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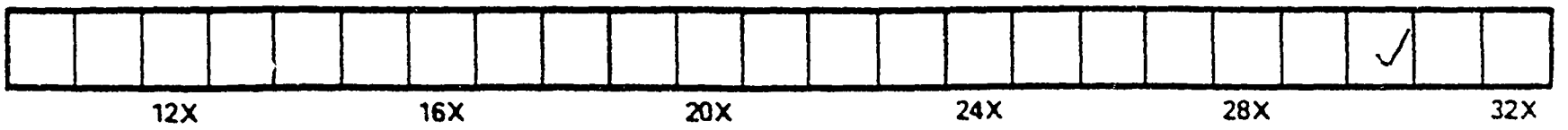

THE CANADA FARMER

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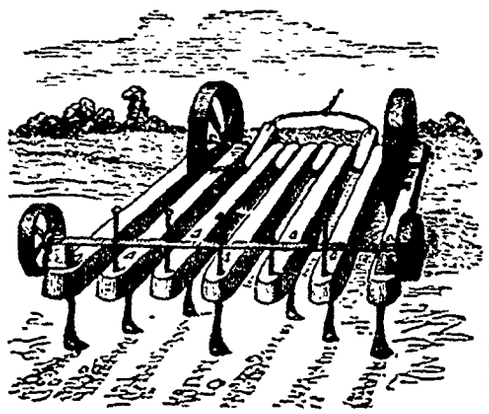
The Field.

Bradley's Patent Cultivator.

OUR attention has recently been directed to a novelty in the way of cultivators, a notice of which will also be found in the advertising columns of this journal. The inventor of this new cultivator is Mr. W. H. Bradley of Centreton. From the account given respecting it, from the inspection of a small model, and from the testimony of a number of farmers who have used it during the last season, we believe we may recommend this machine as being at once cheap, convenient and efficient.

Its chief peculiarity consists in the movable parts, which adapt it for irregularities of ground, and secure a thorough breaking up of the soil to a regular depth even in the most rough and uneven field. The principle and method of construction will be readily understood by the accompanying illustration. This Cultivator consists of a number of movable bulls or beams, in



which the teeth are inserted, and through which the front axle passes, allowing them a certain amount of play as on a hinge, while at the same time it holds them together at one end. At the other end light iron rods are fixed upright, and pass through corresponding holes in the axle of two smaller wheels, situated at the back. These rods move freely up and down, admitting the movement of the teeth in that direction, while they serve to steady the beams and prevent lateral motion. The teeth are set to regulate the depth to which the soil should be worked, and to prevent clogging. The play given in this implement to each separate tooth fits it especially for uneven ground, which is thus penetrated in every part to a regular depth. There is no tongue and the Cultivator is drawn after the manner of a harrow—a modification which is said to be easier on the horses and to allow the whole to work more evenly than the ordinary method of attaching and guiding this sort of implement.

Another peculiarity in the construction, is the provision made for transporting it without the cumbrous intervention of a waggon, or any other conveyance. When it is desired to move this cultivator from one place to another, it is simply necessary to turn it upside down, the rods at the back being keyed so as to

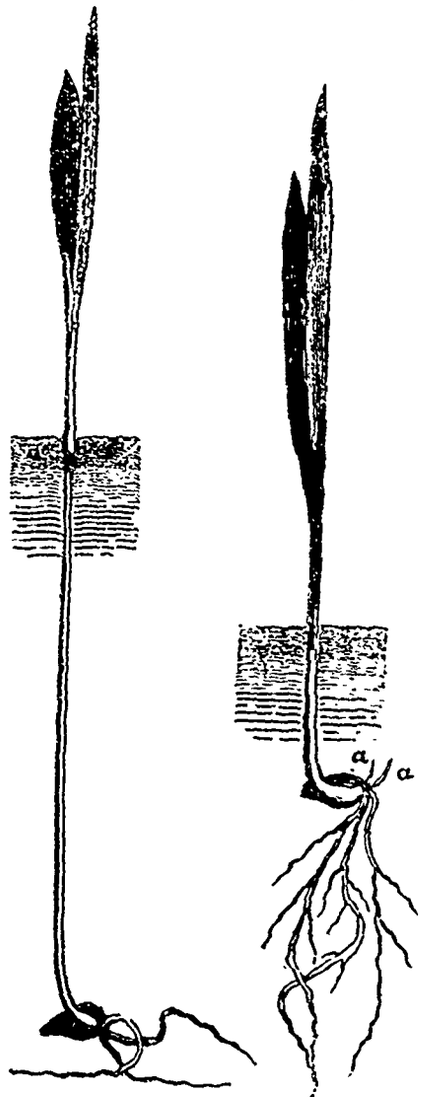


FIG 1. FIG. 2

be out of the way of the ground. The whole then rests on the large front wheels and the small wheels at the back, and can be readily drawn to any part where it is wanted, the inverted implement forming at the same time a convenient waggon for conveying bags of seed or other small load to the field.

It is certainly an ingenious contrivance, and we believe a useful one, while its price will bring it within the reach of many who are scarcely able to purchase the more expensive cultivators.

Proper Depths for Covering Wheat.

Too little attention is paid by many farmers to the depth of sowing seeds, and much waste of seed as well as inferior subsequent crops often result from the careless manner in which the seed is put into the ground. The common practice of broadcast sowing has this unavoidable disadvantage,

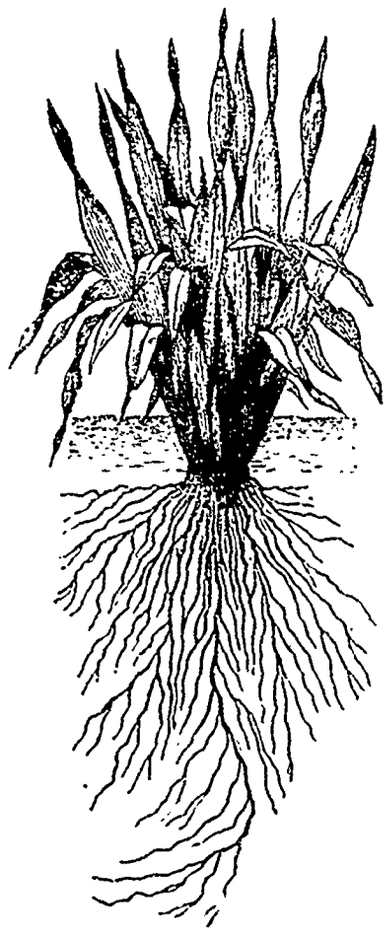


FIG. 3.

that the seed is very irregularly deposited, some being buried six or eight inches below the surface, others barely covered, and others remaining exposed above ground. The drill, on the other hand, will distribute the seed evenly, at whatever depth may be required; and on this account, if for no other reason, seems by far the preferable method of sowing. The cost of the machine will soon be paid for by the saving in seed alone.

The accompanying illustrations will give some idea of the results of shallow and deep planting. Fig. 1 represents the condition of a plant thirty days after

sowing, when the seed has been too deeply deposited, and the germinating energies have all been expended in pushing the attenuated stalk up to the surface, so that too little vital force is left, a sickly and feeble growth results, and no offsets are produced at the point of tillering, *a*. Fig. 2 shows a stalk of wheat at twenty days from seeding, sown at the depth of a little more than one inch; *a, a*, being young plants commencing to tiller out. Fig. 3 gives the appearance of a healthy wheat stalk after tillering has been well established.

Some years ago an interesting trial, involving the question of the proper depth for sowing seed, took place in Ohio. The plaintiff in the case had engaged a party to sow for him a certain field with wheat. The grain was put in with a drill, it is true, but due attention had not been paid to the proper depth of sowing, and most of the seeds, it was found, had been deposited some six or eight inches below the ground. The consequence was that much of the seed never germinated, and a portion that did germinate scarcely reached the surface; while the little that reached the light and air exhibited only a feeble growth, and a very poor crop was the result. Damages were, therefore, claimed by the plaintiff, on the ground of this very improper manner of putting in the seed. We do not know how the case was decided, but in the course of the investigation the following testimony was given in evidence. It was claimed that the extreme depth of sowing was the true cause of the failure of the crop, for around stumps and in stony places, where the drill could not run deeper, the yield was good.

One witness testified—"Where I have had wheat put in deeper than that, after it came up and formed a stool of roots at the surface of the ground, the plant between that and the seed would perish, and the power of the grain is thus exhausted and the plant would show much less vigour. I have examined and experimented until I am satisfied that this is the universal result, &c."

Another witness—"Eight years ago I made an experiment to ascertain the proper depth of sowing wheat—deposited fifty seeds at the depth of eight inches, a like number at seven, six, five, four, three, two and one inches, and fifty grains I raked in on the surface. Of those deposited at eight inches, two came up, but formed no heads; of those deposited at seven inches, about one-fourth came through the ground, but formed no heads. Ten of the fifty seeds planted at five inches made defective heads. I had a few perfect heads in the row planted four inches deep, but most were defective. I think all planted at three inches came up, but the row deposited at two inches was the best, *and came up sooner* than any of the rest." This witness did not state whether the ground was dry at the time he planted his seed, but I infer it must have been, or certainly the seed planted at one inch and raked in on the surface would have been the first to come up.

Another witness—"I should prefer to deposit the seed at the depth of one inch—certainly not deeper than two inches. It is a mistake to suppose that deep seeding is any security from winter-killing. The roots of the plants form at the surface, whatever may be the depth of the seed. But from frequent examinations I am satisfied, that wheat planted not deeper than two inches will stool out better than that deposited at a greater depth—that is, will produce more plants to a grain."

Beet Root Sugar.

