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Vol. IV. No. 17.

TORONTO, CANADA, SEPTEMBER 2, 1867.

POSTAGE FREE.

The Field.

Lewis's Patent Gates.

THE plans of gates we herewith present to our readers are from Mr. Richard Lewis, of Melbourne, Province of Quebec.

Mr. Lewis has devoted special attention to the construction of gates, has had considerable experience, and met with encouraging success in obtaining prizes at agricultural exhibitions, and in securing a large share of public patronage.

The two sketches of gates shown in the adjoining column are only a sample of a photographic view of a group of gates which is now before us, all of which have originated with Mr. Lewis. Among the group we notice the ornamental or gothic gate, as exhibited at the Provincial Exhibition held in Montreal in 1863. There is also the turned picket gate, and a batten gate—both of which are double (sliding) gates. The former makes a very neat frontage gate, especially when there is a like fence to match.

These gates were exhibited at Hamilton in 1861, where they competed with a self-opening and self-closing gate; but the premiums, both first and second, were awarded to Lewis's gates. At the Provincial Exhibition held in Montreal in 1865, double premiums were awarded on account of their adaptation to the country.

Then there is the incline-slide gate, which is particularly adapted for dangerous places, or where a railroad passes in close proximity to a dwelling, as it cannot be left open by children or careless persons. It is adapted to pastures in common, as it cannot be left open by negligence.

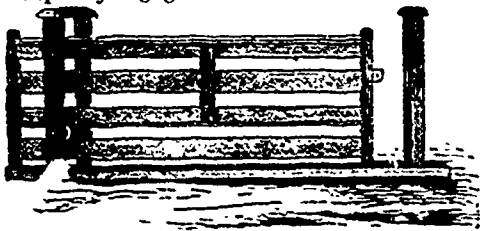


FIG. 2.

All Mr. Lewis's gates are made to be raised up in the winter to clear the snow, which proviso is covered by his patent in 1862.

But the gate to which special reference is now made, is the economical gate (fig 2), patented the 10th of July, 1867.

This mode of hanging a gate is, of all others, according to Mr. Lewis's experience, the best for a farm-gate, inasmuch as it is easily effected, cannot

get out of repair, is much cheaper than any other, and is, therefore, decidedly the most economical arrangement for a farm-gate: not only does it commend itself to the farmer, but to every one requiring a gate to work in a small space, as it can be made to work in a space that no other gate can, it will slide its whole length laterally, will turn on the centre as a swivel gate, and then slide its whole length crosswise, at a cost for hangings of not more than ten or fifteen cents.

The following are Mr. Lewis's description and directions:—

Fig. 1. represents the general plan of a double gate, showing the frames (between which the gate

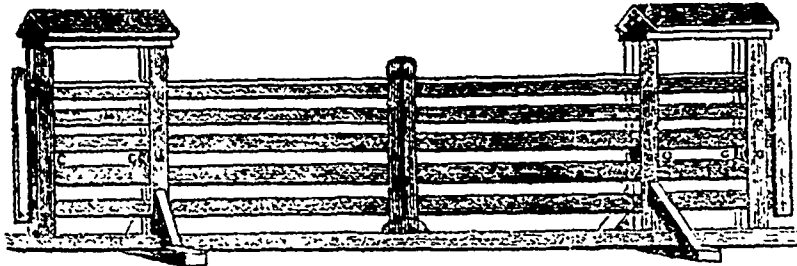


FIG. 1.

slides); the ground sill into which the posts are set; the rollers on which the gate is hung, at *cc*; the extra holes above to receive the pins of the rollers so as to raise the gate in the winter; the two cross pieces under the sill to which the diagonal braces are attached, the cross pieces being first well secured to the sill. The cut also shows a batten, one inch thick and three inches wide, nailed flatwise on the top rail, and one of a similar description nailed to the lower edge of the third rail immediately over the rollers; these battens stiffen the gate, and serve as guides between the frames. There should be half-an-inch play between the frames and gate, so that the gate may pass through easily. The rollers are turned about a quarter of an inch, rounding on the face, so that the bearing of the gate on the roller may be in the centre of the batten. The rollers should also be turned convex or rounding at the ends, so as to prevent friction between the posts.

The dimensions recommended are, for the ground sill, 4x10; upright posts or frames, 2½x5; posts to be dovetailed through the sill; tenons, two inches thick, and to be the whole width of the posts, the tenons to be dovetailed half-an-inch, and set up with a hardwood key at the back of the post, so that the hook of each dovetail may be toward the centre of the gate. This method of fitting the posts or frames is calculated to resist the strain when the gate is wide open. The battens of the gate are five inches wide and one inch thick; the openings are about five inches wide; the rollers three and a quarter inches long and five in diameter. The pins may be of wood or iron—the latter is preferable; five-eighth iron may be

used—and they should be greased occasionally. The top covering or finishing should correspond with the style of the gate.

A picket gate will admit of a more ornamental finish. Pickets should be about one and a quarter inch diameter. They can be made very readily with a mooting tool. The hanging frames and rollers are the same as those described above. Picket gates and picket fences, as represented in Lewis's group of gates, to which we have already referred, are becoming general around or in front of most respectable residences, especially in the vicinity of Richmond and Melbourne, in the Province of Quebec.

The economical farm-gate, as described by Fig. 2, is of the most simple description. It is made of four battens, one inch by six, and hung between two posts which are placed in a particular position. See Fig. 3.

The economical farm-gate is especially recommended by the maker as both cheap and useful. It works on a roller between two posts, the relative position of which together with the shape of the roller, is more definitely set forth in Fig. 3, where it will be seen that the posts are separated from each other about four inches both lengthwise and crosswise. The roller on which the gate hangs being placed between the posts in an angular direction, an iron or wood pin passes through the posts and roller in the direction shown. The posts are keyed into the mortice, as shown by the white line across the mortice. If, however, the posts are to be let into the ground, the lower ends should be fastened together like the upper ends.

Mr. Lewis's advertisement and address will be seen by a reference to the advertising columns. If, as we understand, it is his intention to be again an exhibitor at the Provincial Exhibition, farmers who visit Kingston on the occasion, will have a better oppor-

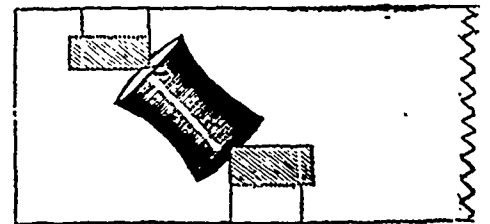


FIG. 3.

tunity of judging of the merits of the contrivance than we can give by any mere description. Mr. Lewis proposes to make a tour of this Province, for the purpose of introducing the invention to the notice of the people of Ontario. This matter of gates, is one of no small importance; and the inventor of a cheap, durable, simple, and really efficient gate, confers a valuable boon especially on the agricultural community.

Fall Wheat Culture.

OWING to the difficulties attendant on its cultivation of late years, the farmers of Canada have come to raise but a very limited breadth of fall wheat. The difficulties referred to may be classed under three heads; poverty of soil; winter-killing; and insect ravages. Two of these difficulties, at least, are self-caused, and the third is not beyond human control. Over-cropping with wheat, conjoined with neglect of manure and disregard of the law of rotation, have impoverished soils that were once rich in wheat-producing elements, and might be so still and continue so for ever. Winter-killing is largely, if not wholly, the result of the unsheltered condition of our fields, arising from the wholesale destruction of the forest. In the newer sections of the country, where the land is but partially cleared, fall wheat is grown as successfully as it used to be in what are now the old townships. Had belts of timber been left in clearing off the land, and proper protection thereby secured, this evil would never have come to afflict us to the extent it now does. The planting of live screens and the selection of partly sheltered fields, next the woods, for this crop, are the expedients that must be resorted to under existing circumstances. Nearly every farm has its remaining piece of woods, under lee of which more or less fall wheat may be grown with success.

Even the insect pests that have of late preyed upon this crop, are not to be ranked among inevitable and incurable ills. By means of drainage the crop may be brought on earlier, so as to escape the midge. Various other devices have been resorted to in mitigation of this annoyance; among the rest, the cultivation of a species of wheat that can defy the foe. But the effectual means of deliverance is yet to be applied. Like the Hessian fly, the midge must be extirpated by those other insects, of which, we believe, there are no fewer than three sorts, that prey upon it, and so prevent its multiplication. We have the bane, but as yet the antidote has not made its appearance. It may, for aught we know, be at work, or at any rate quickly multiplying, so as before long to render us good service in subduing this enemy of our wheat crops. We might, no doubt, import the parasites of the midge, and a Government appropriation to employ some good entomologist to do this for us, would be one of the wisest outlays of public money that could be made. In all probability a thousand dollars thus expended would be sufficient for the purpose,—a trifling sum, indeed, as compared with the millions the midge has cost us. The introduction of new varieties of seed wheat deserves encouragement, if only by way of experiment. Heretofore great advantage has resulted from this, and what has happened once may happen again. Especially is it desirable that any new kinds found to be valuable in England should have a trial here. As one argument in favor of this, we may urge the probability of thus accidentally importing the insects whose operations hold the midge in check. Our seed-men have now direct and ready business connection and communication with British seed merchants, and if they would obtain for us, from time to time, the best samples of seed wheat to be had, they would render an important service to the farming community.

We ought not, without making every effort to prevent so dire a calamity, to allow this important crop to sink into disuse. Canadian fall wheat has had a high reputation abroad, and a feeling of national as well as agricultural pride should impel us as far as possible to maintain that reputation permanently. We hope our farmers will persevere in the judicious culture of the grain in question. The difficulties at present in the way are not such as to justify the abandonment of so important a crop, though they loudly call for a resort to every appliance within the scope of scientific and practical farming that may promise an effectual remedy.

On the Proper Treatment of Barn-yard Manure.

Mr. McLellan's views on the proper treatment of barn-yard manure were the subject of the concluding portion of his Brampton lecture, the greater part of which has already appeared in the two preceding numbers of THE CANADA FARMER. The substance of his remarks was as follows:—

With regard to the proper treatment of barn-yard manure and the best mode of applying it there exists considerable diversity of opinion, both amongst practical farmers and other agricultural authorities. The greater number contend that it should be well rotted in the barn-yard; and that it should be turned over once or twice for the purpose of accelerating this process, before being applied to the soil. Others believe that it is better to apply it in a recent, unrotted condition. The latter was, in the opinion of the lecturer, the proper course. It should be drawn out and applied direct to the soil, in the condition in which it is generally found in the barn-yard in spring. Even if it is dry straw, it should be ploughed under in that state, without any piling, turning, or fermenting. All will agree that by such a course a great deal of time and hard labour will be saved; for it is no trifling matter to handle in the usual method the large accumulation of manure that is contained in many barn-yards in the spring. Yet many will be disposed to question the propriety of avoiding the trouble and applying it in its crude state to the land, and will scarcely be convinced that its beneficial effects and its fertilizing influences on the soil are greater, when thus applied, than if previously piled, turned, and rotted, perhaps even firefanged in the barn-yard. In fact, however, the farmer who spends time in turning his manure is not only working for nothing, but paying a large amount for the liberty of so doing, in the shape of valuable matter which will be evolved from the fermenting heap, escape and be lost to him altogether.

What is the object the farmer has in view by piling and heating his manure? Doubtless his object is to improve its quality. But if you ask him how it has been improved, he cannot tell anything more than just that it has been heated and is better rotted. But to follow up the enquiry more closely, can any one say in what manner this process of rotting has improved the quality of manure? Is there one single element of nutrition added or supplied thereby? Reason, common sense and chemical science, alike decide in the negative, and show indeed that a large amount of valuable fertilizing ingredients has been abstracted by the common practice. A considerable proportion of the saline and volatile constituents of the mass has been dissipated by washing out or evaporation. For when manure is turned it is loosened, so that air penetrates it; and by the combined action of air and moisture decomposition is effected. Without both air and moisture there would be no decomposition. For this reason manure will not rot if left lying in the yard as it was trodden down by the cattle. It is pressed so tightly together that air cannot penetrate. Water alone will not cause decomposition, but will even, by excluding air, act as a preservative. Hence lumber and timber are often immersed in water for better preservation. Saw logs are thrown into mill dams, and are thus preserved from decay by the water, as it excludes the air. Again, the most delicate kind of timber will retain its soundness for a hundred years, if exposed to the air and kept perfectly dry. Moisture and air, acting simultaneously and jointly, are essential to the process of decomposition. Now, when manure is turned, it is exposed to the action of both these agents, and therefore decomposes. When decomposition or fermentation takes place in vegetable matter, either carbonic acid or ammonia, or both, are produced or evolved. In the fermentation, therefore, of a manure heap these important chemical agents are dissipated and

escape into the air, and are lost. The manure through the loss of these fertilizing materials, must necessarily become less valuable—less rich in ammonia, so important as a direct food for plants, and in carbonic acid, which is, as already explained, so beneficial on account of its solvent properties. Then, again, a large amount of saline matter is dissipated by being carried off in solution. The heavy rains, falling upon the heap, penetrate, by reason of its looseness, through all parts, leach it and wash out its saline matters, carrying them into the first ditch, thence to the rill, and afterwards into the river, where they are finally lost entirely to the land which they ought to have enriched.

Now, if instead of treating the manure in this way, the farmer were to apply it to his fields in its rough or unrotted state, plough it in, and allow it to decompose in the soil, which it will do, he would save all those elements which he otherwise loses; for when it decomposes in the ground these elements cannot escape, on account of the affinity of the soil for them. They would then furnish direct nutriment, would benefit the land by their solvent powers, and would, moreover, assist to break up and pulverize stiff clay and other soils.

Admitting the principle that this direct application of green manure is the proper course, the next point to consider is the best method and time of applying it. Taking all things into consideration—the scarcity of labour, the shortness of the summer, and the general hurry of that season, Mr. McLellan was of opinion that the best time to draw out and apply manure was during the winter, usually a slack time, and while there was yet snow enough on the ground to admit the use of sleighs. The manure should then be spread right on the field. If it leaches, it is just where it is wanted. A scorching sun will not injure it—will not take anything from it. Drought preserves it, by withholding or dissipating the moisture which is one essential agent of decomposition. In proof of the principle may be instanced the preservation of guano, which stands the scorching rays of a Peruvian sun for centuries without being impaired in fertilizing quality.

These views, which till recently it would have been the rankest heresy to avow, are now slowly gaining ground. Among those who hold them may be reckoned some of the most eminent men of science, and not a few of large practical experience. It may not be long before they become generally established, and cease to be matter of dispute.

Value of Bones.

THE following, from the pen of S. Edwards Todd, agricultural editor of the New York Times, carries a "big hint" to the mind of every agriculturist in the country. If it will pay to collect bones for transportation—and we consider them a commercial article of much value—from a country where all labour and material is as high as it is in the United States at present, or export them some thousands of miles to countries where all labour and products are far cheaper than where these same refuse fragments are gathered, then it certainly will pay to employ them at home; and if once used, we feel assured that their value will soon be known. It is certainly time that some attention should be called to this subject in all parts of the country. Exceptions there are in many places where the value of bones is well known, but this value ought to be more generally and universally appreciated:—

"If there is any one practice among American farmers for which they deserve sharp rebuke, it is for permitting such immense quantities of bones to be exported for the improvement of the agriculture of foreign nations. Thousands of tons of bones are collected annually in Chicago, Buffalo, New York, and other populous cities, and shipped to European countries to fertilize the land for raising turnips, wheat, fat cattle, and sheep. And yet American farmers in stupid quietude look on and say, "It don't pay to collect bones and apply them to the soil."

"It will pay. They have not tested the application of ground bone. There is not a meadow nor a pasture in the land—with very few exceptions—that will not be greatly benefited by a dressing of ground raw bone. Thousands of acres of the best farming land in New England are in a low state of impoverishment for the want of a liberal dressing of ground raw bone. Such fertilizing matter is the very life of the soil. European farmers understand and appreciate this fact. They know it pays to ship bones from America to enrich their farms. Every shipload of bones that is picked from our land injures the agriculture of our country. England delights in the excellence of

choice cheese of American dairies, while we mutter and grumble over a pot of the whey. Europeans rejoice over the rich, sweet American butter, while we are so unaccountably stupid as to be satisfied with the buttermilk. Our farmers dig, and delve, and raze, and serape their grain-fields, meadows and pastures, to get phosphatic fertilizers to send to Europe to produce big crops of turnips; and then grumble and denounce their own land as good for nothing, because their turnips refuse to grow as they do in Eastern countries.

"The truth on this point is, American farmers must save and apply more manure to their impoverished land; especially must they save bones for growing a crop of turnips. As soon as we can produce a bountiful crop of turnips on a wheat soil, we can grow wheat. Wheat and turnips in England go hand in hand.

"There is a volume of truth in the old maxim:

No bonedust, no turnips, no turnips, no wheat,
No wheat and no turnips, no cattle, no meat,
No turnips, no cattle, nor manure in the yard,
Make bids for the doctors, and tanning go hard.

—American Artizan.

What is Economy?

This is a subject which is now all the rage among our farmers, and it is amusing to see how well some of them understand it. Their economy and economizing is like that of the man who seeing that his cider barrel was leaking at the spile, turned it over to tighten it, but did not notice that the bung-hole was open and under.

Let me draw you a picture of some of our farmers who are economizing (and there are by far too many such.) He cannot apply any lime this year, because he must economize and can't afford it; or, in other words, cannot afford to spend one dollar now that it may produce ten in a year or two.

He cannot afford to hire a man, and so his corn goes unworked and the crop is materially shortened, his ground is only half ploughed, because he has not time to do it well himself, and thereby loses several dollars to save one.

He does not place his manure under shelter in the spring, because he cannot afford to hire a man to do it, and has not time to do it himself; and yet will tell you if asked that one load of sheltered manure is worth two of that not so taken care of.

He discontinues tacking (if he ever did such a thing) an agricultural paper, and thus places his finger in the spile and leaves the bung-hole wide open, with a vengeance.

He cannot afford to buy plaster for his clover and corn, although he knows that it will do much to increase his crop; whereas if he were to apply plaster to his grass, he would double or treble his money in a very short time, and the surplus might go toward hiring a hand.

The fact is that he began his economy and economizing at the wrong end. He breaks up more ground, and spreads the same amount of manure—and less labor—over a larger surface, and lies under the impression that he is thereby obtaining larger crops, whereas, if he would cultivate no more ground than he has manure and labor for, he would be the richer for it.

The mainspring of economy in agriculture is increasing the amount of manures; this is the very item which our economizing farmer omits. Everything which will make manure should be thrown into the barn-yard or pig-pen; the size of the compost heap should be increased; but have all the help you need, for that is or should be the last thing to decrease on the score of economy.

