were shown by Dr. Cross, and Mr. Mills was requested to make a microscopic examination of them.

Mr. Smith exhibited samples of the early Purple and Governor Wood Cherries. He had found both varieties hardy and productive.

Mr. James Taylor, of St. Catharines, sent up to the meeting four samples of wine of his own making, labelled "Sherry," "Isabella," "Diana," and "Mixed," the last being made from several varieties of grapes. Most of the gentlemen present gave their verdict in favor of the "Diana," first, and the "mixed," second.

Dr. Cross stated that he had been very successful in destroying the gooseberry worm, or saw fly, by putting a tablespoonful of powdered Hellebore in three gallons of water, and applying it to the bushes through a watering pot, by thrusting the rose of the pot into the centre of the plant, and letting the liquid run down the stem to the ground, where the worms, when young, seem to be collected. If neglected until the worms spread over the bushes, it will be necessary to sprinkle the entire plant. Mr. Mill's plan is to clear away all the suckers and underbrush from the currant bushes and gooseberries, and brush the underside of the branches and leaves with a stiff corn brush, which entirely removes the worms and enables him to kill them.

After these interesting discussions and statements of practical experience, the proceedings were brought to a close by passing a vote of thanks to the County Council of the County of Wentworth, for the free use of their Council Chamber.

The meeting then adjourned, to meet at Clair House, Cooksville, near Port Credit station, about the time of the vintage, the day to be named in the Secretary's notice.

Thinning out Fruit.

It may be considered somewhat early to make suggestions on the subject of thinning out fruit, but it can never be too early to give good advice, and we think that as pear and peach trees are beginning to show their products, the thinning out process may be begun at almost any time.

It is true the operation can be performed conveniently only upon such trees as are not over large. But it should be especially attended to in young trees, which frequently overbear, to the great injury of the health of the trees, as well as the quality of the fruit. To obtain the finest specimens of pears, they should not be allowed to grow in clusters or in contact with each other, and all that exhibit the least imperfection should be removed. What is lost in number will be doubly made up in size and flavour. This should be remembered. Many persons regard the thinning out of peaches, pears, and apples as so much loss; but they are not judges of fruit, and have no knowledge of its proper culture. They want as large a crop as possibe, letting the quality take care of itself, no matter how much the tree is damaged and what effect it may have on the following year's crop.

It goes hard with some people to diminish the quantity of fruit upon their trees. Sometimes they plead want of time; but this is not admissable, for if they have not time to attend to the proper cultivation of fruit they should abandon it altogether. The real cause is their greediness. You can't make them believe that they are the gainers by destroying a portion of the crop, saying that nature is the best judge as to the quantity of fruit. Such persons have no practical knowledge of fruit raising, and the sooner they give it up the better it will be for them, their pockets and reputation.—*Germantown Telegraph.*

Successful Strawberry Culture.

No one can now be sceptical in regard to the fitness of Canadian soil and climate for the cultivation of strawberries. Of late years especially, there has been a very manifest improvement in this department of horticulture, and we have all seen, both in public nurseries and in private gardens, a prolific growth of this excellent and wholesome fruit, and specimens that would have been creditable in any horticultural exhibition of the old country. We had an opportunity recently of seeing a beautiful dish of strawberries, which it would be difficult to surpass anywhere, and which forcibly reminded us of a similar display in England. These had been grown by Henry Browne, Esq., of Toronto, who informed us that the vines which produced them had been planted last fall. There were two sorts, Fleming's Seedling, and Trollope's Victoria, the specimens which we saw being remarkably fine, even sized, and well grown. We measured several, and found them five inches in circumference; and having the curiosity further to test them by the scales, found them to weigh three quarters of an ounce (troy weight) each. Mr. Browne stated that his method of procuring fresh plants is to place flower pots filled with prepared mould underneath the incipient sets, which, as they grow, send down their roots into the flower pots, and when required for transplanting, can be removed and put in their new bed with scarcely any disturbance to the roots, a most important consideration in successful planting: He prefers fall planting. But we believe the secret of his success is due mainly to the thorough manner in which his ground had been previously prepared by trenching to the depth of two feet; an operation by which a deep bed of finely pulverised, loose and moist earth is provided, in which the roots can freely spread and derive abundant nutriment. Everything in Mr. Browne's garden, which we had an opportunity of inspecting, displays the same luxuriant growth.