SOME light has, it appears, been thrown on the much discussed question, whether beet-root sugar can be profitably manufactured in this part of the world. Experiments have been made at Chattsworth, near the Chicago branch of the Illinois Central Railroad, which have resulted in a highly satisfactory manner. The Messrs. Gennert have erected extensive works at the point above named, but have not succeeded in getting the manufacture going on the large scale they intended, owing to disappointment in the preparation of the requisite machinery. A large proportion of last year's crop was fed to cattle on this account. A series of experiments has, however, been successfully initiated, and we extract from the *Prairie Farmer*, whose editor was present, the following particulars, which we doubt not our readers will peruse with much interest:—The beets are washed, topped, decayed parts cut away, or the whole discarded, if imperfect. A toothed cylinder, two feet in diameter, driven at a high rate of speed, is used as a grater. The beets are fed up to it by a pair of plungers. The pulp and juice fall below in an iron tank, fine, and white as snow. Two hundred pounds of the pulp are put in a centrifugal machine at once, and the juice separated from it by centrifugal force in a few moments. The juice goes thence into clarifying tanks, where it is clarified preparatory to evaporation. In these recent experiments, no bone filters were ready, and hence other methods were resorted to to defecate the juice. The evaporation was done both in a kettle with steam coil, and on sorgho evaporators. The editor says of the first experiment:—"When it had reached a consistency supposed to be right for granulating, it was taken off and set in a warm room for the night. With many anxious feelings we approached the vessel holding it the next morning, when, to our *great delight*, we found the whole mass had crystalized from top to bottom, showing large and splendid crystals of sugar, which, after standing twenty-four hours longer, was allowed to drain. Not more than twenty per cent. of it drained out, much of which was sugar. This would have been less had it been allowed to stand longer." Repeated experiments produced similar results, although the arrangements were so imperfect as to involve much delay in the process, and repeated handling of the juice. The quicker the process the more perfect the granulation.

Our contemporary above mentioned, and other well-informed United States journals, are confirmed by these experiments in the conviction that beet sugar is to become a staple product of American industry, and that it is especially to flourish on the Western prairies, where the deep, rich soil is so favourable to root culture. Our readers know that, for various reasons, we have doubted whether this branch of European rural industry would flourish on this continent. We shall be glad to have our doubts removed by the unanswerable logic of facts. It is certainly encouraging to read the foregoing narration, and we hope our American friends, who are putting this thing to the test, will succeed to the full extent of their wishes. Their success will be ours also; for Canada, though it lacks the prairie soil, is just as good a region for beet culture as Illinois, and in some respects our manufacturing facilities are greater than those in the far west can possibly be.

New Varieties of Wheat.

IN our last issue we alluded to the propriety of trying such new varieties of wheat as promised any mitigation of the disadvantages under which wheat culture has suffered for some years; and while we would not advocate the practice of purchasing largely and without due caution any new variety that is brought into notice, yet it is certainly right for every farmer to gather all reliable information respecting the various kinds of this grain that from time to time come into notice. It seems to be the fate of almost every sort, even the best, to deteriorate after a time, perhaps from want of due attention in the culture: at all events it becomes necessary in almost every instance to make a change sooner or later. This fact, while it should make us willing to accept any apparently good variety, should also allay too sanguine expectations in regard to the various novelties in this class that are frequently far too highly vaunted. With this caution we would just briefly allude to several kinds of wheat that now seem to be gaining favor, and which are doubtless worthy of trial. The "midge-proof" has become pretty well known among us, and need not be again recommended. It has hitherto proved one of our best and surest of wheat crops; and though the millers have rather depreciated it, we believe it is quite adapted, with proper treatment, to yield an excellent quality of flour.

The Mediterranean wheat is rather a revived than a new variety, and is again receiving the attention which we think it deserves.

For the last two years a new variety, under the name of Diehl wheat, has been highly spoken of, chiefly by our neighbors in the United States. In the same quarter the Treadwell and the Wicks wheat are being pretty extensively tried, and with encouraging results.

A writer in the *American Agriculturist* thus speaks of some of these new sorts:—

"A few days since I received a letter from a subscriber of the *Agriculturist* in Kentucky, who wished to get, for himself and a half dozen of his neighbors, some of our leading varieties of wheat. Their plan was for each to sow one variety, and if it proved good, to distribute the product among the others. The idea is a capital one. He says they have been raising the 'New York Premium' wheat. When they first got the seed from this State, the crops were excellent, sometimes forty bushels per acre, but they have grown it so long on the same land that it has degenerated, and the yield is now very light and the quality poor.

"A miller and farmer in Maryland writes to the same effect. He has introduced a good many varieties of wheat, and for a few years they do well, and then run out. Is such really the case? Do not farmers, when they get a new kind of wheat from a distance, select their best land, give it extra care and culture, and consequently get good crops; while after a few years, when the seed is common, they bestow only ordinary culture, and get only ordinary crops?

"John Johnston writes me, July 23rd:—'My Diehl wheat is pretty good. One field may yield about as well as last year's; the other, not. Cause: *Not manured for many years.*' The variety has degenerated on the one field, but not on the other! Mr. J. adds: 'If plenty of manure were applied, there would be less loss from midge. All that is needed to insure good crops is more and better manure. Diehl wheat is excellent for rich land, but not good for poor.' This is not a popular doctrine, but it is true."

A correspondent in the *Western Rural* has the following on the same subject.

"This is the second year since the introduction of the Diehl wheat into this county. Its yield last year was considered above the average of other kinds of wheat sown here, and the consequence was it was much sought after to seed with last Fall, and the whole crop was bought up at three dollars per bushel, at that time being from fifty to seventy-five cents per bushel above the market price of other white wheat. In consequence of the high price asked it went into the hands of many, and has been sown on all the different soils of our county, from light sand to heavy clay. The growth of straw has been good on all, but it promises the best yield on the rich lands, and where sown early. Where sown late and on the same day with the Treadwell, it was very much injured by the midge, and the Treadwell was uninjured.

"I cannot say positively what its merits are when compared with the other white wheats. Many think there is nothing like it, whilst others are not ready to express their opinions. There has been but little of it threshed yet. After it has been generally threshed, it will assume its position.

"To sum up—with our present knowledge of the Diehl wheat, if we had a good fallow, rich and clean, we would sow the Diehl wheat, and sow early. If the land was of moderate richness and to be sown late, we would sow Treadwell. We think the Diehl requires a dryer soil than the Treadwell. Persons wanting Diehl wheat for seed this year should not pay fancy prices for it, but should willingly pay for good, sound, clean seed sufficient above the market price of wheat to recompense for the labor of making it so."

In regard to the Wicks wheat, Mr. G. A. King, a good farmer and sensible writer, thus writes in the *Boston Cultivator*:—

"For many years the need of an early and productive variety of wheat, and one free from the 'midge'

or 'weevil' has been felt, and in the 'Wicks' wheat the farmer has such a variety. This wheat was discovered some years since in the old red Mediterranean variety by a gentleman of this place. It is a choice white wheat, making the very best of flour: millers in Ithaca and Auburn pay from two to four shillings more for it per bushel than any other kind; they say they get *more* flour and of a better quality than from any other kind. It is from eight to twelve days earlier than any other kind which farmers have here, thus escaping the weevil or midge. It has a good stiff straw, and thereby escapes the Hessian fly. It is very productive,—twenty-five bushels not being a high average per acre, and I have known it to yield as high as forty-five bushels per acre. It is no humbug, as scores of the best farmers here will testify, and I actually believe that if this variety alone was sown in the United States, the crop would be doubled on the area over the present crop. It need not be sown before the 15th or 20th of September to do its best."

How to Kill the Daisies.

The following directions, supplied by a correspondent in the *Boston Cultivator*, bearing upon a difficulty respecting which we have more than once received enquiries, may be useful to some of our readers. The instructions in regard to quantity are somewhat indefinite, nevertheless they may serve as a basis for experiments:—

The ox-eye daisy is a great pest on many farms. Instead of being destroyed as fast as they appear, they are allowed to multiply until they overspread the whole land, and become a source of not merely annoyance, but of positive injury to the premises. Indeed, next to the Canada thistle, they are to be deprecated and provided against. In an address delivered some time ago by Solon Robinson, who owns a farm in West Chester County, N. Y., he alluded to the ox-eye daisy and how to get rid of it:—

When I bought the land it was as thickly set with daisies as any field I ever saw. I did not believe in them, for hay nor pasture. I did not know that salt would kill them, but found the first dressing greatly diminished this slovenly farmer's crop. The second dose did the work. I found next mowing time where they had predominated over all the grasses for years, scarcely a single bull's eye to be seen upon an acre. In their place came white and red clover, timothy, red-top and June grass. Do the farmers esteem these better than daisies? I do. If you do not, why all I have got to say is, this is a free country, and you may grow them. I shall salt and kill them. I had rather grow clover and grass. But killing daisies is not all the benefit that I derived from salt. It killed the worms; and the moles not finding their accustomed food, discontinued burrowing under and killing the sod, and it grew and flourished.

But that is not all. Manure is good for nothing until it has met with a solvent. Some vegtable substances are not soluable in rain water, and although capable of making good manure, are good for nothing in their inert condition. The action of salt, lime, plaster, potash, etc., upon dead, inert vegetable fibre in the soil, is to cause it to decay and become food for the growing grass. Dig up a sod in any old hide-bound meadow or poor "run-out" pasture, and you will find it full of black dead roots. If you dig again, after the action of the salt or other mineral manures, you will find a different and more favourable appearance, and certainly you will find a very great difference in the product. In short, you have made two blades of grass grow where only one grew before. What if over all this country the same result could be produced? Who can calculate the increase of wealth? It alone would forever pay the interest upon the national debt, and that, at least, would prove a national blessing.

I have seen some hay fields the present season where three-fourths of the weight of the crop was daisy. At a little distance it appeared to be all daisy. This was the case in a field at Auburn. The flea-bane overgrew the clover. Such a field as that I think I can clear of this pest of all good farmers at a cost not exceeding $3 an acre, even here, where transportation is most expensive. I did it upon my own place in West Chester Co. at less than $1 an acre. Again you ask, how? I answer: with salt. Nothing else. That is sure death to daisies. At first, I used three bushels, not being quite sure of the effect. I think I got a ton of hay from three bushels of salt, which was applied in the spring, about the time the grass began to look green. Upon the stubble I put seven bushels more, and since that I have applied ten more bushels. The cost in New York was six cents a bushel at the packing-houses, where it is brushed off dry-salted pork

Advantages of Pulverizing the Soil.

The effects of pulverization, or stirring the soil, are numerous.

1 It gives free scope to the roots of vegetables, and they become more fibrous in a loose than in a hard soil, by which the mouths or pores become more numerous, and such food as is in the soil has a better chance of being sought after and taken up by them.