There are hundreds of ways in which farmers may economize if they will, and only go at it in the proper manner. If I were going to adopt a more rigid system of economy, I should hire an additional hand, and make him pay his own and his fellow's wages, even if he did nothing else but collect materials for manure. Our farmers are only just beginning to understand the meaning of these two words, Economy and Economizing.—*Cor. Germanstown Telegraph.*

Coal-Ashes as Fertilizers.

It is generally conceded that the ashes of anthracite coal are of but little use as fertilizers. In the cultivation of field-crops or grain they possess no value. In grass-lands a dressing of pulverized or fine ashes, early in the spring, has been of some effect; but the results are not very striking. A writer in the *New York Tribune* recommends the best use for them in making walks.

"An excellent walk can be made of sand or gravel rounded up and covered with coal-ashes. If no gravel is at hand, use the ashes alone, putting them on thick. The walk should always be rounded to turn water, and be higher than the ground alongside. Make such

a walk before winter sets in, and see if the comfort, health, and satisfaction of always having dry feet, to say nothing of having mud kept out of the house, does not much more than compensate for the labour, even in a single season. We have seen the sidewalks of unflagged villages kept in a very respectable condition by each person spreading ashes along his front."

Mr. L. W. O. Beam, of Croxton, Ohio, sent a letter to the Farmers' Club, American Institute, in June, 1865, giving a note of his small experience in the use of coal-ashes.

"In the spring of 1862 I ploughed up an old meadow, somewhat of a clay soil; afterward hauled out and spread on a part of it coal-ashes; planted it in corn, and found that where I used the coal ashes I had at least double amount of corn. In 1863 had the same result in wheat. In 1864 I cut a crop of clover off it in June, and still it doubled; but in the fall of 1861, which was very wet, the difference was most marked. I have no hesitation in saying that I had five-fold on that part—as it was lodged on that—while on the other, not five feet distant, there was scarcely anything, it being dry after the first crop was cut. The same result was perceptible where coal-ashes had been applied some years previous."

The same subject came up before the Farmers' Club at another time, and the following opinions were expressed:

Mr. John G. Bergen: "Some years ago I remember my father used to put coal-ashes on wheat in early spring. He supposed there was some virtue in them. I also saw a field which produced a great growth of oats after being heavily dressed with coal-ashes; but I have tried the same thing, and found no benefit."

Dr. Trimble said: "I use coal-ashes for garden-walks, and they appear to prevent rather than promote the growth of vegetation."

An analysis of coal-ashes showed this result: Silica .53, Alumina .36, Sesquioxide of Iron .5; Magnesia .1, Lime 2.8-10, and other minor proportions made up 100.

Solon Robinson said: "Here were ninety-four hundredths not worth carting across the street. As top-dressing, they might probably be of some benefit to grass-land; they would answer a good purpose as much about plants or trees, and it is of some value as a deodorizer in outhouses."

SEEDING TO GRASS ALONE.—I have found, from experience and observation, that when ground is laid down to grass, and the seed sown alone, the best and most surely successful time is early fall—say first of September. The ground is then in a much better condition, if it has been occupied with a tilled crop; if not, it can be much better prepared, to give the seed an opportunity to catch and grow, than it can possibly be made, in season, for sowing in spring. When sown in September, a handsome mat or turf is formed before winter sets in and the young grass gets well established, and attains such a growth as to afford protection for the young roots. If the seeding is liberal, such is the effect; otherwise, less advantage is derived from fall seeding. Here soil and circumstances must govern: for on a soil that the frost loosens very much, the young roots do not get so firmly established that they are not apt to be thrown out, and many winter-killed. In such soils, spring seeding with some light grain crop is the safer course.—*Country Gentleman.*

HAY GETTING WET.—Dr. Voelcker, in a recent paper on hay making, states that rain may fall for days on newly cut grass without injury to it, provided the grass is left untouched; but that when it has been repeatedly turned, causing the crop to become more or less bruised, rain washes out the sugar, gum and other soluble matters, and causes fermentation, which leads to further loss. For this reason, says the *Scottish Farmer*, recently cut grass should not be turned in showery weather, more than is absolutely necessary, and in all circumstances the crop should be handled as lightly as possible, so as to avoid bruising the plants:

"In order to subject the value of hay which had been damaged in the field by rain to a practical test, some experiments were tried in feeding sheep with clover hay made in wet weather, and which had lain long on the ground before it was carted and stacked. Experiments made by Messrs. Lawes and Gilbert had shown that sheep fed on well-made hay alone increased in weight, but in the course of Dr. Voelcker's experiments with bad hay—the experiments being continued for more than three months—the animals lost weight. The results show the folly of supplying animals with bad hay alone; and also that bad hay can be deteriorated by rain, long keeping, and frequent turnings in the field, to such an extent that any amount which sheep will consume is barely sufficient to maintain their original weight, while with ordinary allowances, such as 1½ lbs or 2 lbs. per day, the loss of weight is considerable."

Veterinary Department.

"Scratches" in Horses.

This disease, called also "grease" in England and in some parts of this country, often attacks the heels and legs of neglected horses, and though easily prevented, is difficult to cure, if of long standing. It commences with inflammation of the oil glands of the skin about the hind feet. These vessels, named sebaceous glands, supply a fluid to soften the skin and prevent its cracking. These glands are especially needed and very active about the hind feet of the horse, where, by frequent exercise of the parts, the skin is subject to almost constant alternate wrinkling and expansion. The toughest leather would soon yield under such treatment, unless kept well softened by oiling. The oil glands may become inflamed by sudden cold, as when a horse after exercise over wet roads is allowed to stand in the stable without cleaning and drying the hair about the feet. The animal being warm, moisture rapidly evaporates and carries with it the heat from the neighboring parts; congestion ensues, and inflammation commences. It may be slight at first, but by neglect it will be likely to extend and affect the surrounding surface, and also the deeper seated structures, resulting in a disorder disgusting in its appearance, and painful to the horse. Or it may be caused by standing on a filthy stable floor in wet straw and excrements, the moisture from which not only produces cold, but from its nature irritates the skin, thereby inducing the disease.

As it progresses, the hair drops off, the heels swell, the skin assumes a glazed appearance, is covered with pustules, and emits an unctuous discharge which soon becomes very offensive. Unless properly treated, the leg half-way to the hock is encrusted over with thick, horny scabs, divided by deep cracks, when the affection is scarcely curable. Prevention is found in clean stables, and in thorough drying and rubbing of the legs after the horse has been used. Close clipping of the hair which ordinarily grows long about the legs, deprives these parts of their natural protection, rendering them more liable to the scratches, and is therefore objectionable.

If the disease unfortunately appears, Herbet recommends to clip off all the hair from the affected parts, and thoroughly cleanse them with warm water and Castile soap. Then apply a flannel bandage evenly over the limb, and frequently moisten it with warm water, allowing it to dry on the part. To soften the skin, apply an ointment of one drachm of sugar of lead in an ounce of lard. If there are cracks, wash them with a solution of four ounces of alum in a pint of water. Feed the horse on bran mash, carrots, and green feed, and if there be much inflammation after a day or two, administer a ball of four or five drachms of aloes.

If the disease has reached the second stage, three doses of physic at intervals of two days will be needed. The best application to the heels will be a poultice made of beef tallow and mashed carrots, put on tolerably hot. It can be conveniently applied by drawing an old stocking leg over the leg, confining it at the fetlock joint, and filling it from above with the poultice. When this is removed, anoint the heels with an ointment of one part of rosin, three parts of lard melted together, and one part of calamine powder, added when the first mixture is cooling. *Am. Agriculturist.*

PETROLEUM FOR HORSES' SHOULDERS.—Joseph Harris, in the *American Agriculturist*, says that the best thing that he has tried for sore shoulder in horses is crude petroleum. He discovered its healing properties while applying it as paint for tools, by means of a rag held in the hand, which was accidentally sore. He now uses it for sores on all kinds of animals, and for some distance around the sore. Those who complain of the high price of drugs and medicines, may be satisfied as far as the healing properties of this remedy goes, for it may be bought for twenty or thirty cents per gallon, by the barrel, and whatever there may be left, after its medicinal application, will be excellent for putting on all wood articles to prevent them from decaying—such as ploughs, harrows, wheel-barrow, carts, wagons, hoes, cultivators, spades, drill machines, mowers, and reapers, horse rakes, rollers, &c. Use what is termed the light oil, which will penetrate the pores more perfectly, and exclude water and air. It is excellent for roofs, sides of barns, and out-houses generally, and may be applied with a small, new whitewash brush.

Stock Department.

The Moodlaw Flock.

SOME time ago we noticed the sale of Cheviot sheep at Moodlaw, in connection with the retirement of Mr. Brydon from the tenancy of that Farm. A short account of the Cheviot breed, to which he paid so much attention, may not be unacceptable to our readers, many of whom, no doubt, still keep up sufficient interest in the old country to read with pleasure any report of agricultural events transpiring there. The following particulars, as well as the accompanying illustrations, are taken from that most admirable agricultural journal, the *Farmer* (Scottish), to which we are so often indebted for important information, and which is among the most valuable and welcome of our exchanges.

At the beginning of the present century, when Culley wrote his treatise on live stock, the Cheviot breed of sheep were chiefly confined to the "fine green hills on the Scotch and English borders," but since that period it has spread over the northern Highlands, producing an immense addition to the national supplies of meat and wool. In Culley's time the Cheviot breed possessed certain defects, amongst which light fore-quarters and narrow breasts were prominent, but these defects have since been removed, especially in all well-bred sheep of the kind. The carcasses have also become heavier, and altogether the Cheviot is an exceedingly valuable breed, in its pure state, for those mountain ranges for which it is suited; while the females of the breed, when put to the Leicester ram, produce crosses of a very superior description.

That the Moodlaw flock has exercised a considerable influence on the general improvement of the Cheviot breed, will be allowed by all who have given the slightest attention to the subject; and Mr. Brydon eminently deserved the compliment paid him when a large company met him at the Crown Hotel in Edinburgh, to present him with his portrait, on the occasion of his leaving the farm of Moodlaw, of which he has been tenant for the last twenty-seven years.

Old Pallie, of whose head we give an engraving, Fig. 1, may be considered the "Hubback" of Moodlaw, the sire to which most of the pedigrees trace back, and of which Mr. Brydon's best show sheep have been immediate descendants. Old Pallie was descended from Old Stirling, a grand sheep in point of style, and heavy coated as respected fleece, which won eleven prizes, of which the prize at the Highland Society's Show at Stirling in 1832 was one. Old Pallie, which was also very successful as a show sheep, was of average size, but very compact, with a perfect coat, long quarters, round rib, small in the bone, and a very gay sheep to look at. Among others, he was the sire of Captain, sold in 1855, when three shear, to Mr. Borthwich, Hoperig, for 95 guineas; and also of a very grand ram, named The Duke, which was the winner of the first prize at the Berwick Show of the Highland and Agricultural Society, in 1854. The Duke was larger than his sire, and it was from the Wellington cast of his face, as seen in the engraving, Fig. 2, that he got his name. He had a fine "cock lug," or erect ear, a point much looked to by breeders of Cheviots, a bold, firm step, and was altogether a perfect model of a Cheviot ram.

Passing over a number of illustrious descendants, for the enumeration of which our space will not suffice, we may mention that many of them, besides

winning prizes and otherwise proving profitable to their owners, realized high prices by sale, of which 50, 60, 85, 121, and 155 guineas may be taken as examples; and we come next to the subject of the largest of the accompanying engravings.

One of the most celebrated of Old Pallie's descendants was Battersea, the winner of the first prize at the



FIG. 1.

Battersea Royal in 1862, as well as numerous other prizes. He was a very gay sheep, and possessed the same characteristics as Old Pallie and The Duke. He had a particularly good shoulder, breast, and neck, with an excellent rib and quarters, a beautifully set head and ears, and a very perfect coat. A



FIG. 2.

glance at his portrait, Fig. 3, will show how superior he was in the breast and shoulders to the Cheviots described by George Culley. Altogether, he was a very showy sheep, and after leaving some grand stock at Moodlaw, he was purchased by Mr. John Murray, live stock agent, Edinburgh, for a gentle-



FIG. 3.

man in Sutherlandshire. Turning to The Duke's descendants we find that Lord Clyde, one of his sons, gained eight prizes, including those of the Highland Society; and that Hennie, another of The Duke's sons, gained five prizes. Ben, a great-grandson of the Captain by Old Pallie, gained five prizes; and Thirlstane and Ettrick, others of his descendants, were also prize-takers, and fetched large sums.

The foregoing is merely a sketch of a few of the Moodlaw flock, and to enter into all the details which might be given regarding its history would occupy a far greater extent of space than we can afford. We would, however, mention one fact which shows the quality of, and tendency to, early maturity in the Moodlaw Cheviots. At the beginning of last month, a shearling wether, bred by Mr. Brydon, and one of a lot fed by Mr. Curror, Comiston, was killed in Edinburgh, and weighed no less than 133 lbs. of mutton. There were other sheep in the lot quite as good, and even better. From 1854 to 1866, both included, Mr. Brydon gained 225 prizes, his field of competition comprehending not only local shows, but, as we have shown, those of the Highland and Agricultural Society and the Royal Agricultural Society of England. Not satisfied with home victories, he crossed the English Channel in 1856, and brought home substantial marks of honor from the French capital.

Training Cattle to Jump.

We are too apt to underrate the intelligence of the domestic animals under our charge—and yet a moment's reflection should teach every farmer that cows, horses, sheep and pigs are very apt pupils; and most farmers' boys are quite proficient in teaching them to do mischief. Thus we find many persons, when turning stock into or out of pasture, instead of letting down all the bars, leaving two or three of the lower rails in their place; and then, by shouting or beating, perhaps, force the animals to leap over. This is capital training, the results of which are seen in the after disposition of animals to try their powers of jumping where a top rail happens to be off, and this accomplished, to set all fences at defiance, and make a descent upon the corn or grain field, as their inclination, ability or hunger may prompt them. Another good lesson is to open the gate but a little way, and then, as in the case of the bars, force the cattle forward, and by threats and blows compel them to pass through it. The result of this teaching is shown in the determined spirit manifested by some cattle to make a forcible entry into the stable-yards, fields, or, in fact, into almost every place where a gate or door may, by accident, be left slightly open.

A Western farmer says he makes it a rule, whenever cattle are made to pass a fence, whether through bars or "slippap," to leave one rail for them to pass under. This gives them a downward tendency, and lessens their inclination to jump or look upwards, as they are sure to do when a lazy attendant throws down a part of the rails, and makes them vault the rest. Cattle may be taught to go over any fence by the careful training they often get for this end, performed as follows:— "First, starve them or give them poor feed, which will make them light and rest less. As soon as they go over the lowest part of the fence after better provender, make them jump back again, and put on one more rail, saying, "I guess that will keep them out." Next day, (of course they will be in mischief again,) repeat the process, adding

another rail; in a short time they will take care of themselves, and harvest the crops without charge." *American Stock Journal.*

STEAMED HAY.—E. W. Stewart writes to the *American Farmer* that, after an experience of more than ten years, he finds two bushels of steamed hay are worth three bushels of unsteamed, and that one quart of corn meal steamed, with a bushel of straw, is equal to a bushel of hay.

The Dairy.

Address of X. A. Willard, A. M., of Herkimer Co., N. Y., Before the Canada Dairymen's Convention, at Ingersoll, Wednesday, July 31, 1867.

Mr. President and Friends:—

I am glad to meet you here to-day upon Canadian soil, and to assure you of the good will and respect which all men of liberal views in New York hold towards the people and Government of these Provinces. We are separated only by an imaginary line, and though living under different forms of Government, we recognize both as founded upon all those great and essential principles which ensure freedom, happiness, development and progress in the human race.

We of the New World scarcely appreciate the privileges we are enjoying, and it is only by observation and by contrasting our own condition with that of people on the Continent of Europe, that we begin to realize, properly, how much we owe for all that makes life desirable to the freedom of the institutions under which we live.

There is no place that I looked upon while abroad with more interest than the little island in the Thames, opposite Runnymede, and just below the royal castle at Windsor. It was here the barons in the old time forced from King John the Magna Charta, the grand old compact, that gave birth to English and American liberties. The stone is still preserved there, upon which the king signed the document more than six hundred years ago; and as I looked upon it, I thought how different might have been the destiny of the Anglo-Saxon race, had the great Charter not been given, and how great its influence in moulding and educating the people in the rights of manhood, and in establishing our civil and religious liberties.

Surely no two countries ought to be more closely united in friendship than Great Britain and the United States. Our commercial relations, to say nothing of race, language, religion and laws, make it desirable; and I trust that no unkind feelings may ever be engendered between such near neighbors as the States and Provinces. As dairymen, we of the States desire that all political or sectional differences be laid aside, and that you unite with us in elevating the standard of American cheese, until it has no rival in the markets of the world. We hail, therefore, the inauguration of a Canada Dairyman's Association, hoping that it will make common cause with us in our competition with European manufacturers.

The product of cheese now manufactured in America is very much beyond the consumptive demand of our people. Large quantities must be exported abroad, and unless remunerative prices be obtained, other branches of farming must be taken up, and our herds and factories abandoned. Britain is our principal foreign market. The peculiar condition of her wants is a fortunate circumstance for us, and gives hope that we shall ultimately succeed in producing for her the great bulk of this product. She now divides her imports, purchasing from Holland 80,000,000 pounds of cheese per annum—nearly double what she takes from us.

England, as you are aware, is densely populated, and is devoted to manufactures. She has long since ceased to produce the food needed for her people, and draws largely from other nations for every kind of eatable. The product of the dairy is a concentrated food, cheaper of transportation than the more bulky articles of grain and live stock, and this would seem to indicate that the time must come when dairy-farming in England will be abandoned for the fattening of stock for the shambles, and the growing of their crops, the cost of transportation upon which makes it expensive for her to import. Could the Dairy-farmers of England be induced to abandon the business, American cheese dairying would be the most reliable, remunerative and enduring branch of industry in which we could engage. We should have a steady export trade of all we could make, and at good prices, because there cheese enters into general consumption, and is regarded as one of the staples of life. But we never can effect this object, or break the Holland trade, so long as we continue to flood her markets with an inferior cheese, quick

of decay and liable to waste upon the dealers' hands. I regret to say, that with all our appliances and skill, there has been but small improvement in the manufacture of American cheese the present season. There have been immense quantities of poor and immature cheese brought forward, and at a time, too, when there was never more necessity for greater skill and caution in its manufacture and curing.

The causes are various, and need not be enumerated in detail, but some of them may be mentioned. The season in the States has been wet and cool, and the quality of pasturage, up to the middle of June, has not been of its usual good character. The curing rooms at most factories are defective, and it is a nice point to adapt your cheese machinery to variations in weather. There are many new hands in charge of factories, who lack observation and experience, and lastly, there is still negligence and want of cleanliness with the milk among patrons. Some of the early cheese was rather soft and insufficiently salted, while that more recently made is stiff and dry, requiring age and a proper temperature to ripen it up into a mellow, flaky condition. Some of our cheese-makers, too, have fallen into the impression that they have reached the end of the art, and nothing more is to be learned. Many of these have signally failed this season, and are now trying to discover the cause.