Since writing the above we have received from Mr. Leslie, of the Toronto Nurseries, some magnificent specimens of three varieties of strawberries, namely, Trollope's Victoria, Wilson's Albany, and Triomphe de Gand. These fully equalled in dimensions the samples already noticed, and many of the berries of the last named were over six inches in circumference; their figure, however, as all who know the sort are aware, is very different, being much flatter, and looking sometimes as if two had grown together. The fruit altogether made a splendid show, and was of excellent flavor, which, considering the recent long continued drought, so unfavorable for the full maturing of this berry, speaks well both for the skill of the cultivator and the capabilities of our climate. Mr. Leslie has our best thanks for his courtesy.

☞ A very good suggestion is made by Mohr in his new works on grapes, when he recommends that the handles of pruning knives and other implements used in the garden or orchard should be painted a bright red. This would save much trouble in looking for them if lost on the ground.

Flowers.—Of all the various mistakes which are made by persons in arranging flowers, the commonest is that of putting too many into a vase; and next to that is the mistake of putting too great a variety of colours into one bouquet. Every flower in a group should be clearly distinguishable and determinable, without pulling the nosegay to pieces; the calyx of a clove pink should never be hid by being plunged into the head of a white phlox, however well the two colours may look together. Sweet peas never look so well in the hand as they do on the boughs over which they climb, because they cannot be carried without crowding them; but put them lightly into a vase with an equal number of pieces of mignonette, or rather, ornament a vase half-full of mignonette with a few blooms of sweet peas, and you get a charming effect, because you follow the natural arrangement by avoiding crowding of the blooms, and putting them with the green foliage which they want, to set them off. Few people are aware, until they try it, how exceedingly easy it is to spoil such a pleasing combination as this; a piece of calceolaria, scarlet geranium, or blue salvia would ruin it effectually. Such decided colours as these require to be grouped in another vase, and should never be placed on the same table with the sweet peas; they also require a much larger preponderance of foliage to set them off to advantage than is wanted by flowers of more delicate colors. It is unquestionably difficult to resist the temptation of "just putting in" this or that flower, because it is such a beauty;" a beauty it may be, and so may be an apricot, but it would be out of place in a basin of green pea soup! There is at least one proper place for every flower; and let every flower be in its place.—*Gardener's Chronicle.*

Entomology.

Currant Worms Again.

We have received the following note from Mr. J H. Thomas, of Brooklin, unaccompanied, however, by the promised specimens:—"I send you specimens of the worm which I took to be the canker-worm, and which has existed in abundance in this section for two or three years. This year it commenced its depredations earlier than usual. Gooseberry and black currant bushes are completely stript of their foliage; many bushes have not a leaf left of their former glory, while upon their leafless limbs still lingers the destroyer, as if mourning that there was no more to devour."

Although we have not yet received the specimens referred to, we have now no doubt whatever that the destroyer of Mr. Thomas' currant bushes is none other than the caterpillar of the well-known *currant moth* (*Abraxas? ribearia*, Fitch), and is not a canker-worm. We have lately seen it feeding in numbers on *black* as well as red and white currant bushes, and also on the flowering currant; the last mentioned it attacked first, and completely stripped of its foliage, and then turned its attention to the fruit-bearing varieties, the black suffering the least. This is the first time that we have ever seen any insect eating the strong-smelling leaves of the black currant.

Abominable Negligence

In a late number of the *London Free Press* there appeared the following paragraph:—

"The Caterpillar Pest.—We learn that in the neighborhood of Port Talbot, and along the lake shore, the caterpillar is making great inroads, and devouring the foliage of fruit trees. In one instance an orchard of thirty acres, which promised a splendid crop, has been completely stripped. The insects have also attacked the forest, and the butternut and basswood trees have had their leaves devoured."