2. It admits the atmospheric air to the spongioles of the roots—without which no plant can make a healthy growth.

3. It increases the capillary attraction or spongelike property of soils, by which their humidity is rendered more uniform; and in a hot season it increases the deposits of dew and admits it to the roots.

4. It increases the temperature of the soil in the spring, by admitting the warm air and tepid rain.

5 It increases the supply of organic food. The atmosphere contains carbonic acid, ammonia, and nitric acid,—all most powerful fertilizers and solvents. A loose soil attracts and condenses them. Rain and dew, also, contain them. And when these fertilizing gases are carried into the soil by rain water, they are absorbed and retained by the soil for the use of plants. On the other hand, if the soil is hard, the water runs off the surface, and instead of leaving these gases in the soil, carries off some of the best portions of the soil with it. Thus, what might be a benefit becomes an injury

6. By means of pulverization, a portion of the atmospheric air is buried in the soil, and it is supposed that ammonia and nitric acid are formed by the mutual decomposition of this air and the moisture of the soil—heat also being evolved by the changes.

7. Pulverization of the surface of soils serves to retain the moisture in the subsoil, and to prevent it from being penetrated by heat from a warmer, as well as from radiating its heat to a colder atmosphere than itself. These effects are produced by the porosity of the pulverized stratum, which acts as a mulch, especially on heavy soils.

8. Pulverization, also, has the combined effect of several of the preceding causes, accelerates the decomposition of the organic matter in the soil, and the disintegration of the mineral matter, and thus prepares the inert matter of the soil for assimilation by the plants.—*Farm and Fireside.*

Sowing Grain.

A Mr. David Whyborn, of Mexico, N. Y., at a late meeting of the Farmers' Club of New York city, made the following remarks on sowing grain:

I object to throwing the seed all one way in a strong wind, from the fact that the wind takes the seed as soon as delivered from the hand, and carries it too much in a straight, narrow line, thereby leaving a space between each handful without any, or with very little seed. I admit it would not be so visible to a person walking on the margin of the lot, as if there were long strips of land left without seed in the direction that the sower travelled; but I question whether there would not be more land left unsowed. I object to choosing a strong wind to sow in. It makes it harder work, and if the ground, when ploughed, was laid in lands, say from east to west, and when ready to sow the wind should blow from either of those quarters, in order to have the advantage of that wind so as to spread wider at a cast, the targets would have to be placed north and south, and sown in that direction; consequently one would have to harrow across the lands or wait until the lot is sown. I object to sowing from a basket or pail, because the weight of the seed is at the side of the sower. To balance himself he leans in the opposite direction, which deprives him of a portion of his power to spread the seed, and it makes his back ache.

After forty years' experience, I believe a better principle of broadcast sowing is to have an oblong box with a hollow in one side to fit the body; carry the box directly in front, fix it there with two bands, one on each shoulder; then the seedsman can walk upright and have both arms at liberty to use as required. When entering the lot to sow the seed, he either knows or inquires which way it is to be harrowed, and commences to sow in that direction, using both hands at the same time—that is, filling the left hand at the same time that he empties the right hand, and *vice versa;* and whether there is a perfect calm or a strong wind blowing from north, south, east or west, if he does not try to cover too wide a space, and has judgment enough to give the greater force to that arm that has to deliver its seed in opposition to the wind, the grain will always come up even. As to how wide can be sown at a cast, depends much on the kind of grain or seed, as heavy seed will spread easier than light. As to how many acres a man will sow in a day, will depend on the strength, durability and perseverance of the sower, and the state the land is in to travel on, &c.—*Rural American.*

Silver Maple as a Shade Tree.

From its very rapid growth, and making so quick a shade, as well as cheapness, this variety of maple is more extensively planted, both in town and country than any other. It has also the merit of being extremely hardy. In the country, it is not attacked by insects, and in the cities it is not destroyed by them.

Its *demerit* as usually managed is, that it is not a compact tree, being loose and open in the head, and its long branches and soft wood are often terribly injured and broken by storms. To remedy both these and make of silver maple a really beautiful shade tree, with a head nearly as compact as a Norway maple or horse chestnut, it is only necessary to shorten in the branches with the pole pruning shears, not only early in the spring, but twice at least afterwards, when in leaf, and whenever the long pendant branches are inclined to spread beyond proper limits. It bears such cutting back well, and we have seen it trimmed into an oval, round, or pyramidal shape and make a beautiful tree. For planting on avenues or to make a quick shade around new buildings, or for protection, the silver maple is remarkably well adapted, and cannot be spared. Were it not so common and cheap it would be more admired. The leaf is really very pretty, especially the silvery appearance on the under side, and by thorough and repeated trimming as proposed, it will deserve to have a place among our finer ornamental trees.

The silver maple has also another advantage over the silver poplar, and other fast-growing trees, in that it does not throw up suckers.

Change of Seeds.

We find the following suggestive paragraph in the Report of an Agricultural Tour in Europe, by John H. Klippart, Esq., recently submitted to the Ohio State Board of Agriculture, and published in the late annual report of that body:—

"I made many inquiries and collected quite a number of items, facts, or at least supposed facts, in relation to the change of farm crop seeds, but as it would require entirely too much space to give the details of a tenth part of them, I must content myself by giving a simple statement of the conclusions I arrived at, based, of course, upon the statements detailed to me. It appears that any farm crop, as wheat, for example, may be much improved by culture on a farm with appropriate soil; but there is a limit to the improvement of this variety, which I will designate as variety A, on this farm, which I will designate as farm No. 1. After the limit of improvement has been attained on No. 1, it will then, for a series of years, remain stationary, and after that, even with the best culture, will deteriorate. But if, when it has attained its limit on No. 1, it is then transferred to a farm No. 2, it will improve again on farm No. 2, etc. Whilst the variety A. is deteriorating on farm No. 1, the variety B, under proper treatment from farm No. 2 or 3, will improve by the side of it. Hence, the German farmers have adopted a system of seed exchanges, and are anxious to obtain seed from foreign countries. They seem to have given this subject a great deal of attention, and take into account the kind of soil, meteorology, and level above the sea where the seeds were grown, and I am inclined to think they make it a point to obtain good seeds from elevated regions grown on an inferior soil. The exchanges are conducted mostly by the local agricultural societies. The Sonderhausen agricultural association have made many experiments in the exchange of seeds, and now recommend, as the result of their experience, that the transfer of "seeds from a good rich soil, to a cold and indifferent one, is profitable, and *vice versa*."

Washburn's Patent Fence.—We direct the attention of our readers to an advertisement which appears in the present issue, of a patent fence by Stephen Washburn, of St. George, Co. Brant. This appears, from the cuts accompanying the advertisement, to be a neat and conveniently portable fence. Prizes were awarded to the inventor at the Provincial Exhibitions held in London and Hamilton. It appears that it can be quickly made and readily put up; and when it is desirable to remove the fence, the panels can easily be separated, packed up in small compass, and hauled off in a waggon. We commend the invention to the attention of those who have occasion for portable fences; and there is scarcely a farmer to whom such a convenience is not of great advantage.

Stock Department.

Errors in Breeding.

In the course of a discussion by the Massachusetts Board of Agriculture last December, the question was suggested by Professor Agassiz, whether we do not injure the vitality and vigour of our domestic animals by the common system under which "every male is made to be nothing but a breeding machine," —in other words, by keeping a number of stallions or bulls, for instance, comparatively limited in proportion to that of the colts or calves we raise, and by keeping them too often in a sort of pampered confinement unfavorable for healthy development. "I believe that it is a great misfortune," said the Professor, "that there are some few stallions which have such a reputation that no man wants a colt from any other animal but them. You would probably get better stock if this idea of the great superiority of a few animals was not so prevalent. These are the points to be considered: To what extent you can reduce your productive males without endangering the stock; and to what extent you can carry out the system of oriental polygamy on the farm without deteriorating the race?"

In some countries of Continental Europe, as our readers are aware, stallions and bulls are habitually worked in harness and in the yoke. In whatever other respects these animals may vary from the standard we desire to attain, it is our belief that in healthful vigour, reproductive powers, and capacity of endurance, they afford an example we might seek to imitate with advantage. And we desire to suggest, more particularly for the consideration of breeders of cattle, and farmers generally, whether they would not promote the vitality and constitution of their herds by training the bulls to perform some active labor? We know of its having been done in a few cases, and that others might perhaps repeat the experiment if it was not contrary to ordinary custom.

As matters now are, the bull is regarded by many as a necessary evil, of which the smaller the number the greater the economy; and it is natural that, as a result, he should be put to service too young and overtasked always. Among men, the classes which are shown by social statistics to multiply the most rapidly, and therefore to be not only the most fruitful, but also the least subject to disease, are not those in which the parents live in luxury and ease, but, on the other hand, among those who labour—perhaps those who labour the hardest. Possibly the evil consequences of "over-feeding," of which so much has been said, are rather due to under exercise —to neglect of the muscular labour which would be for the best interest of the animal, combined often with early and excessive service; and that the true mode of meeting them may be, not by a system of stinting food and semi-starvation, but by securing the better digestion and use of what is eaten, and by properly regulating our practice under the second particular.

As Professor Agassiz remarked, the current system ends in this—that the great bulk of our horse stock "consists of castrated males and unproductive females." And so among cattle, how the oxen and steers predominate; and if we do not keep a corresponding proportion of females not allowed to breed, we do find that the breeding is not as certain and simple a thing with them as we should like—a fact attested not only by frequent complaints from herds kept purely for breeding purposes, but also by the serious losses on our dairy farms, which call so loudly, and as yet so unsuccessfully, for a remedy. These are matters which our breeders should take an interest in discussing and investigating; and it is in the hope of eliciting the views of others, and leading to farther investigation, that we refer to them here.—*Ex.*

BITTING AND CHECKING COLTS.—Geo. M. Jackson, Livonia, N. Y., sends the *Rural New Yorker* some sensible hints on this subject. He endorses the thorough bitting and the reasonable use of the check-rein on colts. He says:—"The only way the horse can be made available and safe as a roadster is to subject him in some way to the practice of bitting, and to the check-rein, not only when breaking him, but when driving him on the road. If unchecked by the bearing rein, a colt is sure to kick, and can easily do so, on the slightest inclination. If the head is checked up they cannot bring themselves in position to kick so easily as otherwise. A young horse should also be accustomed to severe pressure of the bit, so that if he becomes frightened he will obey the driver's force on the rein. If not trained to observe this pressure he is apt to spring ahead on feeling the bit severely."