I warn your cheese-makers of Canada, as I have our own dairymen, that nothing is more prejudicial to success than the self-conceited opinion among men, that nothing new may be learned. It paralyzes all effort for improvement. It has been the fault of the Cheshire dairymen of England, who have seen their prestige as cheese-makers fade away, and who are now beaten by the Somerset dairymen and by our American factories. It is the oldest cheese district in England, and had acquired great favor, upon which they rested, forgetting that we live in an age of new ideas, when progress in every department of science is marching rapidly onward.

When I visited Cheshire, I was surprised to find they knew so little of the fundamental principles of cheese-making, and astonished at the useless waste of labor, and its unintelligent direction in the dairy. The Cheshire process is old and curious. The milk is set at a very low temperature, and its subsequent handling is so badly managed, that it is difficult to get rid of the whey, which often taints the cheese, or renders it rancid in taste. In some dairies so much rennet is added as will perfect coagulation in an hour, while in others this part of the process is protracted to an hour and a half. The curd is cut across with a long bladed-knife, and in a few minutes the breaking is commenced with a breaker of wire or tin, the operation being performed carefully and gently, and is completed in thirty or forty minutes. As soon as the curd sinks a portion of the whey is laded out, and the process of sinking and gathering is commenced. The dairymaid and her assistants press the curd toward the bottom with their hands and arms, and as the whey separates, it is dipped off, and when this operation has been continued for a considerable time the curd is slowly turned over. It is then drawn with the hands towards the side of the tub, the whey laded out, and the curd cut into square lumps. They now put it in a cloth, spread over a basket dripper, and after being subjected to a slight pressure, it is again cut in squares and broken with the hands, when it is returned to the cloth and subjected to an increased pressure. This process is repeated several times, until the whey ceases to flow freely. The curd is then passed through a curd mill, or thoroughly crushed with the hand, and when salted is in a soft pulpy state, easily formed in rolls like butter. It is salted by guess and packed into the hoop. A strip of tin four or five inches wide is placed about the curd on the inside of the hoop and above it, so as to raise the curd above the top of the hoop, and it sinks down with the curd as pressure is applied.

The hoops with the cheese are now placed in the warmest part of the dairy for an hour or two, with a small weight placed upon the fowler. It then goes into a brick oven and is heated to about 100°, in order to accelerate a flow of whey from the cheese. In the evening it is taken out and turned, receiving a cloth, and returned to the furnace. On the following morning it is again turned in the hoop, the cloth changed, and is placed upon a bench, where it is pierced with skewers. These are frequently changed in the holes of the hoops, and are always wiped with a clean cloth when changing. The cheese remains on the bench for one or two days, the cloth being changed two or three times, and the skewering continued. On the third day the cheese is put in press, with a change of cloth twice or thrice a day, and the skewering still continued. It is kept in press for three days or longer, according to the time the cheese is required to dry. When taken from the press the marks and chipped edges are closed up with a hot iron, and the cheese rubbed over with grease.

They are then bound around with a stout linen bandage, and after remaining a few days in a cool place go to the cheese curing room, where they are placed upon straw or dried grass, regularly turned each day, and often rubbed and greased. They will generally be ready for market in three or four months, but are longer maturing in some of the best dairies. They receive great care and attention in the cheese room, and various expedients are practiced to impart to them an old and ripe appearance. Some keep a cabbage leaf or a plate upon the centre of the cheese, to give a damp and mouldy appearance.

I have gone into the various details of Cheshire cheese-making as explained to me by Mr. McAdam, whom I met in Cheshire, and as I saw it in operation, that you may readily compare its laborious manipulations with the American factory process, with its labor-saving appliances and systematic operations.

When I went down into Cheshire, it was so painful to see men floundering along in this primitive way that I could not help explaining our American system, and leaving among some of the best farmers copies of the reports of the American Dairyman's Association; and I see these reports are beginning to awaken attention.

Last month, there was a great meeting of farmers and land owners at the Corn Exchange in Chester, which was presided over by the Mayor of that city, and the discussion was upon the propriety of forming a company for establishing a factory for the manufacture of cheese. A friend in Cheshire sends me the *Chester Courant*, of June 26th, which gives a synopsis of the discussions. They are significant, and may possibly be the beginning of a revolution in European cheese-making.

From the reports of the various addresses delivered it appears that the principal cause which made a change of system desirable, if not necessary, was the loss of cows on many farms from the ravages of rinderpest. This had so reduced the amount of milk that many farmers could not afford to keep the usual number of dairy hands, and had not work for the dairymaids; and it was thought that if the factory system could be introduced in some central situation, many of the small farmers would save the expense of keeping up the dairy hands, and by sending their milk to the factory, still make good use of their diminished quantities. It was also admitted that much of the cheese was manufactured without any regular system, and as it were by guess, in consequence of which it varied in quality exceedingly. It was contended by several gentlemen who had made themselves familiar with the American factory system, that its introduction would secure uniformity of quality, and by the adoption of the latest improvements in the mode of manufacture, would insure also the highest standard of excellence. Another cause, of an opposite character to the first mentioned, was also adduced as having led to the projected change of system, namely, the increased price of labour, and the rise in wages that had taken place, and was likely to increase. This enhanced the difficulties of conducting the small private dairies, and pointed towards the associated system as the readiest method of relief. In the discussion which took place very little was advanced in the way of opposition or even hesitation. It was merely suggested, that where, as in England, the population was so dense and the demand for milk so large, the price of that article would always render dairying even for the milk alone a profitable business, and constituted an important difference between the condition of that country and the more thinly populated districts of North America. One speaker with conservative attachment to old ways, and prejudice against change, thought that "every farmer ought to have a wife that could make cheese, and if he had not, was not fit to be a farmer." But on the whole the meeting was remarkably unanimous, and resulted in the appointment of a committee to take the matter into consideration and report at a future meeting.

I heard while abroad that they were trying to introduce our system into Northern Europe, and I feel anxious that we may improve the quality of our cheese, and establish such a reputation, that our goods will always be preferred at ten to twenty per cent. above all competition.

English CHEESE, I see from English advices, still keeps in advance of our best grades by eight to ten per cent. It is a superior grade of cheese, of clean, pure flavour, but containing less butter than that of our factories.

REQUISITES IN CHEESE-MAKING, &c.

In other English methods of cheese-making I was greatly disappointed. The Wiltshire, the Double and Single Gloucester, and other processes, are defective and extremely laborious. The implements are outlandish, and belong to a past age of the world. The dairy people are tenacious of their practice, and adhere to it with a dogged pertinacity, notwithstanding their cheese brings a much less price in the

principal markets than that made under an improved system. Much of this cheese is manufactured by guess and varies in character, according to the skill and experience of the dairymaid. There is scarcely a thing in any of their processes that would be of any service to us, and if introduced here would be a positive damage. American cheese is richer and better made, and is acknowledged by the best judges in Great Britain to surpass in every respect their styles, as they are generally made. The Cheddar, however, is a very high character of cheese, and commands a very high price. Its good qualities have not been overrated. Their best samples have rarely been equalled, and never surpassed in American dairies. The quantity made is comparatively small. It takes its name from a small village at the foot of the Mendip Hills, in Somerset Co., its manufacture there having been commenced more than an hundred years ago. Various improvements have been made in the process, until it has been reduced to a system which is at once simple and philosophical. It may be said to be a chemical process, requiring judgment and skill in the management of acids, until the curd has passed through its different stages and is properly developed for the press. Its leading principles have been understood and practised by our best cheese makers for some years, and it is due to these that American cheese has been able to obtain such a firm foothold in the English market. The early expulsion of the whey in the English process, together with the exposure of the curd a longer time to the atmosphere, the pressing, grinding and salting, are doubtless improvements upon our practice.

I do not go into detail upon these points; they have been fully explained in my recent address before the American Dairymen's Association; but I allude to them here, that proper credit may be given to English Dairymen. I must say this also, in their favor: nothing, while abroad, struck me with more force and admiration, than the perfect neatness and cleanliness of the dairy. The milk rooms are located beyond the reach of bad odors likely to taint the milk. They have stone floors, the joints nicely cemented together, so that no slops or putrid matter can find an entrance. The floors, the utensils, and everything connected with the establishment, are as bright, clean and sweet, as the table and crockery of the most fastidious house-keeper. Many of the farmers will not allow the milkers to come into the milk-room, but have conductors by which the milk is conveyed to the tubs from the outside.

It is this perfect cleanliness of the dairy, together with the favorable condition of the climate, and a more uniform temperature of curing rooms, that enable them to secure that mild, pure flavor, which is characteristic of some of their nice grades of cheese. The best American cheese has more butter in its composition and is better manufactured as a whole than the English. The great defect in much of our cheese is its flavor.

We have a hot, bad climate to contend with; we are too careless in milking, and in handling the milk where taints can be absorbed. We put the warm milk in cans, confining it with a close-fitting cover, and haul it a long distance in a blazing sun to the factory, and it is often in a putrid condition before going to the vats. What wonder, then, that much of our cheese, rich in butter and splendidly manufactured, is out of flavor, and vast sums in consequence are lost.

American dairymen have been trying for years to discover wherein this defect of flavor can be remedied. A great deal of time has been spent in the investigation of the subject, and a great many theories suggested, but it has all amounted to nothing. From my observations both at home and abroad, I am convinced that first principles have been overlooked; that we have been trying to make a finely flavored cheese from imperfect milk, a condition which manufacturers never have been and never will be able to accomplish.

A reformation must be had, in securing clean and perfectly pure milk, together with better curing rooms; and then, under our improved system, American cheese will stand, where our nice grades already do, as the richest and finest that the world produces.

I went up to see the Royal Dairy at Windsor, and if every dairymen in America could go there, he would come back with greatly improved views, in regard to the importance of cleanliness in dairy practice.

PRINCE ALBERT'S MODEL FARM AND THE ROYAL DAIRY.

The model farm and dairy is but a short drive from the royal palace, and is exceedingly interesting to one who has a taste for farming. The cluster of farm-yard buildings, including that for the steam-engine, stand together and are of brick. The whole yard as well as the alleys are paved with stone. Under one of the long sheds were arranged the various machines for preparing the ground for crops, and in another building the machines for harvesting crops. The stalls for horses and cattle are arranged

quite differently from ours in New York. The buildings are rather sheds than barns, being one story, and divided into compartments, each having an open arch-way leading into an enclosure of the yard. One or two horses occupy each compartment, where they have liberty to be, either under cover, or in the little division of the yard adjoining the stall or box, which is fenced with iron railings. The cattle stalls are arranged in the same way. Each stall has feeding boxes and a tank of water in the same range, and in front of which there is a broad alley on a level with the feed box, where persons in charge can deliver the food or pass down and see that all is right. Every part of the yards and buildings has stone pavements and floors, with gutters for conducting off the liquid manures, so that there shall be no waste. Straw is used extensively for bedding, or to be tramped up for manure. In one of the stalls were some fine specimens of cattle from India.

THE ROYAL DAIRY.

The dairy buildings stand apart, and are at some distance from the farm buildings. The dairy house is a beautiful structure of brick, with cupola and pointed roof, its outward appearance having a pleasing effect. The interior, however, is, beyond question, all that is neat and tasteful in dairy decoration. The floor, the walls and the ceiling, are of china, fashioned after the most graceful designs. The pans for holding the milk are of china, white, with a heavy line of gilt around the edge. They are elliptical in shape, with a nose or scallop at one end, for emptying the milk; they stand upon broad, white marble slabs, highly polished. The windows are of stained glass, and on each side of the room are fountains of china, arranged with unique figures and graceful devices. Tiny jets of water spin up from these, and fall into the china basins with a musical ripple. The ceiling has open spaces arranged so as to have the appearance of Mosaic work, and there are three compartments between the ceiling and roof, so as to secure a perfect ventilation. All about the sides of the room are medallion heads of the Royal Family, elegantly pictured on china, and the whole reminds one of the charming descriptions of fairy life which we read in childhood.

BUTTER-MAKING AND THE IMPLEMENTS.

It was 3 o'clock, and the milkers were bringing in the milk, which is strained in an adjoining room. It is then placed upon the marble slabs, and the cream is taken off when the milk has stood twenty-four hours. In twelve hours after it is skimmed again.

The cream is churned when forty-eight hours old, the churning being performed in an adjoining room. The churn is of tin, barrel shaped, and revolving. It has compartments at each end for hot or cold water, so that temperature can be regulated without mingling the water with the cream. The butter is washed in an oval tub, unpainted, and after being washed, is worked upon two thin wooden paddles.

The cream and milk for the royal tables are put in small tin cans with covers, and these again are placed in a larger tin receptacle with cover, when they are sent away to the palace, either to London or the castle, as the case may be, where the Queen is staying. The butter and milk, of which we tasted, had a purity of flavor and sweetness that could not be surpassed.

THE MILKING STABLES AND COWS.

From the dairy we passed through a long, broad, stone hall, to the stables where the milking was being conducted. There are about sixty cows in milk, through bred short horns, mostly of the Booth strain of blood, and a half dozen Alderneys. The milking stables are a perfect model of cleanliness, having a glass roof in the centre, and admirably arranged for ventilation. The cattle stand upon a stone floor, which inclines towards the drop or gutter, and there is a broad space back of the cows.

Each cow is tied, and has before her a feed box and water tank, two cows standing in a division. The centre alley is raised considerably higher than the floor of the stables, where the cows stand, and is reached by an inclined walk.

Here were some beautiful animals, though I could not see that the quantity of milk given was anything beyond that of our best milking stock. Those I saw milked were giving, perhaps, ten quarts each. In another building, arranged upon a plan similar to the cattle boxes in the farm-yard, were a half dozen bulls, all fine specimens of the short-horn and Alderney blood. Opposite the milking stables, and across the open court, is the piggery, where swine of the Prince Albert breed are kept. I went into the pastures and upon the meadows, and saw much that was of interest, but must not weary you with details.

PROGRESS OF THE FACTORY SYSTEM.

The dairymen of New York have never been alarmed at the progress of the factory system until

this season. The first factory was erected in 1851, by Jem Williams of Rome, N. Y., and in nine years thereafter, only twenty associations dared to try the experiment. In 1860, 17 new factories were put in operation; in 1861, 18; in 1862, 25; in 1863, 111; in 1864, 210; and at the end of 1866, we had more than 500 factories in successful operation in New York alone.

Meanwhile, the last four years have seen the system carried largely into the Eastern, Western, and Middle States, and into these Provinces. I can not give you with accuracy the number of new factories that have been erected during the past year, but we have track of a thousand.

From this it will be seen that the dairy business is largely on the increase in America; but it must not be supposed that these 1000 new factories represent new districts. A considerable proportion has been erected in old districts, and has not increased the annual quantity of cheese, only diverted it from family to factory manufacture. We are told by the speculators that immense quantities of cheese are being made, and that we are producing in such quantities as to flood all the markets of the world. These statements are mere matters of guess-work, to frighten the farmers, and get cheese forward at low figures. They have been successful in this operation, and the farmers of New York are actually selling their cheese at a less price than the cost of producing, and many will come out in debt at the end of the season.

We live under disadvantages which do not reach you here. Our taxation is high; labor of all kinds is expensive. The success of the last few years has led many to invest in lands, at 150 to 200 dollars per acre, and in cows at eighty to one hundred dollars per head. Our dairymen had looked for an average of 15c to 16c net on their cheese, but instead of that, family dairies have been selling at the Little Falls market at from 8c to 10c in our paper currency, and factories in various parts of the State at from 10c to 13c.

We are all in the dark as to the quantity of cheese being produced, and both dealer and manufacturer are, I fear, led astray on this point. I hope one of the first things your association does, will be to inaugurate a plan for obtaining the weekly production, and amount of cheese on hand in the Province. Let the figures be sent to the Secretary, so that every factory in Canada may have the means of knowing what the quantity is on hand, and you will not be at the mercy of speculators, or of vague reports, unauthorized by any actual knowledge.

We have been shipping very largely abroad, and hurrying forward immature cheese, which has lowered the market on the other side, while shippers have taken advantage of the times, and made large sums from the trade. Some arrangement should be made by factories for shipping direct to Europe, and it would pay them to unite in sending one of their number, or some person, abroad, to look after the condition of cheese as it arrives, and the sales, even when consigned to European houses.

CLEANLINESS: TIN PAILS FOR MILK, &c.

In new sections, where the dairy is being established, it is important to start with correct principles. The old districts have much to unlearn; and unless they speedily change some of their practices, they will be outdone by the new districts, which are making greater exertions for success. The old wooden pail as a milk pail is a nuisance, and its use entails thousands of dollars loss to the dairy interest. I urged the use of tin pails for milking at our Convention, more than two years ago, and suggested how they should be made. They should have concave bottoms with no sharp corners, where milk can lodge and be difficult to cleanse. They should have a narrow rim upon the top, turning over, so as to slip down, and nicely fit in a wooden pail, which encases it for protection. Every factory should urge upon its patrons the use of the tin dairy pail. It is just now beginning to be adopted in the old districts, and must come into general use, because it is so difficult to keep wooden pails clean, that even the most scrupulously neat often fail to do so. It is wonderful what a small quantity of ferment will taint a large quantity of milk. The accumulation of old and decomposed particles about the corners and sides of a wooden pail, communicates its poison to the good milk, and sets it into a ferment which the cheesemaker is often unable to control. Painted pails are objectionable, because the paint imparts its taint and poison to the cheese.

My friend, Mr. Farrington, who used to deal largely in cheese at our market, whom we were sorry to lose from New York, and who was regarded as one of the best judges of cheese in the State, was the first, I think, to bring this matter of milk poison from paint before the public. In several samples of poisoned cheese, condemned in the city as poisonous, he traced it to newly painted tubs and pails, which were then in common use among the dairymen of Herkimer.

I have alluded to cleanliness in milking, and about the dairy, as an important element in securing good flavour in cheese, and it cannot be urged too strongly upon your attention.

The feeding of swine at factories, unless far removed from the buildings, cannot be recommended. Some of our new factories in Oneida have entirely banished them from the premises, and the whey is taken home by patrons. I have seen some of these factories, where everything is kept sweet and clean both at the factory and among patrons, and the cheese made is becoming noted for its delicate flavour.

These questions are just beginning to be understood and appreciated by cheese-makers, and you will do well to profit by that which we have been so long in learning.

RECENT IMPROVEMENTS IN FACTORY BUILDINGS, &c.