If ever a man deserved to lose the fruit of his orchard, and to be heavily fined in addition, we should say that it was the owner of that thirty acre orchard. "The caterpillar" that devoured the leaves of his apple trees must, in all probability, have been that well-known and most common pest, the Tent caterpillar, to which we have so often referred in these columns; for no other caterpillar commits such havoc as this in the early part of the season, though there are others that sometimes rival it towards the close of the summer. So much has been said and written about the Tent caterpillar, and so simple and well known are the remedies for it, that there is no excuse whatever for any man allowing his orchard to be devastated by it. It is not an insect that keeps out of sight, like the cut-worm for instance, but its "tents" are white and conspicuous, and are sure to catch the eye of the most casual observer. An occasional walk through the orchard would reveal, even to the most careless, any mischief that was being done by this insect; a neglect to remedy it can only be ascribed to intolerable laziness or abominable negligence. We do not pity the owner of this orchard in the least; for he richly deserves the loss of his fruit, and to be severely punished besides, for he has allowed tens of thousands, if not millions, of these destructive caterpillars to go on unmolested and complete their transformations, and thus ensure an infinitely greater horde of devastators next year, to ravage not only his own, but also his neighbors' trees This is the worst of it; if these insects confined themselves to the locality were they were brought up, one would not mind, for then the careless and indolent would alone be the sufferers; but these moths have wings, and soon spread themselves over a large tract of country, to be a plague and nuisance wherever they go. A man who quietly permits these insects

to mature on his trees deserves quite as much punishment as one who allows a field of Canada thistles to ripen their seed and scatter it to the four winds of heaven. If a fine of ten dollars is inflicted for the latter offence, it is surely high time that the Legislature imposed a similar one for the former. We should think that the owner of the orchard referred to above might really be indicted by his neighbours as a public nuisance. Just think *thirty acres of Caterpillars*; what myriads this implies! what a huge conglomeration of crawling repulsiveness and horrible devastation!

It is just possible that the insect referred to in the paragraph quoted above is the Canker worm and not the Tent-caterpillar. The former insect, though well known in the United States, we chronicled as occurring in Canada for the first time, in our issue of the 1st of May last. We then gave a full account of the insect, and illustrations of its different stages, and also a list of the most aproved remedies. Though this insect is a novelty in this country and its presence is not so apparent as that of the Tent-caterpillar, we yet cannot think that there is any excuse for allowing an orchard to be devastated, and the worms to grow to maturity.

The Household.

A Reply to Hints to Farmers' Daughters.

To the Editor of THE CANADA FARMER:

SIR: In your issue of June the first, I read a communication entitled "Hints to Farmers' Daughters;" and, as I consider it a misrepresentation of our farmers' daughters, I am induced to write a brief reply, so that the public may obtain both sides of the question. The writer of the "hints" says:—"Many of the daughters of wealthy farmers, after having been to boarding schools or colleges, would not marry a young farmer under any consideration; they look upon him as something uncouth and wanting refinement; they would marry, in preference, a third rate lawyer, doctor, or teacher, who possesses manners." Now, it strikes me very forcibly that, in the present day, women judge from what they see, (in that respect they are like the women of the past and future); and a young man who has not the taste to dress respectably, to clean his boots before appearing in the drawing-room, to observe the rules of society, and to acquire that *air* of refinement which proceeds from a sound mind well stored with useful knowledge, is not fit to be the companion of a woman of a cultivated mind. This standard is easily attained in this glorious Dominion of ours. *Every one* has the opportunity, the blessed privilege of mental and moral culture; and there is no excuse for every farmer's son not being a gentleman—a man fit to grace any Canadian circle. We have our public schools, our public libraries, institutes, literary associations for our youth in fact, every facility for placing them on a level with any respectable woman; but if they prefer "talking horse" by the hour, viewing their crops on Sunday afternoon, to helping along the young Sunday-school, or worshipping the God who made them, in company with their parents and *farmers' daughters*; or if on the week evening, when the young people assemble at the school-house for general interchange of thought on some subject, or for social singing, they prefer lying on the grass with their feet elevated on the pig-sty, listening to the music of the healthy grunters, to making themselves presentable so as to appear with the other youth; then they, by their wilful neglect, allow their fair associates to go beyond and above them in culture and attainments, and should not break out in murmurs against the whole bevy of farmers' daughters because they cannot be induced to marry any man simply because he happens to be a farmer's son. They in general prefer farmers, and a young man who has the ambition to use the advantages within his reach, will not find a successful rival in a struggling teacher, doctor, or lawyer. They would not prefer a man without means to one who could place them in a position similar to that in which they had been reared, were it not that they want a companion whose feelings and sympathies are in unison with their own.