Cleaning Roots.

ALL farmers who have a due regard for the comfort and health of their stock, are careful to have roots more or less cleaned before feeding them. Much of this necessary work may be done in gathering and storing the crop; and various contrivances well known to farmers are in use to effect this purpose. But, notwithstanding all due care in removing the soil in these preliminary operations, much dirt will unavoidably adhere, and require an extra cleaning before the roots are in a fit state to be given to cattle. This need not, however, be a very troublesome or expensive process; and the accompanying illustrations, of two very convenient and simple forms of root cleaner, will give our readers an idea of the ease with which the work may be done. The illustrations are taken from the *American Farmer*.

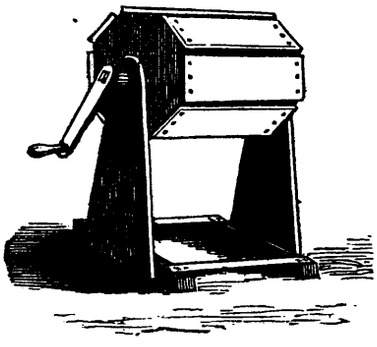


FIG. 1.

Fig. I shows the simplest of the two forms, and is such that almost any one who can use tools at all will be able to construct it. The slits between the boards should be about one inch wide. One slat should be moveable to admit the roots. In making a large one more slats than are here represented should be used. Roots may be completely washed by revolving the lower part of the machine in water.

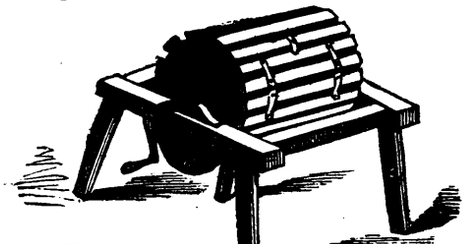


FIG. 2.

The second cut, (Fig. 2,) shows a very similar machine, the construction of which can be readily understood from the illustration. When used, the roots are put in through a door in the side, and the cylinder turned until the dirt is rattled out. The cylinder is two feet across, and three long; the heads made of two-inch plank, and the slats an inch thick, and two wide. The door is put on with a pair of strap hinges, and kept closed by a latch, or hook and staple, or wooden button. The space between the slats is three-fourths of an inch..

Habits of Sheep.

A MAN IN A LUDICROUS POSITION

SHEEP perseveringly follow their leader wherever he goes; but if, in case of sudden alarm, any one of the flock runs forward to escape, and thus takes the lead, the rest generally follow him, regardless of any obstruction. Of this singular disposition we once witnessed an instance in Cleveland, Ohio. A butcher's boy was driving about twenty fat sheep through the city; but they ran down a street along which he did not want them to go. He observed a scavenger at work with his broom a little way before them, and called out loudly for him to stop the sheep. The man accordingly did what he could to turn them back, running from side to side, always opposing himself to their passage, and brandishing his broom with great dexterity; but the sheep, much agitated, pressed forward, and at last one of them came right up to the man, who, fearing it was about to jump over his head while he was stooping, grasped the short broomstick in both hands, and held it over his head. He stood for a few seconds in this position, when the sheep made a spring and jumped fairly over him without touching the broom. The first had no sooner cleared this impediment than another followed, and another, in such quick succession that the man, perfectly confounded, seemed to lose all recollection, and stood in the same attitude till the whole had jumped over him, not one of them attempting to pass on either side, though the street was quite clear. As this took place during wet weather, the man was entirely bespattered over with dirt before they had all passed; and it is impossible to conceive a more ludicrous appearance than the poor fellow made on the occasion.—*Farmers' Advertiser.*

We have seen a performance precisely similar to the above—minus the broom.—ED. C. F.

Horse-breaking and Horse-sense.

A horse's sense is good common sense. Many a man does not know half so much about some things as a horse, and there is a great difference in horses. The horse is not naturally suspicious, but he is timid when young. He learns very soon what his weapons are—teeth and heels—and in what his security lies—flight. His boldness and "the glory of his nostrils" come when "he rejoiceth in his strength." With his age comes the knowledge of his powers, and if he has never been mastered—never made to yield to any will but his own—if he is to be made useful, the struggle must come sooner or later, and man's will or horse-will must triumph. We think it best to begin quite young with colts to control them. So advise to halter a colt while it runs with the mare, and to do it after feeding it with carrots and sugar, until it thinks it will get only caressing from mankind, and has no fear of any man. The colt submits easily, because it is the easiest and pleasantest thing he can do, provided he is not frightened, and would as lief be led as run loose, since the curtailment of his freedom is made up by sweets or carrots. The sense of smell in horses is very acute, and if they are suspicious of anyting, they always approach it cautiously and smell it. They should be indulged in this; and harness, saddle, etc., should all be investigated by the nose as well as by the eye before a more intimate acquaintance is forced upon the horse. A horse ring of 40 to 50 feet in diameter is one of the greatest aids a horse trainer can have. In this a horse too restive and spirited to take a lesson may be tired out, so as to be very docile, and a tired horse is much more susceptible to both favours and instruction, than one full of *vim*, and fire and play. There are a very few simple common sense rules which, if followed, will commend themselves to the horse as well as to the trainer, viz:

1st.—Always *feel* kindly toward a horse, no matter what he does to you, and consequently never show "temper." Remember the horse knows instinctively how you feel.

2nd.—Never go near a horse if you are afraid of him, the horse will know it and take advantage of it before you acknowledge it yourself.

WILTED GRASS FOR HORSES.—Last week a neighbor lost a favorite horse from feeding wilted grass. Several cases have come to my knowledge this summer of horses becoming ill, and refusing to eat at all, or refusing wilted grass when offered them. I have known, in years past, farmers taking their horse teams into the meadow and feeding them grass just cut, and have known horses to die from eating the same. They are usually ailing but a short time, but suffer extremely, apparently.—*Cor. Country Gentleman.*

SALE OF IMPORTED AND THOROUGH-BRED STOCK.—The second annual sale of thorough-bred stock, the property of M. H. Cochrane, Esq., is announced to take place at Compton on the 3rd of October, next. Our readers will find full particulars in our advertising columns. The stock offered for sale consists of cattle, sheep and pigs, of the best breeds, and comprises many very valuable animals, a large proportion of which have been recently imported from Great Britain. Mr. Cochrane's advertisement did not come under the editor's notice in time to refer to it in the usual place; but we nevertheless cordially commend the sale to the attention of farmers, who will find this an excellent opportunity of improving their stock.

Veterinary Department.

Treatment of Pleurisy in the Horse.

In a former number we gave a short outline of the causes and symptoms of pleurisy in the horse; we now proceed to the treatment of that disease. As we have already recommended in other diseases of the chest, the first thing that should be done is to place the patient in a comfortable stable, clean and well ventilated; for by attending to the comforts of an animal, medicinal remedies will prove more effectual. The treatment afterwards must be regulated according to the condition of the patient and the severity of the attack. If the pulse is strong, we would recommend as a sedative the abstraction of four or five quarts of blood, and then administer from two to four drachms of aloes. In pleurisy a larger dose of aloes may be given than either in bronchitis or pneumonia. The body should be clothed, and the legs well hand-rubbed and bandaged; and a hot cloth, wrung out of boiling water, applied to the sides, gives very great relief, and is preferable to blisters in the early stage. If the pulse keeps up, it is also necessary to administer sedatives, as tincture of aconite, about twenty drops every four hours, given in six ounces of cold water; and from the first the horse should be encouraged to take nitrated drinks. If the disease has existed for twenty-four or forty-eight hours, and the pulse shows signs of weakness, bloodletting is not advisable, as effusion into the chest is taking place, and in this stage bleeding would rather tend to increase the effusion. When water has formed in the chest, diuretics and tonics, and even stimulants must be given—the tonics to support the strength, and the diuretics to remove the fluid. Blisters may now be applied with benefit. The hair should be removed off the side of the chest, and the common blister ointment well rubbed in. The patient must also be encouraged to take good and nourishing food. Under this method of treatment, if only a small quantity of fluid has collected within the chest, it may be got rid of. If the effusion, however, has been very great, the only chance of saving the animal is to remove the fluid by the operation of tapping, which is tolerably easily performed. The right side is generally chosen for the operation (as it is the right lung that is usually most affected,) and there is no danger of wounding the heart or its covering. The operation is generally performed between the fourth and fifth ribs, at their cartilages, and nearly on a level with the elbow joint. Make an incision through the skin, and then insert the trochar and canula; and on withdrawing the trochar, place the finger over the canula so as to prevent the air rushing in; in a short time remove the finger, when the water will run out, in some cases in quite a full stream. After the operation the breathing becomes freer, the pulse fuller, and the legs and ears more of their natural temperature. The horse must be kept perfectly quiet, and must have tonics and stimulants frequently administered.

Hydatids in Sheeps' Brain.—Mr. R. Bell sends us the following communication:—"In The Canada Farmer, of Aug. 1, Mr. Adam Clark asks for information respecting a remedy for the grub-worm in sheep's heads. Peter McTavish, a farmer in this neighbourhood, who has had a good deal of experience in the raising of sheep, and their diseases, requests me to say, that some time ago he accidentally discovered that *Spirit of Turpentine* was an almost certain specific for the hydatid. In a considerable number of cases, both in his own and in his neighbours' flocks, he has succeeded in saving the sheep, even where they seemed to be beyond the reach of medicine. The method of application is, to hold up the sheep's nose, and pour into its nostrils about half a tablespoonful of the turpentine. He sometimes wets the nostrils with a little water, before applying the turpentine. The dose may be repeated, if necessary, in a day or two.

Note by Ed. C.F.—Spirit of Turpentine has been long used as a remedial agent for the removal of worms both in human and veterinary practice. In cases of hydatid in the brain of sheep, it is also certainly worthy of trial, but should be used with very great caution.

Bronchocele.