In the arrangements and fitting up of factories, some important improvements are now being introduced. Substitutes for the steam engine and boiler are being tested. One of the devices recently brought out is an arrangement of gas pipe set in a furnace, upon which the fire comes in direct contact, heating the water by this means. Another device just put in operation is a nest of hollow cast iron boxes connected by pipe, and set in a brick furnace, the fire applied underneath. Mr. Sears, of Madison Co., who owns two factories, has taken out his steam engine, and has tested this contrivance. He says they are the most perfect heaters that have yet been invented, and that he would not use an engine if furnished without cost. This new heater, for a large factory, only costs \$150; it is simple, substantial, and gives perfect control of temperature. In a test at his factory of the wood consumed, he finds that three-fourths of a cord of three foot wood will manufacture 12,000 pounds of cheese.

The placing of the sink below the vats, by which the whole mass of whey and curds may run out of the vat through a chute at one end, is another labour-saving appliance. There are machines for cooling the milk in the vats at night and preventing the cream from rising, operated by clock work, and by waste water from the vats. The application of wind power, for raising water to supply factories, has been found to work successfully.

Then there are the two processes for extracting butter from whey, which are claimed to make good marketable butter, adding largely to the receipts of the factory.

The paper cheese box is another new invention which promises to be successful. The curd mill, though long in use in England, is now just beginning to be introduced in America, and with the best results. Its use is not only a saving of labour, but it improves the texture of cheese, rendering it more compact or less porous.

In the Cheddar process the curds are put in the hoop and pressed for ten minutes, then taken out, ground in the curd-mill, and salted. This I think is an improvement upon our process, and should at once be adopted. By it you get a more uniform distribution of the salt, and know precisely what is being done, because the curd is dryer and the salt is not carried off in the whey, as in our process. It is claimed, too, that by salting before pressure, and while the curd is not sufficiently cool, the salt has the effect of forming a shining, tough pellicle about the particles of curd, not only enclosing whey or moisture, but on account of which the union is less perfect, and the cheese in consequence less compact.

Again, the Cheddar dairymen, as soon as they can begin to distinguish an acid condition of the whey, immediately commence drawing it from the vat, and allow the acid to further develop itself in the curd spread out or heaped up in the vat and sink. This I think is another important improvement, which should be adopted at the factories. It is very difficult to regulate the final condition of the curd under all circumstances in the whey. The acid is often pressed forward upon the curd too rapidly, especially in hot and sultry weather. Then, if there be taints in the milk, the longer the curd is steeped in the whey, the more distinct and marked will they be in the cheese; but if you get rid of it early, there is more hope of preserving clean flavor, since every moment the whey stands under the influence of heat and decomposition the stronger becomes its odor and taint, as every practical cheese-maker has observed. It is to be doubted whether an uniform fine flavor can be maintained under all the variable conditions of milk unless this principle is recognized. At any rate, under this process there is less difficulty in obtaining desirable results.

There is another suggestion in regard to rennet and annatto, which is not understood even by our oldest and best cheese-makers.

At many of the factories great complaints are made that the Rennets are weak, and extraordinary large quantities are often used at heavy expense. It is true there is great difference in the strength of

rennet, and the quantity of milk they will coagulate, but the trouble is often aggravated by not properly understanding the nature of the materials employed. The annatto commonly used is cut by potash, a powerful alkali. Rennet is an acid, or at least its action is similar, and is directly opposite to that of an alkali. The one neutralizes the other. Now, if annatto is cut with very strong lye, or a strong solution of potash when it is added to the milk it neutralizes or destroys the effect of a large quantity of rennet. Hence the annatto should always be cut with as weak a solution of potash or lye as will properly dissolve it. I am satisfied, if factories would act upon this suggestion, many thousands of dollars would be saved throughout the dairy region.

UTILIZING WHEY.

The utilizing of the whey from factories has received considerable attention, and various suggestions have been made as to its value and most profitable employment. Its analysis shows that it is too valuable to be thrown away. Some contend that it can be turned to the most profit when fed to cows, while others stoutly affirm that more can be realized from it as food for hogs. While in England I was told by the dairy farmers, and it was confirmed by provision dealers of London, that a very superior quality of pork was made by feeding whey mingled with barley meal; that in fact no bacon was equal to it in the delicacy of its flavor, and that it sold for most money in the markets.

Of the solid constituents of whey, the sugar of milk is in the largest proportion, being very much in the same ratio that it is in the milk. Some effort, it would seem, ought to be made by the dairy associations, with a view of extracting this material and fitting it for commerce. The milk sugar that we find at the shops is imported from Switzerland, and is retailed at \$1.00 per pound. An estimate has been made of the annual yield of sugar from 30 factories averaging 100 cows each, and it amounts to the enormous quantity of two millions of pounds, or 10,000 barrels; but suppose the price is put at only ten cents per pound, then a factory of a thousand cows, on the above estimate, would yield 800 pounds of sugar per day, which would amount to \$80, or \$2,400 per month.

When in London, I had some conversation with Prof. Voelcker, the great chemist of the Royal Agricultural Society, on this subject, and he was surprised that no effort had been made by the American factories to turn this constituent of the whey to account, since the large quantities of milk received at one point make it more feasible than where the milk was scattered over the country and worked up in family dairies.

Good milk contains from 8 to 9 per cent. of butter and casein and 5 per cent. of milk sugar. The analysis of whey shows that it yields 4½ per cent. of milk sugar, or half as much weight as the butter and casein of the milk combined. In Switzerland milk sugar is made by allowing the whey to trickle down the sides of mountains in wooden gutters or troughs. Threads are placed in the gutters, upon which the sugar adheres as the watery portions of the whey pass off in evaporation.

It must be evident that the source of income from the dairy would be very much increased could some practical and inexpensive method be invented to take this article from the whey. Whether evaporating pans could be constructed, and heat used profitably in securing this object, is a question for investigation; and it seems to me that the Dairy Associations of America combined might profitably employ some chemist to make the proper experiments. If every factory would contribute fifty cents each, good talent could be secured for such an investigation, and a report upon it, even if it amounted to nothing practical, would in many ways be valuable to science.

STYLES OF CHEESE.

I cannot say how it may be among the Canada factories, but on our side many of the factories still continue to make a large sized cheese. They find them difficult of sale during the hot weather, and are making a decided loss. For the English market, the most popular shapes are the small Cheddars of from forty to seventy pounds. The larger Cheddars are fifteen and a half inches in diameter, by twelve and a half inches high, and in the smaller sizes these proportions are maintained.

The London dealers told me they could make extra sales, if factories would in part adopt the single Gloucester style, or Derby shapes, pressing in fourteen and fifteen inch hoops, about four inches high. Cheese of this description could be sent forward *free in a box*, by introducing two heavy scale boards between the cheese. A few of this style have been shipped abroad in this way, and they realized about a penny a pound more than the finest American samples of the old shapes. I am not sure whether the truckle shapes could be made profitably at factories for exportation, but they would command extra prices.

They are pressed in six inch hoops, and are from eight to ten inches high.

SHIPPING DIRECT.

In closing, I have but a word to say about the shipping of cheese direct from the factory to European markets. Those who have watched the trade must see plainly that our present system is in many ways defective, and one under which a good share of the profits are taken by the speculators and various dealers, through whose hands it passes, before reaching the other side. Some have advised that an American agency be established abroad for the sale of factory cheese. There would be difficulties in the way of successfully carrying out this work. The provision trade in England seems to be mapped out with much more system than in this country, and the different classes seem to be banded together to protect any infringement of the general custom. The cheese dealers in England are divided into four classes; the importer; the broker; the middleman; and the grocer or cutter.

The middlemen have immense storehouses in every town and city, and keep large stocks on hand. They purchase from the shipper or importer, and sell to the small dealers, and each has a line of customers of whose responsibility he keeps well posted, and he sells to them in a wholesale way, either for cash or on time.

The importer sells (generally on short time) to these middlemen, who are for the most part persons of wealth, who have been long in the trade, and are well known. The broker acts as salesman between the importer and middlemen, advising the latter of arrivals, prices, &c. The whole system is so perfected as to reduce the risk of all parties as much as possible, and make expeditious sales. The importer keeps track of the responsibility of his customers, the middlemen; and the middlemen, in turn, of the small dealers; and they, in turn, of their customers, the consumers; while the broker receives his commission from first hands. Now, in the establishment of an American house, we should have to contend against the combined influence of many of these men, and unless cheese was sold for cash, there would be great danger of losing, since it would be impossible always to know the responsibility of purchasers.

The more feasible plan, it seems to me, would be for our Dairy Associations to employ some reliable man under a salary, send him to Liverpool or London, and there make shipments direct to the old and established houses. The duty of the agent would be to give advice to factories, to look at the cheese as it comes in, and keep watch upon transactions, in order that no advantage be taken in sales, &c.

Under this arrangement I think better prices could be obtained for our cheese, and at the same time a safe business done, since the shipper handling the cheese advances the money for it and guarantee all sales. The whole work of selling, guaranteeing sales, and advancing money, can be done for a minimum of five per cent. There are London and Liverpool houses, of the highest responsibility, who will advance seven-eighths of the market value of the cheese in New York, as soon as it reaches that city, and then pay over the balance as soon as sales are made. Had the American Dairymen's Association organized a movement of this kind, I am certain better prices could have been realized for cheese than at present. The factories would then have had two sources through which to dispose of cheese. If home prices were not satisfactory, then the cheese could be shipped abroad direct. Now they have but one course to pursue, and they are forced to take what the dealer offers, or see their curing rooms crowded to repletion, with a prospect of no better prices for holding.

These are some of the questions which it seems to me can be profitably considered at this meeting.

I ought, perhaps, to say, in view of the future prospects of dairying, that the South is poor and has no money to pay for cheese. This gives us scarcely any trade in that quarter this season.

As the Southern States become re-organized and business again becomes prosperous, they will take large quantities of our dairy produce, and this outlet must have a marked influence on sales and future prospects. I shall hope that this Association may co-operate with and form a part of the American Dairymen's Association, and that all may work together for the best interest of American dairying.

A quantity of fresh butter from Normandy now finds its way into the London market, and commands as high a price as the produce of the choicest dairies of Buckinghamshire. A short time since the Right Hon. E. Monsell, M.P., explained in a letter published in a Limerick paper the cause of the superiority of French butter, which is simply the superior cleanliness of all the dairy operations.

Cleanliness and Quality in Cheese-making.

To the Editor of THE CANADA FARMER :

Sir—You and I, with others interested, had the pleasure of listening to Mr. Willard's admirable address to the Dairymen at Ingersoll.

You remember how he extolled that virtue which is next to godliness. He stated in the most emphatic manner that without cleanliness no man, or woman either, can make good cheese.

Last week the writer took a trip among the cheese factories, most of which are reasonably clean and tidy, some of them models of cleanliness; but it was my lot to come across one not 100 miles from Princeton, on a stone road, so very extraordinary in its character, that I have been induced to write to you in reference to it. The stench is sickening for a quarter of a mile round, and I have no doubt that it could be smelt a mile off when the wind is favorable. A very short distance from the factory, a number of hogs are confined in a small space, and in a filthy state. This will explain the stench that prevails; but this did not prepare me for what I saw inside. Where the milk is taken in it has been slopped down the boards and never been washed or scraped off; consequently, with the sun shining on it, it is in a *sinking, repulsive* state, and of course is the resort of swarms of flies, which are nearly as bad as the plague of flies in Egypt. The cheese vats look as though the outsides have not been cleaned since they were made. A state of disorder prevails throughout this whole concern, and to crown all, the family live under the same roof. The natural consequence of this state of affairs is the worst cheese imaginable. Will an agent in England do anything for the sale of such? It affords me much pleasure to speak very favorably of some of our factories, but "excelsior" should be the motto of the makers.

To show you that even in N. Y. State, where cheese-making has been so long carried on, perfection in the article is rare, I may state that we recently sent an order to a New York broker, who replied that he could not fill it, as our description "meant perfection." This will appear strange when we remember that the receipts in that city are from 30,000 to 50,000 boxes per week; yet a party always in the market could not find 200 really perfect cheese.

To show that this description is what at all events our dairymen should aim at, we give the following extract from the last letter of our London friends.

"Supplies are very heavy, and prices rather easier for all sorts, except the *very finest*. The bulk of what is now here is of useful quality, but there is little *really fine* offering."

"We doubt if there are five factories in Canada whose make in the home market would obtain that character. To obtain such a reputation it must be of the right weight, shape, color, firmness, texture, and above all things else, clean flavor. When your dairymen have such an article to offer at the current market rates, we and others are ready to introduce their cheese into the English market."

WILLIAM DAVIES & Co.

TORONTO, August, 1867.

Milk Measure.

To the Editor of THE CANADA FARMER :

Sir,—I was very pleased to read your report of the Dairymen's Convention held in Ingersoll on the 31st ult, and have no doubt but the result will be of great importance to our cheese men and farmers generally. I have bought a good many cows this season, and have paid from thirty-five to forty-five dollars each for the class of cows that a few years ago could be had in any one of our markets at from twenty to thirty dollars each. This extra money goes directly into the pockets of the farmer without extra trouble or expense.

My object in writing to you upon this occasion, however, is more to gain knowledge than to impart it. For a long time I have been endeavouring to find out the proper and legal measure for milk, and am now as far from that knowledge as ever. Some sell it by the pound, some sell it by the quart, *beer* measure, others sell it by the quart, *wine* measure. The difference in these measures is very great: a gallon.

beer measure, holds five quarts *wine* measure. The whole seems in uncertainty, and should remain so no longer. As I read the law, I believe we have only one measure in Ontario, which is the wine measure, and even beer is measured by it. If such is the case, why use any other? Charges can be made accordingly, and all would be governed by it, and no one injured.

I would, if in my power, just do with weights and measures as we have done, (ought to do, Ed. C. F.) with our coins, and thereby leave no room for question or trickery.

If it is giving you too much trouble to answer this question, and I know you are not a lawyer, please publish what I have written, and it may lead to the result I have in view—viz., that we may all sell and buy by one measure.

DENIZEN.

August 17th, 1867.

NOTE BY ED. C. F.—This is certainly a question of considerable importance, and ought to be unequivocally settled. Our correspondent is right with regard to the practice of using only wine measure in this Province for both beer and spirits, although by the original statutes the old imperial measures are the standard for this country. The Canada legislature have, however, for special reasons, sanctioned the above modification. But with regard to milk it is still the custom, in this city at least, and we presume throughout the Province, to sell this article by the imperial beer measure. The matter has been so decided in reference to a question which arose respecting it in the hospital here, and the military commissariat department requires the same standard of measure. We presume it is immaterial which standard is adopted, provided the practice be uniform and the law on the subject quite clear.

Arguments for the Cheese Factory System in England.

The following letter, addressed by Mr. G. Jackson, of Tattenhall Hall, to the *Chester Chronicle*, puts the present position of English dairying and the advantages of the factory system so forcibly that we cannot forbear republishing the extract here:—

"Facts are stubborn things," and I take it that at the present time the following facts deserve the attention of the owners and occupiers of Cheshire dairy farms.

Fact 1.—We learn from the price current last Saturday of one of the Liverpool cheese merchants, that the stocks of American cheese are in excess of the two previous years—viz :

STOCK OF CHEESE IN THIS PORT 30TH JUNE —1867 11461 1866, 1250, 1865, 1619.

FACTORIES.	CWT.	FARM DAIRIES.	CWT.
Fine Factory.....	60s. to 63s.	Very Good.....	45s. to 52s.
Very good ditto.....	54s. to 59s.	Good.....	42s. to 46s.
Good ditto.....	48s. to 53s.	Medium.....	35s. to 38s.
Medium.....	44s. to 47s.	Ordinary.....	25s. to 34s.

And still more noteworthy, that the cheese made at factories are designated "fine," "very good," "good," and "medium," while those made in private dairies are only classed below "fine" to "ordinary," and the difference of price from 12s. to 19s. per cwt. in favour of factory cheese-making as compared with private dairies.

Fact 2. The price of Cheshire cheese on Thursday last at Chester fair, as given in the *Courant*, was from 40s. to 53s.; scarcely equal to the price of American farm dairies, and 10s. under the price of the best American factory dairies!

Fact 3.—In the Cheddar cheese district, at the first of the meetings of the Chamber of Commerce at Swindon, they mooted in May last the question of establishing cheese factories, and from the articles signed "Progress," that have since appeared in the *North Wiltshire Herald*, the members of Parliament, land owners, and farmers, are entering into the subject with spirit, and have got the start of us in Cheshire.

Fact 4.—In the cheese districts of the United States and Canada, the climate is so hot in July and August as to burn up the pasturage, and necessitate the cows being fed on green Indian corn; and yet, under the disadvantages of climate and bad roads for moving milk, we find, by the introduction of cheese fac-

ories, cheeses are being made and sent 2000 miles in hot steamers over the Atlantic, so superior that we are being beaten in our own markets.

Fact 5.—It is a fact that very few of the daughters of our agricultural labourers will now engage to do dairy drudgery; and the education they are getting in our national schools fits them for better service, and they find they can get better wages and more genial employment in private families and in towns, so that practically Cheshire farmers find more difficulty in getting dairy servants than in filling up their dairy stocks.

Fact 6.—The Cheshire farmers' daughters have seen so much of the dairy slavery to which their mothers have been doomed, that it is notorious they prefer for husbands tradesmen, tailors, or even cobblers, to Cheshire farmers; and so the race of dairy-maids is fast dying out, and it is gratifying to find the writer in the *North Wiltshire Herald* stating that he devoted the energies of his youth to the liberation of the West India slaves, but that he will devote the remaining energies of his life to the liberation of dairy slaves at home.

The inference, from the facts stated, is unmistakable: if Cheshire cheese is to maintain the character it has hitherto done, if Cheshire farms are to pay their rents and compete with America and the Cheddar cheese districts, we must be willing to learn the lessons the American cheese factories are teaching us, and so exchange our "Rule of Thumb" and dairy slaves for science and machinery.

American View of the Dairy Interest in Canada.

In a recent number of the *Utica Weekly Herald*, we observe an interesting report of the late Dairymen's Convention at Ingersoll, by Mr. C. D. Faulkner, who was present on the occasion along with several other prominent representatives of the Dairy interest of New York. Few persons are so well qualified as Mr. Faulkner to express an opinion on matters connected with the Dairy, as he has long been one of the most extensive buyers of dairy products in New York State. His views and suggestions are, therefore, well worthy of note and consideration. We have not space for the whole of the report, but must content ourselves with one or two extracts only. Having, besides attending the convention, visited several Canadian cheese factories, Mr. Faulkner observes:—

"So far as my judgment goes, after what I have seen, their factories and enterprise will compare favorably with ours in the States. Thus it will be readily seen that we have a successful rival in cheese-making in Canada. While they have the low price of land, labor, cows, taxes, and things necessary for carrying on the business so much in their favor, and can surely get our price for their produce, they will increase their make of cheese with much profit, and to us it will be but just a paying business, or, to say the least, one of small profits.

"I am well satisfied that the Canadas will soon have their market opened, and plenty of buyers on hand ready to purchase their cheese, (if fine) as fast as it is ready for market. Buyers are sure to go where good goods are to be had, as they are sure to be in Canada, while they have every facility for making a good article."