Again, P. Q. says that perhaps "they play the piano." Then does not a farmer want music as well as another? Does not a good social song in the evening, after the work is all over, and the busy housewife needs a little recreation, and the family are all gathered in a social knot, bind them more closely together? One sings a good bass, perhaps another supplies alto or tenor, and father, mother, and all sing "Does not a good chorus like "Shout, shout, shout, ye loyal Britons," seem to kindle a thrill of patriotism, a love of the land they would die to protect, and a love of home which gives sweet recollections of our early years,

> "Where woman's voice flows forth in song,
> Or childhood's tale is told,
> Or lips move tunefully along
> Some glorious page of old."

Yes, if anybody wants music, it is the farmer. Weary in body after the days toil, he wants something to elevate the mind, to soothe and cheer him up; he wants a home joy. There are proper times for milking, churning, baking, &c., and if P. Q. would step into our farm houses he would see what a pride the girls took in the dairy, and who made most butter when it was their week; how nicely the cooking could be done, and who was the best at making up the prints of butter for the market. No fear of hysteries at the mention of housework; though P. Q. in his haste does injustice to *many* farmers' daughters because *a few* black sheep happen to get into the fold.

Again, P. Q. has heard many farmers' daughters say that they did not like the CANADA FARMER, because there was no light reading in it; but in the first sentence he wrote in the "Hints to Farmers' Daughters," he asserted that "very little appears in Canadian papers for the benefit of farmers' daughters, in preparing them for the sphere they *should* occupy, viz.,—that of farmers' wives." If this assertion is true, and I do not say it is, or not, are they not acting quite sensibly by only reading what is beneficial to them? But why make such a distinction between farmers' daughters and mechanics' daughters? I can see a great distinction between city and country girls, and I must say that city girls are unfit for the wives of farmers, on account of their ignorance of country work in general; but every country girl should know how to milk, spin, bake, &c. Farmers' daughters should be industrious, economical housekeepers, should understand all the etceteras of milk, butter, cheese, spinning, sewing, &c.; and so should every country girl, whether her father is a blacksmith, weaver, or whatever his calling may be. They can all get a suitable education to fit them for model farmers' wives, so that there will be an abundance of rosy girls to help the young farmer along, as well as choice for every *old bachelor* who lives in his lonely hall; or for any farmer who don't want a woman who can play the piano, but one who can only make cheese, talk cheese, and eat cheese. Then there will be fitting companions for those who, by their education, want a companion they can converse with who, while she makes the best of everything, can talk on the topics of the day, and has a mind that thirsts for knowledge. So cheer up, farmers; there are trimmings for every kind of cloth. Make yourselves worthy of the girls, and there is no danger of anybody rivalling you in winning that inestimable treasure, a good farmer's daughter.

JENNIE.

Parnassus Hill, June 18th, 1867.

Why Farmers' Daughters Despise Farm Life, and some of the Remedies.

To the Editor of THE CANADA FARMER:

SIR,—I purpose giving a few of the reasons which, in my opinion, induce farmers' daughters to despise farm life, and also some of the remedies. The evil in some cases may arise in this way. Their fathers may be wealthy, and may send them to boarding school or college before the elements of household economy or the charms and pleasures of farm life have been learned; thereby causing them to think that their parents are so wealthy that they themselves will never be in want. Consequently, they will not learn how work should be done after they have returned from school, and in time will despise it, or, perhaps, their mothers are vain, and will not allow the "dear creatures" to soil their hands, as they had to do when young, but will educate them to a life of idleness, flirtation, and gayety causing them to avoid everything which they deem drudgery; or again, perhaps their brothers despise farm life, and lead their sisters astray from the love of home and rural occupation, into gay and frivolous society. In other instances the error may be in an opposite direction. Their fathers, mothers and brothers, each, or all, may expect too much from their daughters and sisters, in household duties, urging them to work harder, to live more economically, &c., thereby causing them to have a dread of farm life, as being a life of incessant toil and drudgery, without any time for recreation or intellectual pursuits. Where none of these causes exist, the fault may be with the daughters themselves, who may have a natural dislike to farm life.