To the Editor of The Canada Farmer:

Sir,—In looking over the Canada Farmer, I have always hoped to have seen something in it about Bronchocele, Goitre, or swelled neck, sometimes call. l big neck. I have a mare that has a lump on both sides of the throat, and which is now of about two years' standing. It did not arise from distemper or cold, as far as I know; for I was working her every day and she was fed as usual, and as far as I have observed, has been always healthy; but I should, of course, like to have the disfigurement removed. She is twelve years old. Will you or some of your numerous readers tell me how to treat it, and whether there is any chance of its coming back again? It does not appear to hurt her. I have tried nothing as yet. She is with colt.

A READER OF THE CANADA FARMER.

Dumfries, Aug. 26th, 1867.

Ans.—Bronchocele, in some districts of Canada, is a very common affection amongst horses. It consists in an enlarged state of the *Thyroid* glands, which are situated one on each side of the windpipe (*trachea*), about three inches from its head. These glands are largely supplied with blood-vessels, but have no excretory duct, and they are therefore described as ductless glands. In sundry cases only one gland becomes enlarged, whilst in others both are affected, and the enlargement seems as one body. We believe it is rare that bronchocele proves injurious to a horse, and it is more of an eyesore than a detriment to a horse's usefulness. Of all the medicines used in veterinary practice, Iodine and its compounds appear to be the most beneficial in reducing those glandular enlargements, therefore we recommend, for the removal of bronchocele, the application of Iodine ointment externally to the enlargement, and at the same time give small doses of the Iodide of potassium daily.

The Dairy.

Canada as a Dairy Region.

We extract from the *Utica Weekly Herald* the following account of Mr. Willard's visit to this country and his impressions in regard to the dairy interest in Canada:—

A few years ago, the impression prevailed that the dairy region of America was of very limited extent; in fact, that out of the central counties of New York, and the Western Reserve of Ohio, it would be difficult to find any extensive range of lands adapted to dairying. The development of the last four years has shown the people of the old dairy districts that nature has not given them a monopoly in this branch of industry. Among the new districts where the cheese factory system has been introduced successfully, and where the business of dairying may be said to have sprung up almost at once in large proportions, is the Dominion of Canada. In our recent visit in Oxford county, we were told that an extensive range of country throughout the Province is well adapted to grazing, and it is estimated there are already 250 cheese factories in successful operation.

When it is taken into account that these have come into existence during the past three years, and that a radical change had to be made in the system of farming over the districts where these factories are located, it must be confessed, the Canadas, in this respect, show a remarkable record.

As far as we can learn, very little cheese dairying was carried on in Canada up to 1863. Of course, isolated instances might be named where a few, or perhaps a large number of cows were kept by persons for the purpose of cheese-making, but the number of such was small, and Canada depended upon New York for the cheese needed in home consumption.

Among the early cheese-makers of Canada may be mentioned Mr. Ranney, who has a fine farm a few miles out from Ingersoll, and who still continues to make up the milk of his herd at home. He is now keeping somewhere in the neighborhood of 100 cows, and has kept a large dairy on his farm for the last twenty years or more. Mr. Ranney and his wife, we believe, emigrated to Canada from the States, and doubtless carried with them a knowledge of the details in cheese making.

As one of the oldest, if not the oldest, cheese-maker in Canada, his farm and dairy were of special interest to us, and we looked through the curing-room and the various appliances for cheese-making with some degree of curiosity. Although Mr. Ranney has been engaged in the dairy business for a good many years, it does not appear that the business was followed by others in that vicinity until quite recently, and had it not been for the factory system, it is doubtful whether to-day cheese dairying would have had even a respectable foothold across the lines. The factory system is one of those American ideas characteristic of a people which is prone to do things with a rush and upon a big scale, and wherever introduced has served to have peculiar influence in revolutionizing the farming of a section.

Canadian cheese dairying as a specialty.

Among the first to introduce the factory system of cheese-making into Canada, was Mr. H. Farrington, from Herkimer, a gentleman well known to the dairymen of New York for his extensive operations in the cheese trade over a series of years, and so far back as when the dairy business had not assumed the gigantic proportions which it has now acquired. He went out to Canada in 1863, on a tour of observation, and seeing at once the advantages that might be reaped by introducing cheese dairying, he selected a factory site in the township of Norwich, in Oxford county, and commenced putting up the necessary buildings and doing the preliminary work of inducing the neighboring farmers to supply the factory with milk.

We had the pleasure of looking over this establishment, located in the centre of a fine farming district, and as might be expected from an old Herkimer county dairyman, well posted up in all the requirements of cheese-making and the trade, we found a very nice lot of cheeses, which in richness and flavor were quite up to first quality.

Mr. F. has recently purchased an excellent farm adjoining his factory, and having married an amiable and intelligent Canadian lady, henceforth casts his lot with our neighbors on the other side of the line. His many friends in the States will be sorry to lose him as a citizen, but in changing his nationality we can assure them he has lost none of his kindly feeling, and entertains his friends in the big mansion with the hospitality and polite attention of old.

Oxford county.

As Oxford county is now the leading dairy county of Canada, we may refer briefly to some of its prominent characteristics. It lies due west of Oneida, and Ingersoll, its chief town, is upon the Great Western Railway, about 100 miles from Niagara Falls. The climate is very similar to Western New York, though a little too far from the lakes for the successful growth of the peach. The apple and pear do well, and we should judge the whole region from the lake to be good for the apple, as the trees looked generally thrifty, and in many places were loaded with fruit. The surface of the country is undulating, with long ranges of rather level land, and nowhere presents the broken or uneven prominences of Herkimer county. The usual character of soil is either a sandy, gravelly or clayey loam, good for barley, peas and wheat, and a fair grazing district. It is not so well watered with streams and springs as Herkimer, and is not equal to it for grass. Upon some of the farms and at some of the factories the supply of water is furnished by pumping from wells.

In passing through the country, one would hardly tell, from its general appearance or from its style of farming or buildings, that he was out of the States. It has a newer look than in the valley of the Mohawk; nor is there that appearance of wealth. The opinion prevails with many in the States that this part of Canada is a very inferior country, but it is an error which should be corrected. Woodstock is the capital town of the county, a straggling, quiet village upon the Great Western road, with more of a Canadian feature in its look than Ingersoll.

Ingersoll is about ten miles west of Woodstock, and has a pleasant site, being upon rising ground and in the midst of a fine agricultural section. It is the principal cheese mart of the county, as well as the shipping station for lumber manufactured in the southern part of the county; it is a bustling, busy place, with a population of about 4,000.

Ingersoll cheese factory.

About a mile out from Ingersoll is located the Ingersoll cheese factory, the largest establishment of the kind in Canada. There are two extensive buildings here, both erected and fitted up with more than ordinary taste, and the whole premises are a model of neatness.

This factory is upon the branch system, and is managed by a company of stockholders, James

Harris, Esq., of Ingersoll, being President. There are seven branch factories, which make up the milk of about 2,000 cows in the aggregate, and deliver the cheese at the central buildings, where they are cared for and cured. At the time of our visit there were a large number of cheese on hand, and a finer appearing lot, for the number, we have scarcely ever seen together at any factory. In boring we found the cheese of good texture, and "full of meat," as the English cheese-mongers would say; in other words, mellow and buttery. Some were a little off flavor, which could not but be expected when the whole season's make were on hand. Perhaps, too, it may be remarked, that the system in Canada of running up milk twice a day, makes it more difficult to secure an uniform flavor, unless great care is taken to cool down the milk and get rid of its animal odor before the operations of cheese-making are commenced.

Mr. Harris, we believe, was the first to introduce the branch factory system into Canada, and so far it has been worked with great success.

THE MAMMOTH CHEESE.

An object of considerable interest at this factory is the immense cheese which was exhibited last year at our State Fair. It stands in a building especially erected for it, and where it was made, and is much the largest cheese of which we have any record. Thirty-five tons of milk were used in its manufacture, and it weighs seven thousand pounds. It is an immense specimen of cheese-making, measuring six feet and ten inches in diameter and two feet and ten inches high. It is perfect in shape and well preserved, being now a little over a year old. The manufacture of so large a cheese as this, and the putting together of such a mass of curds to undergo the curing process without decay or serious damage to flavor, is not without difficulties, and Mr. Harris avoided the errors committed in the manufacture of the Smith cheese, which our readers will remember was exhibited at the State Fair here in 1865, as a mammoth cheese of Canada. The Smith cheese was imperfectly pressed of its whey, or at any rate was of an offensive odor and flavor, when exhibited at the fair, the same season it was made. In the Ingersoll cheese, the curds were all thoroughly pressed in small hoops, and when the whole quantity was got together these small cheeses were passed through the curd mill, broken up fine and mingled together, when they were again submitted to great pressure in the big hoop. Mr. Harris has also a device for keeping the cheese in shape, and at the same time interfering in no way with the cheese in its curing. Outside the cloth bandage, a bandage of stout wire cloth is snugly secured, which prevents spreading, protects it against accidents, and helps to keep it in the perfect shape which it still retains, though more than a year old.

As there are no giants in Canada capable of picking up a 7,000 pound cheese and turning it upon its range, there is an arrangement for this purpose. The hoop is placed around the cheese, and the plank above and below, upon which it in turn rests, are securely bolted together; then the arms on either side are pushed into the iron sockets attached to the hoop; the blocking below removed, and the big cheese stands suspended upon pivots, and is turned with ease, but this operation is now not performed very often.

THE BORING AND FLAVOR OF THE BIG CHEESE.

Of course the owners of a big cheese like this do not care to have it marred by boring, in order to gratify the curiosity of persons who would like a taste of the mammoth. It has, therefore, never been tested but two or three times. By the politeness of Mr. Harris, however, we had the honor of introducing the iron, and tasting of its contents. The trier filled with a solid mass, uniform in color, and of good meaty texture. The flavor is clean but shrup, resembling somewhat the brandy cheeses so popular with those who like cheese with a good deal of taste. We had not expected to find it of so good flavor, and so stated to Mr. Harris, to whom credit is due, not only for manufacturing the largest cheese that has ever been made in the world, but of so making it that it has kept in good preservation until more than a year old.

OTHER FACTORIES, &C.