We should ourselves heartily rejoice if the competition now existing between such near neighbors should lead to the consummation to which Mr. Faulkner adverts in the following concluding paragraph:—

"It only remains for us to see where this competition will end, unless arrested in some way. Perhaps the re-establishment of the 'Reciprocity Treaty' might have the effect; for if the duties were removed we might supply ourselves with cows from Canada, and make matters equal in that respect, and, at the same time, put their wheat in competition with ours, which would encourage the growth of wheat there again, and make it quite as profitable to them as dairying. At the same time, our New York dealers would go over and buy their cheese and ship it direct by way of New York, and save the carrying to our own State. As matters now stand, their cheese must go out by the way of the St. Lawrence on its way to our only good market, and we have no share in the handling."



Trotting and Betting.

To the Editor of THE CANADA FARMER:

SIR,—If your correspondent "Y. Z." had taken the trouble of reading over my first letter, he could not have fallen into the misconception that I was changing my opinion with regard to trotting horses. From the very beginning I have only spoken against fast trotters, the words in my first letter being these: "To believe that fast trotting denotes necessarily a good horse, is in my humble opinion a great mistake;" and this is still my firm, unaltered belief. Let me tell "Y. Z." at once that I am no theorizer upon trotting affairs. I have kept, for years, horses for trotting matches, and I have seen, over and over again, some well-shaped, powerful and fine actioned horse beaten by some very inferior animal. But I can perfectly well understand that anybody who has been brought up amongst American horsemen believes in fast trotting, the same as anybody bred and born in Constantinople believes in Mahomet, although he was a false proph.:

"Y. Z." tries to explain the inaptitude of the English thoroughbred for trotting matches, by saying, that for centuries they have only been bred for the purpose of galloping, and by bringing in the authority of Mr. Lawrence for stating that "they soon become weary, and their legs and feet are too delicate for the rude hammering of the speedy trot." Mr. Lawrence's work was published in 1807, and I do not know how trotting matters then stood in England; but at this moment thoroughbreds are considered there the horses *par excellence* for fast road work, although none of them would be called fast horses on this side of the Atlantic. The "Four in hand Club" drives nothing but horses that are thoroughbred or nearly so; almost every "hansom" has a thoroughbred between its shafts; every fast veterinary or other surgeon a "bit of blood" in his gig; in fact, it is generally allowed that nothing but blood will stand road work; and it is my humble opinion that, in a trotting match of seventy or eighty miles, some of those "bloods" would beat all the fast trotters of the American continent.

"Y. Z." asks, what do I think of the Morgan and French horses? All I can say is, that those I have seen do not come up to the standard of what I consider a thoroughly well-shaped horse. I find that their hocks are rather small, and that they have a general lack of muscle in their hind-quarters, although the latter defect is generally hidden by fat, which is not seldom mistaken for muscle. But I do not want "Y. Z." or anybody else to attach the least value to my judgment; I only want to ask him this question: What does he think can be the reason why the English aristocracy, who are so exceedingly fond of horses, and spend such enormous sums on their racers and hunters, should not keep trotters as well? The plain reason is—they found out, long ago, that these very fast trotters are not useful animals, and that the horse that can trot twelve or thirteen miles in an hour, and can do this for several hours with undiminished rattle, is the best horse to do the work well and pleasantly. If, on the other hand, you ask me what can be the reason why Americans are so fond of trotters? my answer would be this: The Anglo-Saxon (unhappily) likes betting; and nothing in the world is such a nice thing to bet upon as a horse race, with its "glorious uncertainties." To keep and train race horses in this country would be very difficult, if not quite impossible, on account of our long winters, the great expense of proper race courses, &c., &c. But the trotter can be trained all the year round, and on almost every road; he has, therefore, taken the place of the racer, and is, I conjecture, nothing else but a peg to hang wagers on.

"Y. Z." is perfectly right in saying that "the question at issue is not whether the English or Canadian taste is the proper one to cultivate; but the fact that trotting matches and fast trotters are held in

contempt by the best horsemen all over the world, and that they flourish only on American soil, ought to make the Canadian farmer ponder a little, and consider whether 't might not just be possible, that in this instance, at least, he is on the wrong track in following cousin Jonathan. X.

TAXES ON UNPATENTED LANDS. A "Subscriber" asks if "back taxes can be collected on improved unpatented lands." We believe that the fact of the lands being unpatented makes no difference in regard to the taxes, and the tenant in possession is therefore liable for them.

COTSWOLD OR LEICESTER BUCK WANTED.—Mr. John Poole, of South Crossy, wishes to know where he can procure one or two well-bred shearling Cotswold or Leicester bucks, and the price. Any person having such to dispose of may communicate directly with Mr. Poole, but not through this journal, as we cannot be expected to insert gratuitously the advertisements of such parties.

MICHIGAN SUBSOIL PLOUGH.—E. J., from Culross, enquires whether the Michigan subsoil plough is calculated to do its work efficiently, and for what kind of crops it is best adapted. We believe it to be a thoroughly good implement, and that it will prepare the soil for any crop that may be required. It answers the double purpose of partially draining the land, and furnishing a deep bed of loose earth in which the roots can spread. He also enquires "when the Guelph fair for next month will be held." The Guelph cattle market is held on the first Wednesday in each month. If our correspondent refers to the Fall Agricultural Exhibition, he can obtain the information from the Secretaries of either the South Wellington or Guelph Societies. See list in our issue of July 1st.

The Canada Farmer.

TORONTO, CANADA, SEPT. 2, 1867.

Mr. Willard's Address.

We devote a large amount of space in our present issue to the above address, the publication of which was unanimously requested by the Convention before which it was delivered, and the perusal of which cannot fail to prove interesting and instructive to all our readers who are concerned in dairy matters. It was a happy thought of the promoters of the convention to invite Mr. Willard; and the prompt, cordial manner in which that gentleman accepted the invitation tendered him was very gratifying. Such utterances as those at the outset of his address, do honor to the heads and hearts of intelligent Americans, and tend to strengthen that bond of essential unity which holds together the two greatest nations of the earth,—a bond, we trust, never to be broken, or even weakened. The mingling of Americans and Canadians at agricultural exhibitions, fruit-growers' meetings, cheese conventions, and like gatherings, must promote friendliness and good feeling, as well as conduce to the advancement of the particular interests they are specially called to promote.

No word of ours is necessary, we are persuaded, to secure for Mr. Willard a respectful and attentive hearing through the columns of the CANADA FARMER. From aidental references to him, and quotations from his addresses and writings, which have appeared in our columns, if from no other source, our readers already know how thoroughly competent he is to deal with a subject which has become a specialty, if not a hobby, with him. Mr. Willard is undoubtedly the foremost man as to dairy matters in the United States. A college graduate, and yet a practical farmer and dairyman, he is a noble representative of a large and increasing class in the United States, who

believe that agriculture and literature are compatible and congenial pursuits, and who are doing a vast deal to elevate country life into respectability and attractiveness. Under the influence of such examples, the disposition to run away from the proy drudgeries of the farm, as many deem them, and to overstock the professions, is far less prevalent in the United States than in this country. Every visit we make across the lines, deepens the impression that agriculture with our American cousins is a rising interest, not only in its commercial importance, but as to its position socially. We are constantly meeting with surprising and educated farmers, men who can either plough or pen with equal facility, and who appreciate the real dignity and eminence of that calling, whose every manipulation affords food for science. We hope to see this class of farmers increase and multiply in our own land, and all the world over. If they do, they will replenish the earth.

The details as to English modes of cheese-making will be no news to many of our readers, though not a few are wholly unacquainted with them, and will, therefore, peruse them with interested curiosity, while all will read with pleasure the description of the Royal farm and dairy, in the management of which our model Queen and her late lamented consort have set so worthy an example to the entire realm, and done so much to foster and encourage practical agriculture, appreciating the declaration of Holy Writ: "The profit of the earth is for all; even the king himself is served by the fruit of the field." Our factory-men who are newly embarked in the business of cheese-making, will do well to heed the counsels tendered them in Mr. Willard's address, especially on the subject of scrupulous cleanliness. An eminent horticulturist once remarked, that if he had a call to preach on gardening, he should take as his text, "Stir the soil." In like manner, if one had a call to preach on dairying, the most appropriate text would be "be ye clean." More care in this respect will be sharply inculcated in the stern school of experience, if we do not hearken in time to the voice of wisdom, and rigidly cleanse everything concerned in the operations of the dairy. The suggestions as to the marketing of cheese are also very valuable, and we are persuaded that, as the dairy interest of Canada swells, in magnitude, we shall find it absolutely necessary to take steps for the regulation and control of sales, in order to obviate speculation and prevent loss. With a wise foresight, the American dairymen sent Mr. Willard to England, to establish lines of communication, open up channels of trustworthy information, and secure prompt agencies. We shall be blind to our true interest unless we do likewise. The sooner this important matter is attended to, the better will it be for the branch of commerce specially concerned. Should a "penny-wise pound-foolish" policy prevail in reference to this measure, our dairymen, we venture to predict will live to repent it.

THE HARVEST.—The accounts we get from all parts of the country in regard to the crops are most satisfactory, and indicate that the harvest of 1867 is one of more than average abundance. Here and there complaints are made of early wet, late drought, and attacks of mildew, but these cases are quite exceptional, and cannot affect the general result. Splendid weather for harvesting has prevailed almost universally, and grain has been got in without any damage from rain. Until threshing becomes general, it is too early to speculate as to the yield per acre, but it will probably turn out to be comparatively good; not, indeed, what such a season ought to have produced with better tillage, but all that we have any right to expect considering the condition of our farming lands, and the culture given them. We may anticipate a good season of business, and a prosperous time generally, judging of things by the harvest standard—a pretty correct one most years.

Literary Notices.

THE NEW DOMINION MONTHLY. Montreal. John Dougall & Son. One dollar per annum, in advance; single copies ten cents. A magazine of literature, science, and art.—We have received the first number of this new publication, and cheerfully commend it to the attention of our readers. Its sixty-four pages are filled with useful reading, chiefly selected from the best periodicals of the day. It also contains two pieces of music. Its size and shape are convenient for binding, and 768 pages of reading matter will make two respectable-looking volumes every year.

By reference to our advertising columns, it will be seen that special advantages are offered to canvassers for this new periodical.

We notice in this first issue one or two things not quite to our liking. Thus in the leading article on "The Dominion of Canada," we are told that the new nation "starts into existence almost full-grown, without imbruing her hands in the blood of her parent in order to get free." Now the object of Confederation, as we understand it, was not so much "to get free" as to get strong and consolidated. The language used seems to imply that we have become relieved from some pressure upon our liberties, either as respects our relation to Britain or our internal condition—that we have secured a peaceful revolution of some sort. Beyond the control of local affairs, which is now held by each Province, we know of no change in our political condition. We have certainly sought no independence of Britain such as was obtained by the adjacent Republic "by imbruing her hands in the blood of her parent." Canadian Confederation has nothing about it akin to American Independence. These colonies are as much as ever, and it is to be hoped always will be, a part and parcel of the British Empire. As such, they enjoy, and long have done, every essential element of true freedom.

In an article on "Montreal in the olden time," we read: "The first Sabbath School in Montreal was gathered in 1816, by Miss Lucy Hodge, afterwards Rev. Mrs. Wilkes. It is neither usual nor proper to apply the prefix "Rev." to any ladies except such of the modern strong-minded as have taken to lecturing and preaching in public. The Woman's Rights movement in the United States has, we believe, produced a crop of Rev. ladies, but in this country we have, as yet, only Rev. gentlemen.

We make these few slight strictures by no means with a view to disparage the undertaking; on the contrary, we would have it understood from the very candour of our remarks, that the commendation we give is not a matter of course, but an honest and hearty expression of opinion and good will. We have long thought that it was incumbent on us in this country to have a good literary magazine of our own, and no more auspicious time than the present could be selected for its inauguration.

THE ADVANCE: a new national religious paper, to be published weekly, from the first of September onward, in the city of Chicago.—We have received the prospectus of this projected journal, and judge from its tenor that "The Advance" will be at the West very much what the *Independent* is at the East, an ably-conducted periodical, aiming to furnish intelligence on all subjects, and to look at everything from a religious stand-point. Like its Eastern prototype, it is to "contain the latest market reports and able discussions on financial subjects, such as will make it a necessity to business men in all parts of the country." Many of our leading farmers and men of business have a curiosity to know what is going on in that great West of which Chicago is the metropolis and centre, and all such cannot do better than subscribe for the above-named journal. The subscription price is \$2.50, American money, in advance. Address "The Advance Company," P. O. Drawer, 6374, Chicago, Ill.

Agricultural Intelligence.

Opening of Agricultural Hall, Pickering.

To the Editor of THE CANADA FARMER :

SIR.—I was present by invitation (July 23) at the opening of the new hall and exhibition grounds erected by the Township of Pickering Agricultural Society, in the pleasant and improving village of Brougham, County of Ontario. Mr. Haight kindly drove me through a part of the township, pointing out its agricultural features and practices. The formal proceedings commenced in the afternoon, at three o'clock. J. Wixon, jr., Esq., President of the Society, occupied the chair, who, after some suitable and preliminary observations, called upon me to deliver the introductory address. After this the following gentlemen were requested to address the meeting, which they did with excellent effect:—Dr. Tucker, T. N. Gibbs, Esq., late member for the division, Dr. McGill, T. P. White, Esq., and the Hon. George Brown. Among the subjects treated of by the various speakers the following may be specified: The best means of preventing the deterioration of the soil; importance and effects of clean and thorough culture, draining, and the improvement of stock. Dr. Tucker made some happy remarks on the importance of neatness, flowers, and a little ornamental planting around our new and improved farm homesteads, and was followed in a similar strain by Dr. McGill. Messrs. Gibbs and Brown made some very seasonable remarks on the education of farmers, with especial reference to their pursuits, and pointed out the dangers young men in the country often run by leaving the healthful and, when guided by intelligence and perseverance, generally profitable pursuits of their fathers, for the risks and dangers of the already too crowded professions in towns. Mr. Brown also made some excellent remarks on the value of improved farm implements, and mentioned one or two novelties he was about trying, that promised to be of great advantage to the farmers of Canada. The suggestion that members of agricultural associations form themselves into a sort of mutual improvement society, and hold regular meetings for reading papers, comparing results of different systems of practice, &c., was very favourably received by the meeting, and I hope to hear next winter that it has been reduced by the Pickering Society to practice. The intervals between the speaking were pleasantly filled by some very good music by a small brass band. The utmost harmony pervaded both speakers and hearers, notwithstanding the keen political canvassing that was going on in the riding. It should always be so: for agriculture and the blessings which it brings,—"our daily bread,"—belong exclusively to no party or creed, but are the gifts of Him (through the honest and intelligent industry of the husbandman) who causes His sun to shine and rains to descend alike upon all. After a few appropriate remarks by the chairman, by way of summing up, the interesting proceedings were closed by passing him and the speakers a cordial vote of thanks, and the band playing the national anthem. I may just add that the new structure, which is 50 feet x 105 feet, appears substantially built, and will afford ample accommodation for the various articles usually brought for competition. It is surrounded by four acres of nice level land, well seeded down and fenced; and the chief things now wanting are a few good shade trees, with a little ornamental planting. The society, I understand, contemplates adding another two acres, which would afford ample space. GEO. BUCKLAND.

Торонто, Август, 1867.

CROPS IN NOVA SCOTIA.—The *Nova Scotia Journal of Agriculture* reports favorably of most of the crops in that province. Hay crops have been remarkably heavy. Considerable damage, however, was inflicted by a violent storm which visited the country on the 3rd of August. Many fruit trees were seriously injured, besides being stripped of their produce; Indian corn also suffered much; but the smaller grains appear to have escaped unhurt.

Harvest Report from East Zorra.

To the Editor of THE CANADA FARMER :

SIR.—In my last communication, dated near the 1st of July, I stated that dry weather had set in, crops were suffering in consequence, and unless it rained soon spring grain could not be good. It has rained frequently since that time, but the showers have been very partial. A few miles south of Woodstock, I have been told, it has not laid the dust for nine weeks, and that there is no pasture, and scarcely a green thing left but corn, which some have begun to feed to their cows. In this township we have had several fine showers; in one instance it rained almost in torrents, taking a course from west to east, and so distinct was the edge of the shower that farmers drew grain in heat and sunshine, within a few rods of a storm that caused the water to flow in the ditches, and lie upon the ground in puddles. Notwithstanding the fine rain, our crops are light and have nearly all matured too early to yield well. Peas will do the best. Barley was both thin and short, and spring wheat extremely so; I should judge the average to be about twelve bushels per acre. Spring wheat being sown late, suffered less from the midge than fall wheat. The midge-proof varieties will yield pretty well, except where injured by rust. There is a great abundance of hay, housed in good condition. Turnips, carrots and mangolds look well; but potatoes, except in rich moist land, will be very small, as the vines are already dying either from drought or disease. On account of the scarcity of water and pasture, the yield of milk is rapidly decreasing in quantity, but, of course, the quality is better, and the decrease in cheese is not in proportion to the loss of milk. The high price paid for cheese the last two years, has created almost a mania in that business, in some parts of this county. In one neighbourhood I can count ten or twelve factories almost in sight of each other, and preparations for further extension next season. I said factories, but I should explain that some only make up the milk of their own dairies, others take milk from their near neighbours, and others gather from a long distance.

The Strathallan Factory, when I visited it in July, was making up 8,000 lbs. of milk per day, and had nearly all their stock on hand. Adams' Factory in East Nissouri received 22,000 lbs. per day, and is supposed to be the largest factory in Canada. There is a great amount of cheese on hand at present, and the question of sale is becoming serious. The makers are all right at any price, but the patrons hesitate about taking six cents per lb. as their share, after getting ten or more last year; but it is evident they must do that or give up cheese-making—demand and supply will adjust themselves to existing circumstances.

We expect to have a large representation of dairy products at our fall exhibition at Woodstock on the 1st of October. The Directors of the North Riding Agricultural Society have offered \$50 as special premiums for cheese and butter suitable for exportation. Dealers would do well to be present and examine the samples sent; then they would know where to find the stock. R. W. S.
East Zorra, Aug. 20, 1867.

THE COUNTY OF RENFREW AGRICULTURAL EXHIBITION, for 1867, will be held at the village of Renfrew on Wednesday, 2nd October.

HIGHLAND AND AGRICULTURAL SOCIETY'S SHOW.—Our English exchanges contain reports of the Highland and Agricultural Society's Show, which was held this year in Glasgow, and was, we are informed, eminently successful. Cattle, excluded from last year's exhibition on account of rinderpest, were again exhibited; and all the classes, especially those for which Scotland has long been famous—including Ayrshires, Polled and Highland breeds—were well represented. The show of sheep, comprising Leicester and Cheviots principally, was equal to that of any previous year. In swine a great improvement is reported as compared with former shows. Poultry and dairy produce of excellent quality formed part of the attractions of the exhibition; and a large collection of implements and machines, well displayed under cover in appropriate sheds, served to show the rapid advances that manufacturers are making in this important department, and furnished an index also of the increased extent to which machinery is being employed in agriculture.