It is our duty to remedy this growing evil. Parents and brothers, I would say to you, love farm life yourselves if you wish to attach your daughters and sisters to it. Be cheerful, cleanly and obliging; for these qualities go far to make home happy. Brothers never be rude, but be always ready with a pleasant smile; help your sisters when any difficulties arise. Try and make the surroundings of your home attractive; for rural life loses half its charms when there are no out-door embellishments, no shrubbery, no flowers—nothing but the bare necessaries of the farm. Parents, give your daughters a good education, not only in music, drawing and other accomplishments, but also in branches more closely connected with their sphere in life. Take THE CANADA FARMER, of course; and if you can afford it, take one or two more agricultural papers. Speak of rural life as being most conducive to health, as well as good morals, and as the most congenial to reflection and study. Mothers, teach your daughters that fascinating and brilliant as many other positions appear to be outwardly, there is none which affords so much intrinsic satisfaction as that of the wife of a really intelligent proprietor of the soil; and above all, let your own example of contentment and cheerfulness recommend the lot you have chosen. In conclusion, if parents would spend a little more time and money on the *home education* of their daughters instead of sending them so much to boarding schools and were less anxious to hoard up "filthy lucre," to be given to them in after life, daughters would honour their parents far more than they do, would ever hold them dear in remembrance, and would grow up to be the solace and pride of parents, brothers, and friends.

P. Q.

BACHELOR'S HALL.

RATS.—A Connecticut man says his way of driving rats from his premises is to catch one, dip it in red paint, except the head, and let it go again.

PRESERVING FURS.—We find the following recipe for preserving furs in an *exchange*, and give it for the benefit of our lady readers:—"One ounce of gum camphor, and one ounce powdered shell of red pepper, are macerated in eight ounces of strong alcohol for several days, and then strained. With this tincture the furs and clothes are rolled up in sheets. This remedy is used in Russia under the name of 'Chinese Tincture for moths,' and is found very effective."

EASY MODE OF MAKING CURRANT JELLY.—Squeeze the juice out of the currants; strain and measure it. Put it in a copper or brass kettle, and boil it until the scum ceases to rise; then, without taking the juice off the fire, stir in one pound of well refined sugar to every pint of juice; and as soon as the sugar is fully dissolved, which will be in less than a minute, take it off and pour it into the vessels prepared to receive it. This jelly retains the beautiful crimson color of the currant, much better than by the old mode.—*Ex.*

THE PENDULUM SPINNING WHEEL.—A correspondent from the Province of Quebec sends us the following:—"In your paper of June 1st., 1865, there is a cut and description of an improved Spinning Wheel, called the 'Pendulum spinning wheel,' the operator on which is seated instead of standing and walking. I would like to enquire, through the medium of your valuable paper, if the wheel has come into general use in the Province of Ontario; and what are its excellencies and faults, if it has any? I do not wish for the testimony of interested parties, such as manufacturers or agents; but for the experience of farmers' wives or daughters in using it. If any such will take the trouble to write about it, or get their husbands or brothers to do so, they may thereby enlighten the community, and also much oblige

UN QUEBECOIS."

Miscellaneous.

Great Agricultural Fair.

BY JOSH BILLINGS, REPORTER.

AGRIKULTUR is the mother ov provisions; she is also the grandmother.

If it want for agrikultur, there wouldn't be enny beans, and if it want for enny beans, thar wouldn't be enny suckertash.

Agrikultur was fust diskovered by Cain, and has since been diskovered to be an honest way tew get a very hard livin.

Pumpkins owes awl her success tew agrikultur, and so duz lettis, and buckwheat.

The Billingsville agrikultural society opened Oct. ten, and was a powerful success.

The receipts ov the Agrikultural Fair was upwards ov $30,000 (if mi memory serves me rite, and i think she duz.)

The Hon. Virgil Bickerstaff, the next agrikultural member ov Congress from our district, sold the agrikultur poles.

FUST DAY.

A puss of ten dollars waz trotted for by sucking colts, that had never trotted before for money.

There waz thirteen entrys

Thar waz 60,000 people on the track to witness this race, (if mi memory serves me rite, and i think she duz.)

The puss waz won amid voracious exclamations, by a red colt, and the waving ov handkerchiefs, with a stripe in his face, and the fainting of several fust-class females, and one white foot behind.

SECKUND DAY.

It rained like a perpendikler awl day, and no trotting could be had, so the audience awl went hum, cussing and swearin, and offerin to bet four tew six on the Pete Tucker colt.

THURD DAY.

The sun histed up in the east more butyfuller than I ever saw her before, (if mi memory serves me rite, and i think she duz.)

It waz a fustrate day for agrikultur, or enny other man.

A puss of thirty dollars waz trotted for, by sum two-year old colts.