Through the kindness of Mr. Phelan, of Ingersoll, and Mr. Farrington, of Norwich, who took us in their carriages over a considerable portion of the best sections of Oxford county, we were enabled to see quite a number of factories, and judge something of the character of cheese now being made in Canada. And we can say this, it compares favorably with the cheese of many factories in Oneida and Herkimer. A little improvement might be made at some factories in manufacturing a little finer article, but the cheese, as a whole, are "meaty" and well made. There seems to be a commendable desire among all to improve, and we are convinced that a strong effort will be made to get superior flavor; and when this shall have been accomplished, Canada cheese will be quite as noted in the market as that of the central counties of New York.

The Browsville factory has a very nice lot of cheese. This factory is under the management of Miss Wells, of Oneida county, who has always had an enviable reputation as a first class cheese-maker.

At the Culloden Union, in the township of Dereham, the manufacturers complain that they had much trouble for want of a proper supply of water. They have been forced, therefore, to cool the curds, much of the time, by long exposure to the atmosphere. This, it will be remembered, is one of the cheddar principles and on boring the cheese complained of as cooled off in this way, by necessity, we found it clean, good flavored, and finer than samples that had been cooled off more rapidly.

Another feature prevailing at all the factories, is the use of the Ralph, or O'Neil vats. The engines and boilers are not in general use. Many of the factories are very neatly fitted up with the various appliances and implements, all manufactured in Canada. Our neighbors are quick in seizing upon recent inventions in the States and escaping the royalty of the patentees, since none of these are patented in Canada.

Mr. James Noxon, of Ingersoll, has been doing an extensive business, for the past year, in furnishing hoops, presses, sinks and other dairy implements, and they are tastily got up. It must be confessed that the Canadians have some advantage over the dairymen of New York. Good dairy lands can be had at from $50 to $60 per acre. Cows and labor are cheap, while taxation is a mere trifle.

Markets, however, with them are inferior to ours, and in consequence a large share of their cheese still remains on hand. The question of markets is now engaging their attention, and they are proposing in some way to open communication with the mother country. Oxford county has considerable of the American element in its population, many of the residents having emigrated from the States. This feature gives the country a home-like appearance to one from this side. We found the people thrifty, intelligent and hospitable, quite different from what they have sometimes been represented.

We are under many obligations to Mr. Chadwick, Mr. Harris, Mr. Phelan and Mr. Noxon of Ingersoll, to Mr. Farrington, of Norwich, and to many others for kind attentions, and we desire here to return our sincere thanks to all who contributed to make our first visit to Canada, in many respects so agreeable and pleasant.

A Florida Dairy.

Our dairy woman is an ancient, strong-minded, strong-limbed sybil from South Carolina, who is generally called Aunt Winnah. The whole care of milking, butter-making, and the dispensing of milk and cream is lodged in her hands. We were astonished to hear that the plantation numbered forty cows, and that Aunt Winnal, with one assistant, did all the milking.

But on inquiry we found that this operation consisted only in milking so many of the forty cows as Joe felt disposed to bring up from the woods, or that came up of their own accord to visit their calves, of which there are about fifteen in a pen near the house.

In Florida cows run wild in the woods, every calf is allowed to grow up to maturity, and everybody's calves run together in the woods, being first branded with the owners' names. Many stock owners never see their cattle all together from one year's end to another. Enough calves are kept near the house to attract up some of the cows, and it is considered the proper, orthodox way to let the calf suck while the cow is being milked, in order to make her give down her milk. The consequence is, that the forty cows together do not yield in actual milk more than we have seen given by two good cows treated in the northern way.

Winnah churns every day—unless Joe forgets to bring up the cows, or something else happens, in which case they go without being milked for a morning or an evening— which fact generally dawns on us in the sudden perception of there being no milk or cream for our breakfast or tea.

Winnah makes violent fight for her butter, and feels aggrieved at the demand set up by the ladies of the establishment, for cream morning and night. Somebody "must jus' bring up more o'dem cows ef I's to gib de ladies so much milk and cream; dere won't be no butter shor." We have sometimes described to Winnah the manner of proceeding with northern cows, which seems to fill her soul with horror. She informed us that "de cow would jes dry right up if you kill her chile."

In vain we describe to her the charm of fresh veal, a dish unknown and inadmissable in Florida. We did succeed in bringing an unctuous glow on the face of the cook by describing the charms of veal pie, but Winnah's grew dark as if we had proposed to make it of babies. "I jes as soon see one of my babies killed as one dem calves." The calves, in fact, are the prettiest little things in the world, and at certain intervals Winnah stops her washing or whatever she may chance to be about, because her bowels yearn after the calves, and it suddenly comes into her head to carry some hay to them. Then she will leisurely pet and pat each one, portion off the weaker, discipline the strong ones with a maternal cuff, now and then, to teach them not to be greedy, and then leaning on her elbows over the fence, will smoke her pipe and laugh with full-hearted satisfaction.

If cows were to have a vote they would, doubtless, all agree to come to Florida, for they have it all their own way here.—*Mrs. Harriet Beecher Stowe.*

Consumption of Cheese.—At a champagne breakfast given the other day by a great provision dealer, it was incidentally stated that 821,250,000 lb. of cheese is consumed annually in England. Under the festive circumstances described, one ought not perhaps to be particular to a million or two, but surely the figure is much exaggerated. If all persons ate cheese, this would give an allowance of 40 lb. annually to each—about 12 oz. weekly. But, as every one knows, a very large part of the population never touch it, and the quantity which must therefore be consumed by the cheese-eaters becomes something incredible. We must at least hope that the statistic is incorrect. Cheese, especially of the cheap sort consumed mainly by the agricultural population, is a very imperfect form of food; and as it is all but proved that a large proportion is never digested, it practically becomes an expensive one. Moreover, if this startling figure be correct, a painful idea is suggested not only of widespread poverty which fails to procure animal food, but of ignorance or indolence which cannot or would rather not cook it.—*The Lancet.*

His Cows Always do Well.—In a letter to the New York Farmers' Club, Mr. J. L. Humphrey, of New Bedford, gives the following account of the management by which his cows are exempt from caked bag, and other diseases which afflict many dairies:—I never have any trouble in that direction, no matter how fat the cow may be at the time of calving. I keep the best cows that I can get, and find it the most profitable for my purpose to have them calve only once in eighteen months. I feed moderately on grain—generally oats and corn mixed, with the addition of roots during the winter—so that my cows, though they may milk down thin during the first six or eight months, will always come up again in flesh before I dry them off. I never let them go dry less than *two months*; three is better if it occurs in summer, and I always take away the grain as soon as they are dry, and sometimes before, if too much inclined to milk. For two or three weeks before calving I keep them on a spare but laxative diet—if in winter early cut hay or corn fodder and hay with a few roots, but *no straw*. After calving give one pound of Epsom salts, and a few hours after a warm bran mash—scalding the bran with boiling water—commencing to feed a little hay twelve hours from calving, and gradually increasing to full feed after two or three days. Since I have adopted this course I have had no trouble with the bag but what would readily yield to a few applications of hot water followed by dry rubbing.—*Utica Weekly Herald.*

Nutriment in Cheese.—We all agree that milk contains all the elements necessary for the formation and support of the human frame, and that before dentition it is the most suitable form of nourishment. In the cheese we have all, or nearly all, the elements of milk; and so we have in bread, though in a less condensed form; so that we may safely rely upon bread and cheese as strength-supporting food. As to economy, we must also give for it a most favourable verdict. The price per lb. of meat and cheese are about equal; not so their nutritive properties. 1 lb. of cheese contains only about 6 oz. of water; 1 lb. of meat about 12 oz. of water. In Mr. Morton's admirable "Cyclopædia of Agriculture," vol. i, page 440, under the head "Cheese":—"It will be seen from the foregoing analysis that cheese is an exceedingly nutritious substance, standing considerably higher in this respect than butcher's meat. Dividing the constituents into the principal nutritive groups, cheese is composed as follows:—

Flesh-forming substances.....	31.02
Heat-giving substances.....	25.30
Mineral matter.....	4.90
Water...	38.78
	100.00

The instinct of growing children attracts them to cheese, and it is a great mistake not to let them indulge that instinct. J. J. Mech.

Poultry Yard.

Fall Exhibition of Poultry.

THE raising of Poultry is a branch of industry to which too little attention is in general paid by farmers, who might find in this neglected department of stock-raising, under proper direction, an easy and profitable addition to their resources. Material benefits have resulted from the encouragement afforded in this direction by poultry associations in the old country and other parts of the world. In New York a society of the kind has just been started, and in our own Province the Canada Poultry Association has been for more than a year in successful operation. Encouraged by the results of the spring exhibition, they have decided to hold another show this fall. The competition is open to all without restriction, and in order to make this laudable undertaking as widely known as possible, and to stimulate the interest of Canadian farmers in this branch of their calling, we publish in full the prize-list of the Association and the terms of competition.

Under the patronage of His Excellency, Major-General Stisted C.B., Lieut.-Governor of Ontario.

The Ontario Poultry Association will hold their Second Exhibition of Poultry and Pigeons at the Agricultural Hall, Toronto, on Wednesday and Thursday, November 6th and 7th, 1867.

Competition open to the World.

President—ALLAN MCLEAN HOWARD, Esq., Toronto.

Vice-President—ALEX. MACNABB, Esq., Toronto.

Auditors—G. D. JAMES, Esq., and T. MCLEAN, Esq.

Committee:—Chairman—RICE LEWIS, Esq.

Members—A. McL. Howard, Esq., P. Armstrong, Esq., James Beswick, Esq., George Rykert, Esq., M. B. Hicks, Esq., R. A. Wood, Esq., John Macdonald, Esq., County Treasurer; J. E. Withers, Esq., G. H. Wilson, Esq., T. McLean, Esq., T. Shivers Birchall, Esq., Geo. Roach, Esq.

Hon. Sec. and Treasurer—Lieut.-Col. HASSARD, Box 1070, 521 King Street West, Toronto.

RULES.