Poultry Yard.

Standard of Excellence in Exhibition Poultry.

In anticipation of the approaching exhibition, we publish, for the benefit of our readers who are interested in poultry matters, and who may not have access to the authorities on the subject, some extracts from the Standard of Excellence issued by the English Poultry Club. The original publication comprises a succinct description of the points of excellence in all the principal varieties of poultry, but we have space only for those that are more commonly known amongst ourselves, and in the present issue can only include one or two of these. The remaining varieties that have been introduced into Canada will be similarly described, from the same authority, in future issues. We commence with—

COCHINS

GENERAL SHAPE—COCK.

Comb—Single, fine, rather small, perfectly straight and upright, with well defined serrations, and quite free from side sprigs.
Neck—Curved, stout at the base and tapering to the point.
Head—Small for the size of the bird and carried rather forward.
Eye—Very bright and clear.
Deaf ear—Large and pendent.
Wattles—Large, well rounded on the lower edge.
Neck—Hackle very full and abundant, the lower part reaching well on to the back, so as to produce a gradual slant from near the head to the middle of the back.
Back—Broad, with a gentle rise from the middle to the tail; saddle feathers very abundant.
Wings—Very small, the primaries doubled well under the secondaries, so as to be quite out of sight when the wing is closed.
Tail—Very small; the curled feathers numerous, broad, glossy, and soft, the whole tail forming a small hunch, carried rather horizontally than upright.
Breast—Deep, broad and full.
Thighs—Very large and strong, plentifully covered with perfectly soft feathers, which on the lower part should be curved inward round the hock, so as nearly to hide the joint from view; Falcon or Vulture hocks, that is those with hard, stiff feathers projecting in a straight line beyond the joint, are objectionable, but not a disqualification.
Fluff—Very abundant and soft, covering the hind parts, and standing out about the thighs.
Legs—Rather short, very thick and bony, wide apart, well feathered on the outside to the toes.
Toes—Straight and strong, the outer and middle toes being well feathered.
Carriage—Not so upright as other breeds, with a contented, intelligent appearance.

GENERAL SHAPE—HEN.

Comb—Single, very small, fine, low in front, erect and perfectly straight; with small, well defined serrations.
Head—Small, curved and tapering.
Eye—Very small, neat and taper.
Deaf ear—Rather large.
Wattles—Small, neatly rounded on the lower edge.
Neck—Short; carried forward, the lower part very full and broad, the feathers reaching well on to the back.
Back—Broad, with abundance of soft feathers rising from the middle of the back to the tail.
Wings—Very small; primaries doubled well under the secondaries, so as to be quite out of sight when the wing is closed; bow of the wings neatly covered by the breast feathers, and the points sunk well into the full.
Tail—Very short and small, carried horizontally, and almost hidden in soft feathers.
Breast—Broad and full; carried low.
Thighs—Large; abundantly covered with soft, fluffy feathers, curving inward round the hock, so as to nearly hide the joint from view; Vulture or Falcon hocks are objectionable, but not a disqualification.
Fluff—Very soft and abundant, covering the hind parts, and standing out about the thighs, giving the bird a very deep and broad appearance behind.
Legs—Short, thick, and bony; standing wide apart, and well feathered on the outside to the toes.
Toes—Strong and straight, the outer and middle toes well feathered.
Carriage—Low, with a contented, intelligent appearance.

BUFF COCHINS.

COLOR OF COCK.

Comb, Face, Deaf-ear and Wattles—Brilliant red.
Head—Rich, clear buff.
Hackle, Back, Wings and Saddle—Rich, deep, golden buff; the more uniform and even in color the better; quite free from mottling on the wing.
Breast, Thighs, and Fluff—Uniform, clear, deep buff, as free from mottling or shading as possible.
Tail—Rich, dark chestnut, or bronzy chestnut mixed with black.
Dark chestnut preferable.
Legs—Bright yellow; feathers clear, deep buff.

COLOR OF HEN.

Comb, Face, Deaf-ear and Wattles—Brilliant red.
Plumage—Uniform clear, deep buff throughout, the more uniformly clear and free from mottling or shading the better. A clear hackle preferred, but a slight marking at the end of the feathers of the neck not a disqualification.
Legs—Bright yellow, with feathers same color as body feathers.

VALUE OF POINTS IN BUFF COCHINS.

Table with 2 columns: Point Name and Value. Points include Size, Color, Head and Comb, Carriage of Wings, Legs, Fluff, General Symmetry, and Condition.

DISQUALIFICATION.

Birds not matching in the pen, or with primary wing feathers twisted or turned outside the wing, twisted combs, crooked backs, birds without feathers on the legs, or legs of any other color than yellow.

BRAHMA

GENERAL SHAPE—COCK

Comb—Very strong, taper, and well curved.
Neck—Very strong, taper, and well curved.
Head—Small and slender.
Eye—Prominent and bright.
Deaf ear—Large and pendent.
Wattles—Small, well rounded on the lower edge.
Neck—Long, neatly curved, slender near the head, the juncture very distinct, hackle full and abundant, flowing well over the shoulders.
Breast—Very full, broad, and round, carried well forward.
Back—Short, broad, flat between the shoulders, saddle feathers very abundant.
Wings—Small, the primaries doubled well under the secondaries, the points covered by the saddle feathers.
Tail—Small, carried very upright, the higher feathers spreading out laterally.
Tail Coverts—Broad, very abundant, soft, and curved over the tail.
Thighs—Very large and strong, abundantly covered with very soft, fluffy feathers, curving inward round the hock so as to hide the joint from view. Vulture hocks are objectionable, but not a disqualification.
Fluff—Very abundant and soft, covering the hind parts and standing out about the thighs, giving the bird a very broad and deep appearance behind.
Legs—Rather short, strong and bony, standing well apart, very abundantly feathered down the outside to the end of the toes.
Toes—Straight and strong, the outer and middle toe being abundantly feathered.
Carriage—Very upright and strutting.

GENERAL SHAPE—HEN.

Comb—Very small, fine, low in front, erect and perfectly straight; with small, well defined serrations.
Head—Small and slender.
Eye—Prominent and bright.
Deaf ear—Large and pendent.
Wattles—Small, rounded on the lower edge.
Neck—Rather short, neatly curved, slender near the head, the juncture very distinct, full and broad in the lower part; the feathers reaching well on to the shoulders.
Breast—Very deep, round, broad and prominent.
Back—Broad and short; the feathers of the neck reaching to be-tween the shoulders, and abundance of soft, broad feathers rising to the tail.
Wings—Small, the bow covered by the breast feathers, the primaries doubled well under the secondaries, the points of the wings clipped well into the abundance of soft feathers and full.
Tail—Small, very upright, almost buried in the soft rump feathers.
Thighs—Strong and well covered with very soft feathers, curving round the hock so as to hide the joint from view; Vulture hocks are objectionable, but not a disqualification.
Fluff—Very abundant and soft, standing out about the hind part and thighs, giving the bird a very broad and deep appearance behind.
Legs—Short, very strong, wide apart, abundantly feathered on the outside to the toes.
Toes—Straight and strong, the outer and middle toe being well feathered.
Carriage—Low in comparison to the cock.

POINTS IN BRAHMA POULTRY.

Table with 2 columns: Point Name and Value. Points include Size, Color, Head and Comb, Wings, Legs and featherings of ditto, Fluff, Symmetry, and Condition.

DISQUALIFICATIONS.

Birds not matching in the pen, combs not uniform in the pen, or falling over to one side, crooked backs, legs not feathered to the toes, or of any other color except yellow, or dusky yellow.

SALT FOR FOWLS.—With respect to the question of salt for fowls, it is quite certain that any large quantity of it is injurious, often causing loss of feathers; but I have long given it in moderation with decided benefit—just as much as to season the soft food of the birds to my own taste. In such measure I am convinced that chickens grow better, and make more healthy flesh, and that fowls for exhibition come into better condition and keep in better health. —Nemo, in Cottage Gardener.

MAKING POULTRY PROFITABLE.—The place to which young chickens retire ought to have a dry floor, and be kept scrupulously clean, and as the floor is the coldest part of the room, their roosting ought not to be more than twelve inches high, and to be slanting, which will keep the warm air in the roost. Setting hens can be cured by putting water in a vessel, to the depth of one inch, putting the hen into and covering the top of the vessel for about twenty-four hours. The vessel should be deep enough to allow the fowl to stand up. This is the best remedy we have ever tried. Earth-worms are greatly relished by confined fowls. Take a spade once a day and turn over the ground for your hens. They will soon run after you when they see you with the spade, and will amply reward you for the extra trouble to accommodate them by an increased supply of eggs.

Entomology.

The Barley Joint Worm.

In our issue of Aug. 1st we gave some account of the appearance of this insect at Grimsby, and expressed our doubts as to whether the yellow-legged barley-fly (Eurytoma fulvipes, Fitch), obtained from the galls, was the author of the mischief, and our enemy, or a parasite upon the worm, and our friend. We have since received communications from Mr. Benjamin D. Walsh, (of Rock Island, Illinois, U. S.), editor of the Practical Entomologist, and Mr. J. Pettit, of Grimsby, which effectually decide the matter; and we are now able to announce to our readers the settlement of an important question which has been in doubt for some years. Mr. Walsh writes as follows:—

"I notice in your issue of Aug. 1st an article on the barley joint worm, in which the question is discussed whether it is the Chalcis fly, bred by so many entomologists from these barley galls, that originates these same galls, or whether the galls are produced by some unknown gall-gnat, upon which the Chalcis fly is parasitic.

"Last autumn, through the kindness of Mr. Pettit, of Grimsby, C. W., I was supplied with abundance of the dry barley galls, from which I bred in June, 1867, large numbers of the Chalcis flies supposed by Dr. Fitch to originate these galls, and referred by him to the genus Eurytoma. I also bred in the same month many specimens, both male and female, of a very distinct Chalcis fly, belonging to the Pteromalus group, which is parasitic on the so-called Eurytoma, and the larvæ of which I had found preying externally on that of the so-called Eurytoma in the preceding autumn. This parasite appears to be the same as the one mentioned in Dr. Harris's book, (p. 556), as having been bred by Dr. Fitch from these barley galls.

"At my request, Mr. Pettit also furnished me, early in June, 1867, with a copious supply of the green barley galls. These I carefully examined, and although I found therein great numbers about half grown, of the same larvæ, which swarms fully grown in the dry barley galls in the autumn, and which is undoubtedly that of the so-called Eurytoma, yet on the closest examination I could not discover a single larvæ belonging to the gall-gnat (Cecidomyia) family, or to any other gall-producing family, nor any signs of the former presence of such larvæ. I am quite sure, therefore, that Dr. Fitch's Eurytoma is not a parasite, but the bona fide author of the gall. Otherwise, if it were really a parasite, I must certainly have discovered, at this early period of the year, a few specimens of the larvæ upon which it was parasitic, or at all events some traces of their handiwork.

"I may add here that the insect bred from these barley galls, and referred by Dr. Fitch to the genus Eurytoma, differs generically from all the numerous species of the Eurytoma group, which I have ascertained to be parasitic on other insects, and cannot, I think, be referred with any propriety to the genus Eurytoma, although it undoubtedly belongs to the Eurytoma group. But this matter, though of the highest scientific interest, is of no manner of practical importance.

"The point of real practical moment to be deduced from the above investigations is, that farmers where barley is infested by these galls should, as Dr. Fitch recommends, burn or otherwise destroy as many of the galls as possible, whether they are left in the field among the stubble, or carried into the barn along with the crop. This can be done any time after the harvest, and before the following June; but the sooner the better, as some few of the obnoxious Chalcis flies make their way out of the galls the same year.

"When you say, Mr. Editor, that you found larvæ in July in these barley-galls 'with a V-shaped breast-bone,' which must, therefore, have belonged to the

gall-gnat family, you were probably misled by the jaws of the larva of the gall-making *Chalcis* fly meeting together in repose in the form of a Y. If you had watched one of these larvæ closely for an hour or two, you would probably have seen him open his jaws and shut them together again; whereas, the two prongs of the 'breast-bone,' whether it be Y-shaped or V-shaped, in the larva of every gall-gnat are soldered solidly together, and are absolutely incapable of the least motion.

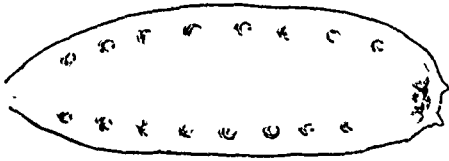


FIG. 1.

"The sum and substance of the above is, that Dr. Fitch was right and I was wrong in the matter of these barley galls. It is true that I never asserted positively that Dr. Fitch was wrong, but as I have thrown doubt upon his theory, I think it proper to take an early opportunity of acknowledging my error. I write for truth, and not for victory, and never claimed to be infallible."

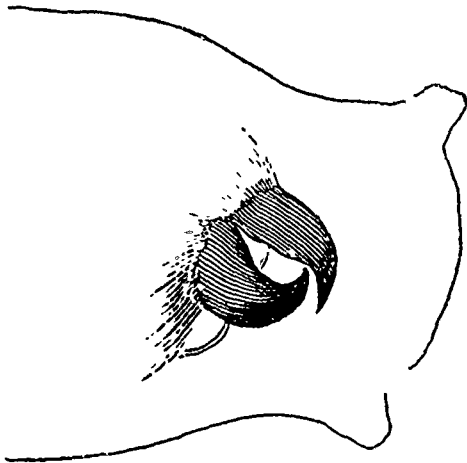


FIG. 2.

The foregoing communication, with its straightforward acknowledgment of a previous wrong conjecture, is exceedingly valuable as settling once and for all that the insect in question is our enemy, and therefore should be destroyed whenever found in our barley fields. Mr. Walsh's clear statement of the facts of the case renders it unnecessary for us to add anything further as to the nature of the insect.

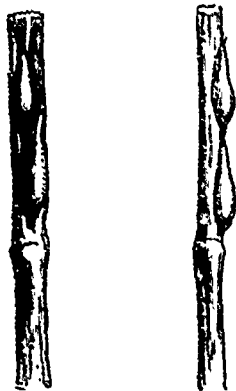


FIG. 3.

FIG. 4.

With regard to what we supposed to be the 'V-shaped breast-bone' of the worm, we have also to acknowledge a mistake. Before receiving Mr. Walsh's letter, we had an opportunity, through the kindness of a friend, who is a thorough microscopist, of making a careful examination of the insect with his instrument. With it we at once perceived that what we took to be the "breast-bone" was the mouth of the worm, the dark lines being two very strong and sharp teeth. Our friend has furnished us with the annexed drawings from the microscope,

which will afford a good idea of the worm as it appears when highly magnified. Fig. 1, shows the shape of the grub, somewhat reduced from the apparent size under the microscope, as seen with an inch objective, which magnifies about thirty times linear, ordinarily called one hundred superficial. There is no trace of legs; eight spiracles, or breathing-holes, on each side; two prominences in front (? for feelers); very strong muscles of the two teeth, which are unusually sharp-pointed. Fig. 2, shows the teeth as seen with a quarter-inch objective, which magnifies about 250 times, or 1000 superficial. Figs. 3 and 4 represent a stalk of barley (natural size) with two of the swellings, or galls, produced by the worm; Fig. 3, as seen in front, Fig. 4, sideways. These occurred on the third joint from the root, and on the part of the straw that should be destroyed.

In our former remarks upon this insect we requested our correspondent to describe as fully as he could the operations of the flies that he witnessed, and to tell us whether they deposited their eggs in healthy straw, or in that which was already diseased and swollen. Mr. J. Pettit has very kindly sent us a full and clear account of the process of ovipositing, which would prove conclusively the noxious character of the flies, even had we not Mr. Walsh's testimony to the same effect. He writes as follows:—"The first intimation I had of these insects infesting the barley here was last year, when I found the galls in the growing crop, and collected a large quantity to breed specimens from. About the 8th of June of the present year the perfect insects began to make their way out of the galls, and proved to be all of one species, *Eurytoma fulvipes*, Fitch,* from which I drew the inference that they could not be parasites of any *Cecidomyioides* insect, of which the straw did not produce a single specimen. Desirous of knowing more of their habits, I watched the growing barley, and on the 10th of June found them actively at work ovipositing in the then healthy stalks of the plant. Before commencing operations they walk leisurely up one side of the plant as far as the last leaf, and then down the other, apparently to make sure that it has not already been oviposited in. Head downward, they then begin by bending the abdomen downward, and placing the tip of the ovipositor on the straw at right angles with the body, when the abdomen resumes its natural position, and the ovipositor is gradually worked into the plant to its full extent.

"With the aid of a good lens, and by pulling up the plants on which they were at work (which did not appear to disconcert them in the least), I could view the whole operation, which, in some cases, was accomplished in a few minutes, and in others was the work of an hour or two. When a puncture was completed they usually backed up a little and viewed it for a few seconds, and then apparently satisfied, moved to one side and commenced another. As the puncture made by these insects in the straw were as plainly apparent under the glass as a post-hole to the ordinary vision, I felt, perfectly satisfied that they were not made in any previously formed galls, of which there was not the slightest appearance."

The Hop Aphis.

MR. ANGUS SHAW, of Lake Side, county of Oxford, has sent us some leaves from his hop-yard, which are very badly affected with the *Aphis*—that plague of the hop grower. He states that the hop-yards, not only in his own neighborhood, but also in Middlesex, are generally affected with this pest; we have ourselves also seen its attacks in the Township of Toronto.

* It is a strange oversight on the part of Dr. Fitch, that he names the "yellow legged barley fly" *E. fulvipes* when first speaking of it on page 164 of his 7th report of the noxious, etc., insects of N. Y., but on page 199, he names it *E. flavipes* when proceeding to describe it. As he refers to both places in his index under the former name, we presume it is the one he means should stand.

In our last issue we gave an account of the *Aphis* that infests the leaves of the cherry and pear; as the remarks we made then respecting the habits of this insect apply equally well to the one before us, it is needless to repeat them here. The hop *aphis* differs from that of the cherry only in being entirely green; the injury, however, which it inflicts is immeasurably greater, as the crop at stake is of so much higher value, and is cultivated on so much larger a scale.

The remedies for this grievous pest are of two kinds, natural and artificial; and of these the checks provided by nature are ordinarily wont to be the most efficacious.



FIG. 1.

FIG. 2.