This race did not attract mutch affection, on account ov the time bein so slow. Time, two minits and thirty-eight seckonds.

FOURTH DAY.

This was for three or four years old, who hadn't never beat 2.45.

Thar waz twenty-six entrays; they couldn't awl trot to once, so they took turns.

This race was won after a bitter contest by Pete Tucker's colt.

He was immediately offered a thousand dollars and a fustrate farm wich was well stocked, for the colt by three different agrikultural men, but with a grate deal of indignant good sense, he skorned tew stoop so low.

Pete Tucker and his whole family are awl hoss.

FIFTH DAY.

It rained agin harder than ever, and the day waz spent in betting on the weight ov hosses.

Thar waz several good hoss-swaps also made.

One man swopped two hosses for one; this struck me as a bully good thing, but everybody else sed it waz soft.

At the end ov the fifth day i cum away.

I got so full ov hoss, that ever since when i laff i kant keep from whinnering.

The fare was kept up for ten days, and sum red hot time waz made.

I think two minits and ten seckonds waz made, (if mi memery serves me rite, and i think she duz.)

I forgot to say that there waz tew yoke ov oxens on the ground, besides several yokes of sheep, and a pile ov carrots, and sum worsted work, but they didn't seem tew attract enny sympathy.

The people hanker for pure agrikultural hoss-trots.

A WEATHER-GUIDE.—Two drachms of camphor, half-drachm of pure saltpetre, half-drachm of muriate of ammonia, and two ounces of proof spirits, in a glass tube or narrow phial, will make a pretty sure weather guide. In dry weather the solution will remain clear. On the approach of a change minute stars will rise up in the liquid; while stormy weather will be indicated by the disturbed condition of the chemical combination—*Mark Lane Express.*

A True Gentleman.

A GENTLEMAN is not merely a person acquainted with certain forms and etiquettes of life, easy and self-possessed in society, able to speak and act and move in the world without awkwardness, and free from habits which are vulgar and in bad taste. A gentleman is something much beyond this; that which lies at the root of all his ease and refinement, and tact and power of pleasing, is the same spirit which lies at the root of every Christian virtue. It is a thoughtful desire of doing in every instance to others as he would that others should do unto him. He is constantly thinking, not indeed how he may give pleasure to others for the mere sense of pleasing, but how he can show respect for others, how he may avoid hurting their feelings. When he is in society, he scrupulously ascertains the position and relation of all with whom he is brought into contact, that he may give to each his due honor, his proper position. He studies how he may avoid touching in conversation upon any subject which may needlessly hurt their feelings—how he may abstain from any allusion which may call up disagreeable or offensive associations. A gentleman never alludes to, never even appears conscious of, any personal defect, bodily deformity, inferiority of talent, of rank, of reputation, in the persons in whose society he is placed. He never assumes any superiority to himself—never ridicules, never sneers, never boasts, never makes a display of his own power or advantages—such as is implied in ridicule, sarcasm, or abuse—as he never indulges in habits or tricks or inclinations which may be offensive to others. He feels a mere member of society; that he has no right to trespass upon others, to wound or annoy them. And he feels as a Christian, that they are his brothers—that as his brothers they are children like himself, of God—members like himself, of Christ—heirs like himself, of the Kingdom of Heaven.—*Rural World.*

Skeleton Leaves.

MANY of our readers who have admired the exquisite structure displayed in the denuded skeletons of plants, may be glad to know how to make such preparations for themselves. The following method has been communicated to the Botanical Society of Edinburgh, by Dr. G. Dickson:—

A solution of caustic soda is made by dissolving three ounces of washing soda in two pints of boiling water, and adding one and a half ounces of quicklime previously slacked: boil for ten minutes, decant the clear solution and bring it to the boil. During ebullition add the leaves; boil briskly for some time, say an hour, occasionally adding hot water to supply the place of that lost by evaporation. Take out a leaf, put it into a vessel of water, and rub it between the fingers under the water. If the epidermis and the parenchyma separate easily, the rest of the leaves may be removed from the solution and treated in the same way: but if not, then the boiling must be continued some time longer. To bleach the skeletons, mix about a drachm of chloride of lime with a pint of water, adding sufficient acetic acid to liberate the chloride. Steep the leaves in this until they are whitened—about ten minutes—taking care not to let them stay in too long; otherwise they are apt to become brittle. Put them into clean water and float them out on pieces of paper. Lastly, remove them from the paper before they are quite dry, and place them in a book or botanical press.—*Scientific Press.*

☞ When we are alone we have our thoughts to watch; in our families, our tempers; and in society, our tongues.