No. 1.—Exhibitors are requested to carefully examine the Prize List and Rules, and particularly to notice that they will not be required to come with their specimens, which will be penned and fed by the Society, and returned by any way wished immediately after the Exhibition. To meet the expenses, non-members will be charged 50 cents for each entry of fowls, and 20 cents for each entry of pigeons. Members will be allowed to enter 6 pens free in poultry classes, and 6 in pigeon classes; for every additional pen they will be charged 25 cents in the poultry class, and 10 cents in the classes for pigeons. This rule does not apply to Class 41.

No. 2.—The Committee will make the most careful arrangements for the proper care of the specimens sent for exhibition, but will not be liable for any loss or damage that may happen to them, either on their way to or from or during the Exhibition.

No. 3.—No person will be admitted to the Exhibition previous to its opening except those who are actually engaged in the arrangements.

No. 4.—All eggs laid will be destroyed.

No. 5.—All specimens must be *bona fide* the property of the exhibitors. Specimens may be sent from any part of the world.

No. 6.—The specimens must be named with what the Exhibitor believes to be the correct title and age. If entered in a wrong class, they will be excluded from competition for the prizes. Chickens can not compete in classes for old fowls, except in Classes 23 to 31 inclusive.

No. 7.—High condition, quality, beauty of plumage, purity of race, and uniformity in the markings, combs and other characteristics, will, in all classes, be taken into consideration by the judges in a greater degree than mere weight without these distinctions, if the more perfect specimens are at the same time of a fair average size.

No. 8.—The awards will be made in accordance with "The Poultry Book" by Tegetmeir, and the standard of excellence in the appendix of the same.

No. 9.—The judges will be empowered to withhold a prize or prizes where the specimens are of inferior quality. No appeals from the decisions of the judges will be entertained upon any grounds whatever.

No. 10.—The discovery of any false statement as to the proprietorship of specimens, &c., will be followed by the exclusion of the exhibitors from all future Exhibitions.

No. 11.—One of the main objects of these Exhibitions being to afford an opportunity to the public to improve their collections, at a time when they are best enabled to form a correct opinion on the merits of the several varieties, Exhibitors will be required to state the price at which they will sell their specimens (which must be sold in pens, and not divided), basket included. A prohibitory price, or what appears to be so, can of course be named; but the sale must take place if an offer be made to purchase at the price specified. An Exhibitor cannot claim his own specimens. Exhibitors who do not wish to effect sales, are recommended to name a really prohibitory price; say $100. Ten per cent. will be deducted from all sales made, towards defraying the expenses of the Exhibition.

No. 12.—No alterations can be made in the prices of the specimens during the Exhibition; and persons who have the management of sales cannot take charge of any specimens disposed of privately.

No. 13.—The certificates of entry may be had on application to the Secretary, if by post, by addressing a stamped and directed envelope. No entries can be received unless they are made on the proper certificates, and accompanied by a remittance for the correct amount of entry.

No. 14.—Each pen of birds, consisting only of one cock and one hen, must be packed in a separate box or hamper (carriage paid), with full directions securely and prominently fixed on the top—proper direction labels will be supplied by the Secretary, and the reverse side must have the sender's name and address legibly written thereon, for the return journey.

Exhibitors are strongly recommended to employ the baskets made expressly for this purpose by Mr. Linton, 23 King Street West, Toronto; they will be found less costly in express charges than boxes or coops; and if lined with canvas or glazed calico, the plumage of the specimens will not be hurt.

No. 15.—The entries close on Saturday, 5th October; no entry can be received after 7th October; nor can any alterations be made after they are received by the Secretary.

No. 16.—Specimens *must* be at the Agricultural Hall (at the corner of Queen and Yonge Streets, Toronto), by Tuesday, 5th November, at 1 P.M.; they will also be received during Monday.

As the Judges will commence making the awards on Tuesday, 5th Nov., at 2 P.M., specimens arriving after that hour will be too late for competition.

No. 17.—Members of the Ontario Poultry Association, and Exhibitors and donors of $1, will receive tickets, non-transferable, for admission during the Show.

No. 18.—The hours of admission will be from 10 A.M. to 2 P.M. on Wednesday, to members only; from 2 P.M. to 9 P.M., 10 cents.

Thursday, from 9 A.M. to 9 P.M., 10 cents.

Toronto, 6th Sept., 1867.

PRIZE LIST.

BIRDS TO BE SHOWN IN PAIRS—(*vide Rule* 14.)

CLASS 1—*Cochin China:* Buff or Cinnamon.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 2—*Cochin China:* White or any other color.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 3—*Cochin China:* (Chickens of 1867) any color.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 4—*Bramah Pootra.*
1st Prize, a handsome Water Jug and Salver, presented by J. Robinson, Esq., Sheffield House, King Street, Toronto, value $20.
2nd Prize.....$2.

CLASS 5—*Bramah Pootra:* Chickens of 1867.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 6—*Dorking, colored.*
1st Prize.....$4. 2nd Prize.....$2.

CLASS 7—*Dorking, white.*
1st Prize.....$4. 2nd Prize.....$2.

CLASS 8—*Dorking:* (Chickens of 1867.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 9—*Spanish.*
1st Prize.....$4. 2nd Prize.....$2.

CLASS 10—*Spanish:* (Chickens of 1867.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 11—*Game:* (Black-breasted and other Reds.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 12—*Game:* (Duck-wing and other Greys and Blues.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 13—*Game:* (Any other variety.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 14—*Game:* (Chickens of 1867) any color.
1st Prize.....$4. 2nd Prize.....$2.

A special prize of $10 will be given by the Vice-President for the best pair of Game Fowl exhibited in Classes 11, 12, 13.

A handsome cup will be given by Mr. Hurd, Yonge Street, as an extra prize in Class 14.

CLASS 15—*Hamburg:* Gold or Silver Pencilled.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 16.—*Hamburgh:* Gold or Silver Spangled.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 17.—*Hamburgh.* Any other variety.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 18.—*Hamburgh.* (Chickens of 1867.) Any variety.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 19.—*Polish.* Black, with white crests.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 20.—*Polish.* Gold or Silver.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 21.—*Polish.* Any other variety.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 22.—*Polish Chickens,* (1867.) Any variety.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 23.—*Houdan.* Houdan; Crêve Cœur; La Fléche, and other French Fowl—(any age.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 24.—*Bantams.* Clean legged—(any age.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 25.—*Bantams.* Feather legs—(any age.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 26.—*Turkeys.* Any variety or age.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 27—*Ducks.* Aylesbury—(any age.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 28.—*Ducks.* Rouen—(any age.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 29.—*Ducks.* Any other variety—(any age.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 30.—*Geese.* Any variety or age.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 31.—*Any other variety of Fowl* not mentioned in above classes—(any age.)
1st Prize.....$4. 2nd Prize.....$2.

PIGEONS.

BIRDS OF ANY AGE—TO BE SHOWN IN PAIRS. (See rule 14.)

CLASS 32.—*Carriers.* Any color.
1st Prize, Concertina, given by Messrs. Nordheimer & Son, Toronto.
2nd Prize.....$1.

CLASS 33.—*Pouters.* Any color.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 34.—*Tumblers.* Any color.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 35.—*Jacobins or Frills.* Any color.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 36.—*Fantails.* Any colour.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 37.—*Barbs.* Any color.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 38.—*Owls.*
1st Prize, a Photographic Album, given by Mr. C. A. Backas, Toronto Street.
2nd Prize.....$1.

CLASS 39.—*Turbits.*
1st Prize.....$2. 2nd Prize.....$1.

CLASS 40.—*Any other variety of Pigeon* not mentioned in the foregoing classes.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 41.—Sweepstakes for Game Cocks of any age, to be shown singly.

A sweepstakes of $1 each will be opened for Game Cocks of any age or color. The Stakes to be disposed of as follows:—After deducting 30 cents from each entry for cost of pens, feed, &c.; suppose fifty entries are received, the

1st Prize will be.....$20.
2nd do. ..... 10.
3rd do. ..... 5.

If a greater or less number than fifty are received, the Stakes will be divided in the same proportion.

Several Special Prizes, value $4 and upwards, are expected to be given by the gentlemen of Toronto. Where such Prizes are awarded, the first money prize will be withheld.

F. C. HASSARD, *Hon'y. Sec.*

HOW TO MAKE HENS LAY.—The *Country Gentleman* says:—Many persons feed hens too much for laying. To keep twenty hens through the winter, give three pints of corn and two of oats or buckwheat per day; also about twice a week give them shorts or bran wet with warm, sour milk, of which they seem very fond; make it quite wet and put in a large spoonful of ground black pepper. Give them all the green stuff that can be had, such as cabbage leaves, parings of apples, cores and all, etc. So fed, with comfortable quarters, they will lay all winter. Keep only early spring pullets. Change cocks every spring. In proof of the above, we will merely observe that a neighbour had, among a lot of hens, one that would *not* lay under any circumstances, and as such hens are not profitable to keep, she was considered a fit subject for the pot. On dressing, she was found to be literally filled with fat, instead of egg ovaries.

The Apiary.

Honey, and How to Judge it.

To the Editor of THE CANADA FARMER:

SIR,—There are many kinds and qualities of honey. Almost every kind of flower secretes honey peculiar to itself, and possessing, to a considerable extent, the properties of the plant or flower whence it is derived. Hence, some kinds of honey are very unwholesome or poisonous, being gathered by the bees from noxious flowers; other kinds, again, are simply unpleasant to the taste—not fit for table use. It has been supposed by many that bees make honey; but such is not the case, they only gather it from the flowers that secrete it; hence its different qualities and flavors. As we have few if any poisonous flowers in this country, we have little or no unwholesome honey. In the Southern States much of the honey is quite poisonous, and cannot be eaten until after it has been boiled, which is said to evaporate a portion of its bad qualities. There are people who think they cannot eat honey even in Canada without first boiling it; but if such were to select honey gathered from white clover, or bass-wood, I have no doubt but they could eat it as safely as any other sweet. Bees never mix the different kinds of honey when depositing it in the hive. If bees commence to work on white clover, so long as that kind of honey can be obtained to any great amount, they will work on nothing else, and all that kind of honey is deposited by itself. When they leave that for the buck-wheat, they no longer deposit in the same cells with the clover-honey, but in adjoining cells, or in a separate piece of comb. Experienced bee-keepers are aware of this; and as soon as buck-wheat blossoms they remove all boxes that are nearly full—i.e., if they wish to keep the clover honey pure. Again, when removing honey from boxes for the purpose of straining, those pieces of comb containing buckwheat-honey may be separated, and the clover honey preserved

pure. If some of those who exhibit honey at the fairs were to be more careful as to the kind of honey they selected for exhibition, they would be more likely to obtain prizes. I have seen fine white clover honey greatly injured by having a small portion of buck-wheat honey mixed with it. There being so many kinds and qualities of honey, there is a chance for selection.