Natural remedies,—(1) The various species of lady-birds or lady-bugs, as they are termed—a beetle that is familiar to every child. This insect lives upon aphides in both its larval and perfect stages, devouring infinite numbers, and always appearing wherever its food is to be found. Upwards of thirty different species of this family of insects are known to inhabit Canada. As it is highly important that all should recognize these friends of mankind, and not destroy the innocent with the guilty, we annex cuts of one of the most common species, the nine-spotted lady-bird (*Coccinella 9-notata*, Herbert). Fig. 1 represents the larva, which is of a bluish-grey color, spotted with reddish yellow; Fig. 2, the perfect insect, which resembles a *plispea* in shape, and is yellow or reddish, spotted with black.



FIG. 3.



FIG. 4.

2. The lace-winged, or golden-eyed fly (*Chrysopa*) Fig. 5, so-called from some of its most striking characteristics. This fly has four delicate transparent white wings, like bits of fine lace, bright golden eyes, and a lovely green body; but though so pretty to look at, it is most horrible to handle, the odour it emits being of the most sickening and disgusting character. Our Canadian species certainly possess this offensive smell, as we know from experience, though, according to Mr. Walsh, those in the Western States are free from it. The habits of the larvæ (Fig. 3) are similar to those of the lady-bird, and they are generally to be found on the leaves of the hop where the *aphis* is numerous. Its eggs (Fig. 4) are attached to the ends of long threads affixed to leaves by the female, probably in order to be more free from danger.

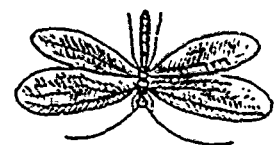


FIG. 5.

3. The next family of insects that preys upon the *aphis*, is that of the *Syrphus* flies. These are two-winged insects of variegated colours; it is only, however, in the larval state that they wage war on the plant-lice. The parent fly deposits her eggs singly on affected leaves, so that the young are hatched in the midst of their food; these are footless grubs, destitute of eyes, and with the mouth provided with a very peculiar organ of suction. They move slowly along the surface of a leaf until they meet an *aphis*, which is no sooner touched than it is transfixed, and speedily sucked perfectly dry. Other enemies

of aphides that might be mentioned are ichneumons, some kinds of dragon-flies, wasps, etc.

Artificial remedies.—1. Dusting the affected leaves with sulphur. 2. Watering the under side of the leaves (which may be done with a large syringe, or garden engine), with a mixture of strong soap-suds, salt, and saltpetre, so that a brine is made about half as strong as common beef pickle, to which is added one pound of copperas to every five gallons of liquid. 3. A similar application of a strong decoction of tobacco, one pound being boiled in a gallon of water, —the stems and other refuse parts can be cheaply procured at the tobacco factories, and answer the purpose quite as well as that to be purchased in the shops.

FIR-TREE CATERPILLARS.—E. R. M., of Halloway, County of Hastings, whose communication respecting some caterpillars on the balsam fir we published, together with remarks of our own, in our issue of Aug. 1st, has recently sent us some of the cocoons that he found about the trees. They are about a quarter of an inch long, oval in form, and composed of silk so strongly glued together as to form a tough brown envelope. They are undoubtedly the pupæ of a saw-fly, and probably of a *Lophyrus*, as we conjectured. One or two have hatched out, and doubtless belonged to a former brood, while a few of the others have a small round hole in them made by a parasite, the destroyer of the original inhabitant. When the fly comes out, which it may not do now till next year, we shall be able to determine its species.

APPLE-TREE CATERPILLARS—THE FALL WEB-WORM.—The above correspondent has also sent us for identification several caterpillars which, he states, "are now operating upon the leaves of apple-trees. They appear upon a few trees in this vicinity in colonies, which build a web-tent about the scene of their operations; within this tent single threads are extended in every direction, forming narrow-gauge roads for its occupants. They consume the softer portions of the leaves, leaving only a network of veins, and destroy all that comes within their fatal net. Orchardists would do well to look for them, and cut off their nests and burn them upon their first appearance." These caterpillars are what are commonly known in the neighboring States as the fall web-worm (*Hyphantria textor*, Harris); they have not, that we are aware, been before recorded as occurring in this country, but this year we have found them in our own garden, more than a hundred miles to the west of our correspondent. The caterpillars vary in their general color from black to blue and greenish; they have a broad blackish stripe on the back, in which, when nearly full grown, a blue line appears. On each segment (except the two at each extremity, which have fewer), there are twelve little warts, from which thin bundles of whitish hairs proceed, viz., four rust yellow or orange on each side, two black ones in a line with them on the back, and a little in front and between these two smaller ones, also black at first, becoming rust yellow when the worm is older. The head, and the sixteen feet, are black. They spin large webs, and live in communities, as our correspondent has described. When full grown, they disperse, and spin their cocoons in crevices of the bark and other sheltered places. The moth appears early in the following summer, and is of a milk-white color, without any spots or other markings on the wings. The best remedy is to go round the trees and destroy the webs as soon as they appear. We should mention that they infest cherry as well as apple-trees. E. R. M. also inquires, "what insect cuts off apple leaves in *lots*, as he frequently finds shoots entirely denuded of their leaves, having only short bits of leaf-stalks to show where leaves once were." This is, probably, a "cut-worm," somewhat similar to that which cuts off young cabbages and other plants. The only way to discover the depredator is to visit the affected trees with a lantern at various hours of the night, and just at daybreak in the morning. There are many night-feeding caterpillars which retire to their hiding places when the early birds are about to rise and look for them.

Canadian Natural History.

Native Birds.

To the Editor of THE CANADA FARMER:

SIR,—You have doubtless seen a work entitled "The Sportsman and Naturalist in Canada," by Major W. Ross King, published by Hurst and Blackett, London, and concerning which I have a few observations to offer. As to the getting up of the work, nothing is left to be desired. The type is clear and excellent, the colored engravings good, though perhaps a little too highly tinted, the wood cuts first-rate, and the binding handsome and strong. In short, it would ornament any drawing-room table, and attract general notice. It is not my intention to criticise the whole of the work, which, indeed, I am not competent to do, even were I so inclined; and I am willing to make the general admission that the articles on mammalia and fishes are, I believe, allowed to be reliable and graphic. What I wish to direct your attention to, is the article on "Birds" (Chap. v). At the very outset Major King makes a blunder; he says:—"Though one might not unnaturally imagine that birds of every kind would enliven the vast tracts of wood clothing the face of the country, the Canadian forest slumbers in everlasting, and almost oppressive silence." Surely Major King can never have been in the woods during the months of April and May, for the air is then filled with melody, principally caused by the Warblers, of whom there are above forty species. The only possible way in which we can account for the "oppressive silence," is by supposing the major to be stone deaf. Again he says, alluding to the Scarlet Tanager, Baltimore Oriole, etc.: "In strange contrast with these bright and novel plumages appear (in Canada) the homely Chaffinch, Jay and Yellow Hammer, and many other home friends." If Major King be deaf, at any rate he is not blind, but on the contrary must possess a remarkably sharp pair of eyes, to have seen the Chaffinch and Yellow Hammer in our Canadian woods. Though my vision, thank God, is very good, I have not been so fortunate. As to the Jay, the Canadian species is distinct from the English bird, and the "many other home friends" are certainly not friends of mine out here, for I have not had the pleasure of meeting them. A little further on the Major writes: "It may not be out of place to mention the curious fact, that notwithstanding the presence of so many of our common birds in Canada, the ubiquitous Sparrow is unknown there." This is, no doubt, true; and in fact scarcely any of our British birds are found in Canada, the exceptions being the common Buzzard, the Jenny Wren, the Creeper, the Waxwing, (only an occasional visitant to England,) the Raven, the lesser Redpole, and perhaps one or two others. Several of our rare British birds are found here, such as the Lapland Bunting, the Cross-bill, the Shore-lark, the Mealy Redpole, the Pine Grosbeak, etc., but none of the common ones with the above exceptions, and perhaps one or two more. And even out of the above brief list two are not common, viz.: the Raven, and the Bohemian Waxwing. The writer is again at sea when he says (page 113) that "the yellow-winged Woodpecker is the largest of the family. The ivory-billed, black Woodpecker (*Picus pileatus*) certainly carrying off the palm in point of size. What species he means to particularize when he speaks of "the black and white Woodpecker," (since several have that colour), and "the grey Woodpecker," passes my comprehension. The epithets are far too vague. Do you not think, sir, that these errors disfigure the whole work? When one pays a guinea for a book, one has a right to expect common accuracy as to facts. Without the slightest wish to disparage Major King's valuable addition to our libraries, I think this "exposé" only due to the public, and I make it to obviate the dissemination of false ideas on the subject.

Toronto, Aug. 1867.

SCRUTATOR.

LYNX SHOT.—On Wednesday, Aug. 7th, a large lynx was shot three miles above Weston, by Mr. J. R. Evans. It was in a bush alongside the road; and, it need hardly be added, was the only one of its kind which has made its appearance in that section for years. It measured three feet long.

This is the second instance recorded during the present year, of the lynx being found in the settled districts.

HOW RABBITS MULTIPLY.—The following extract from the *Melbourne Argus* affords a notable example of the way in which the rabbit increases and multiplies on a favourable soil:—"Eight years ago fourteen rabbits were turned out on Mr. Austin's estate of Barwon Park. The number of their progeny shot last year on his estate was 11,253; and in spite of this destruction, and what goes on outside the estate, they have swarmed over the neighbouring country, and have been found at considerable distances around."

The Apiary.

How to Italianize an Apiary.

As many bee-keepers are purchasing Italian queens, it will not be amiss to consider the best method of Italianizing an apiary and keeping the stock pure. Particular attention should be paid to the stock into which the Italian queen has been successfully introduced. Care should be taken that it has plenty of honey and bees, and that it is wintered in a proper place, where it will neither be too warm nor too cold. It should be placed in some situation which is dark, dry and cool; for, if too warm, the bees will become much excited, and keep up a continual roaring; many of the bees will die, and your stock come out weak in the spring; the same results will also follow from being too cold; whereas it is desirable, in fact, almost necessary, that it should come out strong. As soon as spring opens it should be fed a little every day, to excite breeding. It should also be placed in a situation where it can have plenty of sun and be sheltered from the north and west winds, which will, with the feeding, promote the early production of drones, and long before drones appear in your black stocks you will have plenty in your Italian stock. As soon as the drones appear, the Italian stock may be divided by removing the Italian queen with one card of comb from the stock, and putting them into a new hive, which set in the place of the old stock, putting the old stock on a new stand. The bees in the old stock will at once start several queen cells; on the tenth day after dividing all the cells may be cut out, except one, and given to black stocks, first catching and destroying the queens. The black stocks will, in almost every case, receive the queen cell, and an Italian queen will be developed; there being no drones but Italian, the queen will mate with them and be pure. If there should not be queen cells enough to give to all the stocks, the queen may, as soon as the new stock has become sufficiently strong, be removed to some other stock, and allow the stock from which she is taken to start another lot of cells. By watching black stocks in which drones are breeding, as soon as they are capped over the cells may be shaved off with a sharp knife, which will destroy the larvæ, and the bees will drag them out; by so doing, black drones may be prevented from maturing to any great extent: while care should be taken to increase the breeding of Italian drones by placing drone combs near the centre of the hive in which the Italian queen is breeding. It will also be remembered that a pure queen that has mated with a common drone will produce just as pure drones as if she had mated with an Italian drone, though her working progeny may be half-breeds. She will, therefore, be just as valuable to stock an apiary with drones as if she were pure.



The Toronto Nurseries.

HORTICULTURE, as a science, occupies relatively the same position to agriculture as the fine arts do to the more material manufactures, and the progress of either is an index of the advancement of a country in prosperity and intelligence. When a prosperous business career crowns the life efforts of a merchant or manufacturer, the decoration of the homestead of his later years, and the birth-place of his children, occupies as much of his time as did his commercial transactions, when these were striving for the prominence to which they afterwards attained. It is at the same time to be observed that horticulture fails of encouragement until a degree of wealth is acquired that can properly sustain this love for the beautiful as displayed in the garden; and many years elapse from the first settlement of the country before this art secures that attention which, with proper facilities, all would gladly devote to it. This much by way of introduction to a record of the progress made in horticulture in its different branches as displayed in the Toronto Nurseries, Kingston Road, owned by Mr. George Leslie, one of Toronto's oldest and most respected inhabitants. The nurseries were started many years ago, and now embrace eighty acres on the south side of the Kingston Road—the original nurseries, fifty acres, adjoining Mr. Leslie's house, and about thirty acres in another section, about a mile distant. The first named portion borders on the lake, and is composed of every variety of land suitable for the varied fruits and trees reared on the grounds. Dealing largely in trees of both the ornamental and fruit-bearing species, Mr. Leslie, to prove the practical advantages of his own culture, has reared a large number of both to maturity, and the fruit-bearing at this season are groaning under a load of the Creator's bounties. For many years the ornamental and fruit trees for sale in Canada were reared in the older established nurseries on the other side of the lakes, but the active hold of the business taken by the proprietor of the nurseries has, to a great extent, displaced foreign grown trees from the market, even without a protective duty. This has encouraged other less extensive nurserymen throughout the Province, with a like successful result, until a combination of action has secured the home market for the home producer; and the others who, in different sections of Ontario, have entered into the growth of ornamental and fruit trees have an equally encouraging report with Mr. Leslie, that a demand exists within the Province for more than can be raised. Were not the heavy protective tariff in existence on the other side, our Canadian horticulturists feel sanguine that they could even outstrip our Yankee cousins in the business.

In a walk through the nurseries, one of the special features observable is the hedges, to which we drew attention some time ago in the columns of the CANADA FARMER: among the most important, perhaps, of the hedge plants successfully cultivated by Mr. Leslie, is the buckhorn, which is destined to be the farmers' hedge in Canada, being possessed of qualities that make it capable of sustaining the rigour of a Canadian winter, while cattle will not browse upon it. The roots are also of a very fibrous nature, and will bear transplanting. The Norway spruce, white cedar and hemlock, are other varieties growing luxuriantly on the grounds. But to a casual observer the hosts of apple, cherry and pear trees that line the walks and occupy every available spot, possess the greatest charm. An interminable number of these exist at all stages, from the young strippling to the stately tree. All display the same careful attention, and mark the care and discrimination required

in the proper rearing of fruit trees. The dwarf apple and pear trees among these are peculiar specimens of belittled creation, which, though no taller than an ordinary sized individual, yet strive to outstrip their bigger brethren of the orchard in the quantity of fruit produced. In every department, although so extensive, the order and arrangements are equal to that of a flower garden, and the pains-taking care observable marks the perfection to which everything has been brought. In securing this result much has been due to the energy of Mr. George Leslie, Jr., whose practical knowledge of the art is evidenced in all sections of the grounds.

A walk through the grounds at this season of the year is a decided charm. Taking first the section bordering on the lake, the different species of trees we have mentioned are found. In addition, numerous plants of both attractive and useful kinds are found. Among these the rhubarb is a matter for astonishment. Several acres, of the largest conceivable dimensions, with leaves having size enough to form a tent where an ordinary sized individual could camp under easily, dot the grounds. The portion of the grounds on the north side of the Kingston Road is devoted especially to the growth of flowers. The land is very nicely laid out, and the floral creation represented by some of the choicest specimens grown in Canada. The dahlias are now in full bloom, and their extent may be imagined from the fact that there are over 113 varieties planted out. The culture of the grape in the nurseries is not very extensive, but some of the choicest vines of both in and out door species exist on the grounds. The rearing of strawberries has this year proved a remunerative source of profit. The market has been exclusively supplied by Canadian growers, and in no branch of fruit culture has more progress been made. The protective duty of last year has tended to this result, and given a considerable impetus to the home trade.

In trees and shrubs, Mr. Leslie's trade may be judged by the fact that in the winter of 1865 and 1866 he lost between forty and fifty thousand dwarf trees, yet he still prosecutes the work, and aids nature in beautifying homes and dwellings that but for his enterprise would lack the many adornments in this line that grace them.

STRAWBERRY QUERIES.—An "Enquirer" sends us the following communication, and enquiries:—"I notice in your valuable paper of the 15th ult. the report of a discussion at the summer meeting of the 'Upper Canada Fruit Growers' Association,' on the merits and demerits of the various kinds of strawberries. Being an amateur, I would feel much obliged by your answering the following questions, viz:—which would be the best varieties to plant together, and which should be kept separate? How would corn answer as a shade, planted at proper distances in the bed? I think from some experiments I have made that those shaded grow the finest fruit, and have proved the healthiest plants this dry season. In preparing the soil with a view to planting, what is the best manure? How about hen dung and leached ashes, and what is the best covering for the plants in the fall—litter or leaves? From the little experience I have had, I would beg to recommend the Triomphe de Gand as a strawberry well worth cultivating, as with care and attention it can be brought to great perfection.

ANS.—If by the first query our correspondent means which are the pistillate varieties and what staminate sort is best to plant with them, we reply that the list is quite too long to insert here, but the principal and generally approved kinds are Hoveys, McAvoy's Superior, and Russel's Prolific, and we believe no better staminate variety can be planted with them than Wilson's Albany or the large early scarlet. All distinct varieties that have perfect flowers should be kept separate. With regard to planting corn for shade, we would recommend *mulching* in preference; as this would have the effect of keeping the ground moist without diminishing the amount of light and heat so desirable for maturing and obtaining the full flavor of fruit. In respect to manure, barn-yard is mostly recommended; but other kinds would also be advantageous, especially unleached ashes. Hen manure would, no doubt, be highly serviceable. Lime is said to be prejudicial. A thin winter covering of either litter or leaves, or both mixed, is useful. We cannot do better than refer our correspondent for fuller and more particular information on all points relating to strawberry culture to an excellent work recently published—the *Small Fruit Culturist*—which he will find a safe guide.

Renovating Old Orchards.

In some soils fruit trees grow well for a few years, and when they have arrived at a bearing age, disappoint the expectations of their owners by declining and dying, instead of producing fruit. This fatality generally occurs in cold, undrained soils, when the roots, having exhausted all the nutriment which existed in the rich soil or manure which was placed around them at the time of planting, have penetrated into the cold subsoil.

The quality and condition of a soil are indicated by the crops or herbage that grow on it. Cold, sour, wet soil will seldom produce a good even crop of any kind, as on it frost takes peculiar effect, both early in spring and late in the fall. If it is in grass, the quality will be coarse and aquatic, the best varieties being crowded out by the natives of the soil.

There is but little use in trying to renovate an orchard in which the trees are falling from the effect of stagnant water, without first removing the cause of the disease. There is scarcely any orchard so level but a sufficient fall for drainage can be found in it. It is one of the advantages of planting trees so as to form exact rows both ways, that drains can be made between them, for the fall must be at one side or another. Drainage should always be perfected before the trees are planted, but that which is right and expedient is not always done, and "better late than never," is a true proverb.

When a tree has occupied a place for several years, and died from any cause, it is not proper to plant a young tree in the same spot without deepening or draining the soil, if necessary, and adding those manures which are specially adapted to promote the growth of the wood and fruit. Lime, plaster, bones, ashes and charcoal, are useful for renovating the exhausted soil of an orchard.