☞ We often read of the "economy of health."—No doubt there is real economy in it, for sickness is expensive, especially if you call in a doctor.

☞ Dip the tips of nails in grease, and they will easily drive into any hard wood where otherwise they would double and break.

A FARMER'S ANVIL.—While in Dr. Guthrie's Office, in Bethel, the other day, we saw an anvil which it occurred to us would be a capital thing in any farmer's or mechanic's shop. It was nothing more than a section about seven inches in length of a T rail from a railroad. It is easily moved, and very convenient for a thousand little purposes. If a blacksmith would take an old rail and cut it up into anvils he might easily supply a neighborhood at a cheap rate.—*Maine Farmer.*

A WICKED WORLD.—The world is only wicked and weary to those who are sated with its delights, or who are incapable of appreciating them. The material world itself sets such an example of brightness and cheerfulness, that it is quite wonderful how anyone can imagine for a moment that weariness could possibly be one of its attributes. The year dies in the gloom and bitterness of winter, but the fresh and young beauties of nature revive again in the spring. Nature is perpetually renewing her charms and multiplying her gifts. If man could only renew his life in like manner, he might live for ever without weariness, and find the world—even this so-called wicked world—a paradise to all eternity. The sun is always shining, the flowers are always blooming, the birds are always singing, the golden grain is always waving somewhere in this wicked world.—*Andrew Halliday, Warne's Annual Fire Alls.*

GRIND THE TOOLS.—Keep the tools sharp or they will not cut. A dull tool wastes time, and he who permits it to work when in that condition, is a dull fellow. The best turners are those who have the sharpest tools; the most successful surgeons use the keenest knives, and the most enterprising and energetic men in civil life are those whose wits have been early ground sharp, and whose perceptive faculties have been whetted by sore experience in early life. A dull tool is a useless implement, and a thick headed, unobservant person is the only one who should be found wielding it. The obtuse edge neither cleaves nor separates, but bruises and works off by attrition particles of the substance on which it operates. Grind up the tools and sharpen the wit as well; if one is keen the other will in all probability be in a similar state, from force of sympathy alone. A boy with a dull pocket knife is one who swings on the gate and who dodges his duty; he is one who in after life will be a dunce and a cumberer of the ground; he will add nothing to the world of science, neither will he take from it; his existence is merely animal, his thoughts and ideas, if he has any, wholly conventional. His comrade with a keen blade, makes models of machinery, or boats or steamers, and in time he becomes a Geo. Steers, or so developes his mother wit as to be a decided acquisition to the community. Let us have all the tools in good condition, sharp, trenchant, and always ready for service; then, and then only will the result produced be equal to the time and labour expended.—*Scientific American.*

Poetry.

"Consider the Lilies of the Field."

UNIVERSITY PRIZE POEM, BY W. H. ELLIS, B. A.

O weary child of toil and care,
Trembling at every cloud that lowers,
Come and behold how passing fair
Thy God hath made the flowers.

From every hillside's sunny slope,
From every forest's leafy shade,
The flowers, sweet messengers of Hope
Bid thee "Be not afraid."

The Wind-flower blooms in yonder bower,
All heedless of to morrow's storm;
Nor trembles for the coming shower
The Lily's stately form.

No busy shuttle plied to deck
With sunset tints the blushing Rose;
And little does the Harebell reck
Of toil and all its woes.

The Water-Lily, pure and white,
Floats idle on the summer stream—
Seeming almost too fair and bright
For aught but poet's dream.

The gorgeous Tulip, though arrayed
In gold and gems, knows naught of care;
The Violet in the mossy glade,
Of labour hath no share.

They toil not—yet the Lily's dyes
Phœnician fabrics far surpass,
Nor India's rarest gem outvies
The little Blue-eyed Grass.

For God's own hand hath clothed the flowers
With fairy form and rainbow hue,
Hath nurtured them with summer showers,
And watered them with dew.

To day, a thousand blossoms fair,
From sunny slope or sheltered glade,
With grateful incense fill the air—
To-morrow they shall fade.

But thou shalt live when sinks in night
Yon glorious sun, and shalt not He
Who hath the flowers so richly dight,
Much rather care for thee?

O faithless murmurer! thou mayest read
A lesson in the lowly sod;
Heaven will supply thine every need:
Fear not, but trust in God.

Markets.

Toronto Markets.

"Canada Farmer" Office, July 12th, 1867.

The weather during the past week has been cool and pleasant, with occasional showers of rain, which have been of much benefit to the growing crops.

The produce markets during the week have been unusually dull. Very little flour or wheat was offering, and there was no desire to buy. In the almost total absence of transactions, prices are, for the most part, entirely nominal.

Flour.—The market has been very quiet, and not a single sale has been reported during the week. To-day, No. 1 superfine could not be bought for less than $7 50. In other grades there was nothing doing, and prices are entirely nominal.

Wheat.—The market during the week has been very dull, and both buyers and sellers showed very little disposition to operate. The best samples are held at from $1 60 to $1 65, at which prices holders are firm. In fall wheat there was very little doing. To-day a car-load sold at $1 60, which is the only sale reported during the week. On the street market the receipts have been almost nothing. Prices are nominal.

Oats—have been in better demand, and are held at higher figures. The following are the sales of the week:—1 car at 45c; 1,000 bushels at 47c; 1 car at 44c, and 2 cars at 46c. Dealers are now holding at 50c.

Rye—The market has been very quiet during the week, with a little better enquiry both yesterday and to-day. Stocks are light and very few lots are offering. Car lots could be bought at from 65c to 68c. On the street market the receipts were trifling, and prices ranged from 60c to 60c.

Barley—Transactions during the week have been confined to the street market. Quotations for car lots entirely nominal. On the street market prices ranged from 50c to 60c, with very little coming in.

Potatoes—Receipts considerable. Prices on the street market unchanged, viz., from 25c to 40c.

Wool—The market during the week has remained steady at from 25c to 27c for the best samples washed, and 24c to 25c for inferior. The receipts have been, light with little competition amongst dealers. To-day, 28c was paid for a few lots; but in the majority of cases the price paid was only 27c, unwashed wool will bring only one-third of the above prices.

Hay and Straw—Have advanced; the former sold during the week at $9 to $14, and straw at from $5 to $5 50.

Provisions.—The market has shared in the general dulness of the week, only a retail trade has been done in most articles. Mess Pork is dull and unchanged; held at $18 50, Prime Mess also very dull, held at $15. Cut meats are very dull, with no sales of consequence. Country dried meats are in large supply and difficult to sell. Hams, smoked, are nominally 11c; canvassed 12½c. Cumberland bacon, in salt, 8c, spiced and rolled, 11c. Butter is in rather better request for speculation only. Choice yellow sells at from 11c to 12½c. English advices, to-day, do not warrant an advance. Rolls, on the street market, sell at from 12c to 14c. Eggs have been in light receipt, with fair enquiry for city consumption. The wholesale price is unchanged, held at 9c; retail price, 10c to 11c. Lard.—nothing doing; held at from 9c to 10c. Cheese, unchanged, at from 11c to 13c.

Hides and Skins—Green butchers' hides buying at 7½c. Green calf skins, 12½c to 15c. Wool skins, $1 60 to $2. Murrain hides, 5½c to 6c. No. 1 inspected hides selling at 8½c; No 2 inspected at from 7½c to 7¾c.

Freights—Unchanged. Flour to Montreal 20c, to Ogdensburg, 20c. U. S. currency; to Prescott, 15c, to Kingston, 12½c. Grain to Montreal, 7c per 60 lbs.

The Cattle Market.—Grass-fed cattle continue to offer freely and prices have rather a downward tendency. The following are the current quotations:—1st class, grass fed, $7 75 to $8, 2nd class, $7 to $7 50. Inferior, $6 50 to $7. *Sheep.*—Prices are tending downwards: 1st class, $4 50 to $5 each, 2nd class, $3 50 to $4 each, 3rd class, $3 each. *Calves.*—Only a few offering. There being no demand for Veal, Calves are neglected; 1st class, $6 to $7. 2nd Class, $4 to $5; 3rd class, $3 to $3 50.

London Markets.—*Fall wheat* per bushel, $1 to $1 20 for inferior; $1 40 to $1 55 for extra. *Spring wheat*, $1 to $1 40. *Barley*, 40c. *Peas*, 45c to 50c.

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