When a tree is healthy, but unproductive, or is of some inferior variety, the branches should be removed gradually, and scions of the best varieties grafted on. The removal of the branches should be commenced at the top of the tree, and be continued downward yearly until all are removed, and replaced by scions of superior quality. By mangling in this way, the life of the tree will not be endangered by the lopping off of all the branches at one time, and the shape of the tree will be placed in proper training by permitting the central branches to get a little ahead of the laterals.

In a well-managed orchard pruning is never neglected, for the evil consequences of allowing trees to run to wood for several years and then to subject them to a severe pruning are well known to every experienced orchardist. The correct method of proceeding is to bring the head of the tree into proper shape by timely pruning, and then to keep it so by preventing the growth of unnecessary branches. The head should be hollow at the centre to admit the sun to the fruit. A thick, bushy head is generally more productive of leaves and caterpillars than fruit.—*Western Rural.*

The Pocket Melon.

EVERY one who has much to do in providing or arranging the dessert, is always on the lookout for something fresh, either useful or ornamental; and to add to those fruits in general use, I would recommend Queen Anne's pocket melon. This melon, as is well known by most gardeners, is not new, but a variety which has been little cultivated of late years. When neatly arranged with other fruits, it is one of the prettiest objects that can be placed on the dinner table.

The plant is easily grown like other melons, either in pots or planted out in the ordinary way. If grown in small pots, with stems about a foot high, and about five or six fruit on each of the plants, these are objects of great attraction, and are sure to please the most fastidious. The average size of fruit obtained by pot-culture, is that of a small orange, and they are most beautifully striped with red and gold; the aroma, too, is most delicious. The fruit from plants planted out will be about double the size of those produced by pot-plants, but equally useful and ornamental. This miniature melon is, I believe, of very ancient date, and is like an "old coat," or "old song,"—destined to become quite in the fashion again.—*John Pericins, in Cottage Gardener.*

[Can any one supply seeds of this fruit, now so popular in England? It is by no means new, but one of the oldest of melons; but is one of the good old things recently brought to notice.—*Journal Horticulture.*

Poetry.

The Farmer's Harvest Song

The rosy morn with gleesome smile
Comes o'er the eastern hill;
The calm lake gleams a sheet of gold,
And sparkles every rill.
The crystal dew drops, flashing bright,
Hang glittering on each spray,
The feathered choirs with tuneful throats
Now greet the opening day
Then hurrah! hurrah! for the farmer's life,
There's none so happy as he,
As he drives a field with his good stout team,
To turn the fallow lea.

Up, up, and meet the blushing morn,
With heart all light and gay,
Away to the fields of waving corn,
Or meads of fragrant hay;
The reapers come with shout and song,
The flashing blade to wield,
And soon in shining swath is laid
The harvest's golden yield
Then hurrah! hurrah! for the farmer's life,
There's none so happy as he,
As he gathers the golden harvest in,
Or turns the fallow lea

Though his cheek is brown with summer's sun,
Or winter's pelting storm,
Though his hand is hard with honest toil,
Its clasp is kind and warm;
Health glows in every throbbing pulse,
His arm is stout and strong,
And he huffs, as he swings the glittering axe,
Till the old woods ring with its song
Then hurrah! hurrah! for the farmer's life,
With joy his pulses bound—
As the giant oak, beneath his sturdy stroke
Comes crashing to the ground

When winter's tempests loudly rave
Hoarse through the leafless trees,
And eddy eddies are wildly borne
Along the luring breeze,
Then pile the crackling wood fire high,
He heeds not wind nor snow,
Each staling face around the hearth
Is lit with a ruddy glow
Then hurrah! hurrah! for the farmer's life,
Let the tempest howl in its ire,
He heeds not the roar of the wintry blast
As he sits by his cheering fire.

And should our land e'er bear the tread
Of an invading foe,
With willing hand he'll grasp the sword
To strike the traitor low,
The lion courage in his heart
Will nerve his strong right arm,
In danger's threatening hour to shield
His home and hearth from harm.
Then hurrah! for the farmer staunch and true,
Whose heart ne'er falts when tried,
Whose toil is the wealth of our smiling land,
Our country's boast and pride.

CALMAR.

KINGSTON, Aug 6, 1867.

Miscellaneous.

Lily-Ponds.

The following extracts are taken from a communication by Wilson Flagg, in the *American Journal of Horticulture*. The length of the article alone, prevents us giving it entire.

All the beauty of nature and all the life of the forest gather spontaneously about a lily-pond. Here assemble the water-birds of various plume, attracted by the fishes, the insects, and the plants that are abundant near the shore. The singing birds also make here their tuneful haunts, where vegetation is fully stocked with insect-life. Nowhere is there so much animation, apart from human abodes, as on the grassy banks and wooded eminences that surround the pond; nowhere is there so much beauty outside of human art. The variegated summer-duck finds seclusion here in the umbrage of trees and rushes, and subsistence in the shallows abounding with lemma, water-cresses, and other edible plants, and the youthful angler, standing on the shore, watches with delight the little spotted tattler, as it runs nimbly upon the lily pads, then casts his line over beds of aquatic flowers as sweet as a garden of hyacinths.

These beautiful ponds are fast becoming appropriated by dealers in ice, or spoiled by improvers who substitute the beauty of cultivation for that of spontaneity, and destroy most effectually their peculiar and delightful features. But there are thousands of them still quietly sleeping in the forest, unshorn of their original attractions. On the boundaries of these virgin waters, nature is still the presiding deity; and the nymphs that do homage to her have not been exiled from their abodes. There the rhodora still harbinger the summer, while shedding its rosy light in

tufted profusion upon the shore; and the small kalmia, with more retiring habits and deeper blushing tints, attends her, and wreaths her brows with crimson. The rose, that has dwelt here ever since the hills were raised above the plain, glows with the "purple light of love," of which it is the emblem; and the mountain laurel hangs its evergreen boughs over the outer portals and inner sanctuary of this, her temple and her paradise.

Our lily-ponds, for the most part, are surrounded by hills, that form a basin for their waters, and become the principal source of their replenishment. Every pond has an outlet that commonly leads to a level field; and it is in the shallows near this point, and in the various inlets, not in the deep waters, nor immediately under the steep banks, that the water-lilies congregate, fixing their roots in the alluvium, and extending their long stems upward to the length required for raising the bud to the surface. As soon as it has gained this height, it is ready to become a flower. The flowers expand about the third or fourth hour after sunrise, and remain open until the rays of the sun begin to fall obliquely in the afternoon, and cast upon them the shadows of the hills and woods. If at any hour the sky is veiled with clouds, they fold themselves in sleep, and leave the day to the more humble yellow lily, the nodding sarracenia, the arethusa upon the shore, and the dark-blue pond-tedera.

Almost all productions of the region are gathered around these waters; almost every animate thing of the bird and insect host dwells here in a lively and tuneful assemblage. The reflecting and inquisitive mind can never tire of its researches in this studious solitude. For all the seasons have garnered here a portion of their stores; and both to the naturalist who is familiar with the forms and habits of animate and inanimate objects, and to him who studies only nature's beautiful aspects, the lily-pond is a page written over and over with myriads of lines, letters, and pictures, yet without any confusion, and perfectly legible to those, who, shunning the frivolous pleasures of artificial life, resort here to live nearer to nature and to happiness.

A grindstone should not be exposed to the weather, as it not only injures the woodwork, but the sun's rays harden the stone so much as, in time, to render it useless. Neither should it stand in the water in which it runs, as the part remaining in water softens so much that it wears unequally. "out of true."—*Ex.*

PRE-HISTORIC LAKE EMBANKMENT.—A lake has been discovered in the State of Iowa, in America, occupying a surface of 2,800 acres, which is between two feet and three feet higher than the surrounding country, and surrounded by a carefully-built wall, ten feet or fifteen feet wide. When or by whom the wall, which is very old, was built none can discover. The stones of the wall vary in weight from a hundred pounds to three tons. There are no stones on the land within ten miles around the lake.—*Builder.*

WORSER THAN A VULPECIDE.—On Monday, Mr. Donald Macfarlane, gamekeeper to Mr. Patrick Small Keir, of Kindrogan, set a large trap to catch a fox on the hill of Blaveliga, on the estate of Kindrogan. On going to the trap, some time after he had set it Mr. Macfarlane, to his great surprise, found that instead of Reynard a splendid golden eagle had been trapped. The weight of the bird is fully 12 lbs. From tip to tip of the wings it measured 7 feet 5 inches, the girth was 2 feet 4 inches, and from the crown of the head to the tip of the tail the measurement was 3 feet 5 inches. The head measured 9 inches round, and the bill was 3 inches in length and 2½ inches round. The bird is one of the finest specimens of its kind ever seen in the district.—*Dundee Advertiser.*

EXTRAORDINARY CATCH BY A FISHERMAN.—A novel piscatorial incident occurred in Dovedale on Monday afternoon. A gentleman angling on the Staffordshire side of the Dove threw his line across the stream; the bait was taken, and from the force of the pull he anticipated a splendid catch. In an instant the rod was dragged out of the fisherman's hand, and casting his eyes across the stream he saw a cow rushing up the bank on the Derbyshire side of the river, with the line and rod dangling at her tail. He forthwith forced the river breast high, and succeeded in recovering his fishing tackle. It seems that at the moment the gentleman threw the line the cow was returning from the stream after drinking, and the hooks of the artificial minnow caught in her tail. The scampering of the affrighted cow and the pursuit of the fisherman excited mirth amongst the few persons who happened to be in the Dale at the time.—*Staffordshire Advertiser.*

IRISH NOTION OF HOSPITALITY.—An Irish soldier, who came over with General Moore, being asked if he met with much hospitality in Holland, answered, "Oh! yes, too much; I was in the hospital nearly all the time I was there."

FARMERS' CLUBS.—X. A. Willard, Esq., gives the following description of the manner in which the members of the Little Falls Farmers' Club, of New York, conduct their discussions:—Near the close of every meeting a subject is chosen for the next meeting, and some person or persons appointed to open the discussion. The opening speeches are made in the way most agreeable to the speakers; either by written essays, or extemporaneously. After the opening speeches members carry on the discussion in a conversational way—asking questions, or giving their experience, without any attempt at speech-making. All that is sought to be obtained are the facts. Generally, members keep their seats, and talk in a familiar way, precisely as they would if meeting friends on the street, or at their homes. Under this system, it has been found that much more knowledge is obtained than would be obtained if speakers were required to rise and deliver their experience, etc., in a set speech, since many who are willing to talk and answer questions could not be prevailed upon to rise and make a speech.

THE MOSQUITO QUESTION.—Josh Billings makes the following remarks appropriate to the season: "We are told that there want enee thing made in vain. That is sum so, but I have thought the time spent in manufacturing musketoze must hev been wasted, if the musketoze want. How they ware put together, I never could tell, and there is one commerehall peculiarity about the musketeer trade, and that is, 'he supply always exceeds the demand, and yet the production is not diminished; I kant understand this, no how. They are born of poor, but industrious parents, and are brought up under the auspices of some of our best families. They have also consummate courage; I have known a single musketeer to site a man and his wife awl night long, and draw the first blood. It is very easy to kill musketoze—when you can; but in striking them, you are very apt to hit the exact place where they wuz. They are cheerful little cusses, singing as they toil."

Advertisements.

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500 STOCKS OF BEES WANTED!

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

ITALIAN STOCKS.

Having received all the orders for Italian Stocks that I am able to fill without extra expense, the price after this date will be as follows: In the Single-boarded hive, including right to make, \$15 in the Double-boarded hive, including the same, \$20.

ITALIAN QUEENS.

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

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

J. H. THOMAS, Apiarian,
Brooklin, C. W.

V4-12-17

ONE HUNDRED DOLLARS!

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WE will send FIFTY DOLLARS to whoever remits for the largest list of Subscribers to the

"NEW DOMINION MONTHLY,"

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The "MONTHLY" is a handsome and interesting Magazine at ONE DOLLAR per annum, and would prove an elegant and welcome visitor to any household in Canada.

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Two Subscribers for six months will count as one Subscriber for one year. In other words, the largest amount of money remitted will be considered the largest list, and be entitled to the prize. Should the two highest prove exactly equal, the first and second prizes will be divided equally between them.

Each Canvasser is requested to remit subscriptions as fast as obtained, so that the subscribers may be supplied promptly with the Magazine, and in the last letter, which must bear, at latest, the post-mark of 30th September, the whole number of subscribers remitted for should be recapitulated, and the whole amount of postage paid by the Canvasser deducted. Letters mailed after 30th September will not count.

The Canvassers would require to be known to those who subscribe, as the publishers cannot assume any responsibility except to send Magazines for the amounts they receive, but they will take the risk of registered remittances.

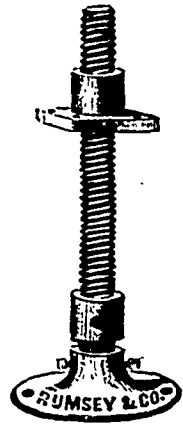
Any of the above premiums—if the successful competitor sees fit—might purchase a good Sabbath-School Library, or some other object of public utility.

Besides the premiums, Canvassers will be entitled to a gratis copy for each club of eight, and those who do not reach eight will be entitled to one dozen fine assorted Tulip Bulbs for each dollar sent. The Tulips to be applied for at the office of the undersigned, as it is too costly to send them by mail or express. The names of those who obtain the premiums, with the number of subscribers they have obtained, will be published as soon as ascertained.

The volume will begin with the October number, which will be ready by the middle of September. The August number, already issued, is merely a specimen, which will be sent gratis to all subscribers. Address all communications to

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It is put up in boxes at 35c, 70c and \$1, with full directions on each package. A 35c box will clean twenty sheep.

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MAKES good butter all year round, increases the quantity, improves the quality, reduces the time of churning, offsets hours to minutes, removes all unpleasant flavour, and will prevent butter ever becoming rancid. To those who make butter for packing, it is invaluable. Full instructions on each box. Sold by the principal Storekeepers throughout Great Britain and the Colonies.

J. R. HINDS, Hamilton, Agent for Ontario.

AGENTS WANTED IN EVERY TOWN AND CITY.

Markets.

Toronto Markets.

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

The transactions in grain and flour for the past week have been very small, the interest taken in the elections having occupied the attention of the dealers.

The deliveries of new grain have so far been very small, much less than was anticipated, but a few loads of new wheat and barley have been marketed—the samples are very fine.

Flour—Rather more enquiry for fresh ground and sound supers, of which our stock is now quite bare; some sales both for city use and shipment at \$7 12 1/2 to \$7 25 were made during the week, and flour from midge-proof at \$7 40 to \$7 50. No demand for the higher grades.

Wheat—With no stock the transactions are necessarily small; some small parcels of new fine sold at \$1 55 and \$1 60—very fine samples. There is an active enquiry for car loads. Spring is also wanted in car lots at \$1 40 to \$1 50.

Barley—About half a dozen loads of new barley have come in and sold on the street at 60c, and in one or two instances at 65c, the ideas of dealers, however, are that 60c ought to be the extreme price. The reports of a large crop well saved in the Western States, where we have for some years been shipping, and the probable exports from there, are now daily discussed and have a tendency to depress prices.

Oats—In fair request at 50c to 52c for fresh, sweet loads.

Montreal Markets.—Aug. 25.—Flour—Superior extra, \$3 75 to \$9; Extra, \$3 25 to \$3 50; Fancy, \$7 60 to \$7 75; Welland Canal Superfine, \$7 40 to \$7 50; Superfine No. 1 Canada Wheat, \$7 25 to \$7 50; No. 1 Western Wheat, \$7 40 to \$7 50; do No. 2 do, \$6 90 to \$7 10; Bag Flour, 100 lbs, \$3 60 to \$3 75. Wheat—Canada Fall, none, Spring, \$1 50 to \$1 55; Western, none. Oats—1 1/2 lbs, 44c; 1 lb, 45c; 1/2 lb, 46c to 60c. Butter—Dairy, 12c to 13c; Storepacked, 11c to 12c. Ashes—Pots, \$5 80 to \$6 50; Pearls, \$6 75 to \$8 50. Pork—Mess, \$20 25 to \$20 50; Prime Mess, \$14 50 to \$16 75; Fat, \$14 75 to \$16 00. Dressed Hogs—none. Prax—Per 66 lbs, 85c to 87c. Rye Flour—\$5 50 to \$5 60. Remarks—Flour, receipts heavy, prices nominal; buyers holding off, market in a transition state. Grain—Nothing doing. Provisions—Unchanged. Ashes—Pots steady, pearls drooping.

Milwaukee Markets.—Aug. 27.—Wheat—Receipts, 24,000 bushels, no shipments. No. 1 f.o.b. at \$1 74, No. 2, f.o.b., at \$1 62. Flour—\$9. Freight to Kingston firm at 12 1/2c.

Chicago Markets.—Aug. 23.—Wheat—Receipts, 150,000 bushels, shipments, 63,000 bushels; No. 1 f.o.b. at \$1 72. Corn—Steady at 97 1/2c, Receipts, 93,000 bushels.

New York Markets, Aug. 25.—Cotton—Quiet at 25c. Flour—Dull and 10c to 20c lower. Receipts, 10,223 barrels, sales 6,400 barrels, at \$7 to \$7 40 for superfine State and Western; \$8 00 to \$10 20 for common to choice extra State and Western; \$8 60 to \$10 00 for common to choice extra Western. Rye Flour—Quiet at \$6 90 to \$6 90. Wheat—A shade firmer for white—steady for red, receipts, 31,500 bush, sales, 14,000 bush, at \$2 40 for white Michigan, \$2 45 extra do. Rye—Quiet, receipts, 940 bushels, sales, 400 bushels western at \$1 45. Corn—A shade firmer; receipts, 97,000 bush; sales, 77,000 bushels at \$1 09 1/2 to \$1 11 1/2 for new mixed Western, \$1 12 to \$1 12 1/2 for very choice do, \$1 05 to \$1 08 for unsound do. Barley—Quiet. Oats—Firmer, receipts, 20,100 bushels; sales, 17,000 bushels at 70c for old Western; 76c to 80c for new Ohio. Pork—Closed firmer at \$23 18 to \$23 37. Lard—Heavy at 12 1/2 to 13 1/2c.

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THE CANADA FARMER is printed and published on the 1st and 15th of every month, by the GLOBE PRINTING COMPANY, at their Printing House, 26 and 28 King Street East, Toronto, Ontario, where all communications for the paper must be addressed.

Subscription Price \$1 per annum, (POSTAGE FREE,) payable in advance. Bound volumes for 1864, 1865, and 1866, may be had for \$1 20 each. Subscribers may either begin with No. 1 of the present Volume, or with the first No. of any preceding volume. No subscriptions received for less than a year, and all commence with the first number for the respective years.

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