As our Provincial Fair is close at hand, I take the liberty to explain how honey should be judged—in other words, to point out what the characteristics of good honey are, for the benefit of those who may wish to compete as well as for those who may be appointed to judge. Though I have no reason to complain, having obtained first and second prizes for two or three years, yet many times, at our county fairs, I have known the prize to be awarded for honey on account of its possessing one peculiar feature, that of being thick; at other times on account of its being of a very light color, while little or no regard was paid to other important qualities. Honey in the comb can only be judged by its appearance, so long as it is exhibited in close boxes so that it cannot be tasted. It often happens that an inferior article of honey in the comb obtains a prize, as the prize is awarded to that which is the whitest; but the whitest comb does not always contain the purest or lightest colored honey; yet, as before stated, so long as honey is exhibited in close boxes, it is proper to award a prize for the whitest comb. It is, however, quite different with honey in the jar, which is open to inspection, and which, to be first-class, should possess the following characteristics: light color, thickness, and pleasant flavor. Though honey may not always possess all these qualities, yet the nearest approach thereto should be awarded the first prize. It would be very improper to award the first prize to a jar of honey on account of its light color, if another jar was of a thicker consistency and better flavor although considerably darker, and so of the other qualities. I may safely say there are only two kinds of honey gathered in Canada which possess all of the above qualities. One is gathered from clover, and the other from that abominable nuisance, the Canada thistle. Both, if properly prepared from pure virgin comb, are light in color. That gathered from the thistle is generally somewhat thinner than clover honey, but its flavor is more aromatic, and, to most tastes, more agreeable, especially when combined in proper proportions with clover honey, whose flavor it overcomes or hides. The proportions are about one part clover to two parts thistle honey. This, when properly prepared, will eclipse all other honey and carry off the prize, as I have proved for two or three years. J. H. THOMAS.

BROOKLIN, ONTARIO, Sept. 4th, 1867.

Dead Bees.

To the Editor of THE CANADA FARMER:

SIR,—The other day I saw in front of one of my bee-hives a large number of bees on the ground, many of them living, but more dead. There was no war, apparently, then with the hive and robbers, and I am at a loss to account for the phenomenon. From the appearance of the wings of those I examined I think they were mostly young, and I conjectured they might have been the recently matured brood of a colony which had become reduced, and abandoned its hive because of the moth or for some other cause. Could you or any of your readers, having experienced a similar phenomenon, give a satisfactory explanation of it? I am, yours, &c. A BEE KEEPER.

YORK TOWNSHIP, 24th Aug., 1867.

NOTE BY ED. C.F.—We have never witnessed a similar case to the one mentioned by our correspondent. It may have been as he supposes, but we would rather conclude that the bees were a late swarm cast by some over populous stock, and which had endeavoured to enter the hive in front of which they lay slain. When bees attempt to enter a strong hive in a body, if not received they will be slain in a body. The live bees found with the dead ones may have belonged to the hive in front of which they were lying, for after slaying their enemies bees often remain long among the carcasses, extracting any honey they may have had in their honey bags; or the live bees may have been among those that were stung, but not yet dead.

Canadian Fruit Districts.

To the Editor of THE CANADA FARMER:

SIR,—A few years ago, Mr. Beadle, of St. Catharines, published in the "Agriculturist" a series of questions addressed to fruit-growers in Upper Canada, with the view of eliciting, in answers thereto, certain or positive information on the subject of "What fruits were adapted to the soil and climate of the different Counties and Townships throughout the Province." As I have been but an occasional reader of your Journal for some years past, I know not whether these questions have ever been responded to satisfactorily, but should feel much pleased to see a full and ample statement of the capabilities of the different sections of the country in relation to fruit culture. Besides, I should think that this was a very opportune occasion for the publication of such a statement, public attention being so much directed to the questions of Railway extension and Grape raising for wine purposes.

To those engaging in the raising of Grapes on a large scale for commercial purposes, the shore of Lake Erie presents the most inviting field. That, however, is an enterprise requiring considerable capital, and is beyond the scope of my enquiries at present. Capitalists may safely be left to seek out for themselves remunerative investments; it is our rural or farming population who, on such a subject as this, need most the discriminating aid of the Agricultural press. And really this is a subject on which there is much need for full and reliable information. Few settlers, whether immigrants or otherwise, think of seeking for soil suited to the cultivation of roots or fruits—wheat land is all they want; but they are hardly settled in their new homestead when they experience a demand for fruit, and then they find out, only too late, that heavy clay is not favorable to the growth of most kinds of fruit trees. And yet there is no enterprise that farmers generally will more cheerfully engage in than that of raising fruit, provided they have the proper land for it.

As yet I have seen no Emigrant's guide-book that would be of much use in searching for such land; for, even with the proper soil, the climate, especially in the spring, may be destructive to some kinds of trees, such as the peach and grape-vine, and then few individuals not possessing much means can afford either the time or the money to personally inspect the many farms offered for sale by land-brokers. To such people, Mr. Editor, free access to your valuable Journal by correspondence is of the utmost service, as you possess so many facilities for obtaining correct data on such matters as cannot otherwise be at their command.

Now, Sir, in view of the new or projected Railway lines so much discussed of late, and also of the fact that a good market and of easy access is an indispensable requisite to the fruit-grower, what part of the country would you recommend as well adapted for raising the peach, pear, grape, &c. for market? The assumed object being to combine general farming as well, land at a cheap farm-rate would be most desirable. I specify no localities, and if you will kindly take the trouble to give the desired information you will confer a special favor on your correspondent, and may be on some other readers of your Journal. M.

WENTWORTH, 4th Sept., 1867.

NOTE BY EDITOR OF THE CANADA FARMER.—We publish the foregoing communication in the hope of eliciting from some of our readers information on the subject brought forward by our correspondent. We are not aware that anything has yet been published in this country bearing on the precise points in question. The Upper Canada Fruit-Growers' Association, at their meeting in January last, appointed a Committee to report on the fruits in their various localities, and it is to be hoped that something may emanate from that quarter to throw light on this important matter. From the experience already gained, it is pretty generally admitted that the section of country bordering on the head of Lake Ontario is especially fitted for successful fruit-culture. The shore of Lake Erie also enjoys a similar reputation; and from accounts which have reached us of the mildness of the climate on our western border, even as far north as Owen Sound, we are inclined to think that the shore of Lake Huron will be found well adapted for raising certainly the hardier fruits, if not the peach and the grape. The subject, as our correspondent observes, is one of increasing interest, and we hope to revert to it again at greater length on some future occasion. In the meantime, we would invite communications respecting the characters of special localities from our readers in various parts of the country.

A Few Days with the Messrs. Miller.

To the Editor of the CANADA FARMER:—

SIR,—I had the pleasure of a day's intercourse with Mr. John Miller, of Pickering, who occupies a situation commanding a view of one of the finest landscapes that is to be met with in this section of Canada. Mr. Miller has some well-bred pure Durhams, and an excellent bull, that is doing good service in the neighborhood. His herd of grades, consisting of cows and young stock, is really superb, illustrating the supreme importance of what I endeavour everywhere to enforce, the necessity and advantage of using *a pure-bred male animal* in all our endeavors to improve permanently the live stock of the country, and wherever practicable, *no other*. The sheep on this farm, consisting of Leicesters and Cotswolds, are very superior, denoting great care and sound judgment in their breeding and management. The high character which the Millers have long earned in this particular department of agriculture, continues to be well sustained. Mr. William Miller, father of John and brother of George, of Markham, has now retired from active business; he is among the oldest, perhaps is *the oldest* improver of farm stock in Canada, and both he and his brother George were favorably known in Scotland in these relations, nearly half a century ago. They now own and cultivate a large tract of very productive land, in this and the adjoining township. Mr. John Miller's four years old Clydesdale Stallion is a very pretty symmetrical animal, rather small, but having the more distinguishing characteristics well brought out; he is a sure stock getter, and his numerous progeny are well liked by the farmers.

Mr. Wilson drove me to Claremont and other parts of Pickering, the agriculture of which has considerably improved of late years. I observed on his farm a good young stallion, finely bred, and some excellent grade cattle. Mr. Wilson has adopted tile draining of late years, with most satisfactory results.

I spent a couple of days with Mr. George Miller, of Markham, whose reputation as a breeder has been so long and extensively known as to require only a passing notice from me. Notwithstanding the heavy loss which Mr. Miller suffered by fire a few years since, and the serious personal injuries which he sustained from the attack of a bull, I found him, in mind at least, as energetic and persevering in the good cause of agricultural improvement as ever. He has still a large herd of excellent Durham cattle; those imported or bred from the Kentucky stock of Alexander, Duncan and Bidford, are particularly fine, forming a type quite distinct from the ordinary Shorthorns one commonly sees in this Province. His imported bull, Bell Duke of Adria, is a beautifully shaped animal, an excellent stock-getter, but disfigured, unfortunately, by the loss of an eye. His imported yearling bull, though not large, is exceedingly symmetrical, and promises to make a handsome animal. He has also several fine one and two years old, and a number of cows that would be a credit to any breeder. I hold it to be a high honor to the agricultural character of Ontario to be able to boast of such herds as are possessed by Messrs. Miller, Christie, Stone and Snell, the benefits of which are fast being felt throughout the country. Mr. Miller's sheep may be said to have a continental reputation; some of his Leicesters and

Cotswolds are among the finest I ever saw, both as regards form, size and fleece; and his Shropshires are much heavier animals than I was prepared to find. The cross of the Leicester and Cotswold produces a sheep admirably adapted to the climate and pasturage of this northern section of the American continent. I was pleased to observe that, although Mr. Miller's heavy land was rather severely afflicted by the excessive rains of spring, followed by a rather severe drought of summer, both his cattle and sheep had plenty of good pasturage, on which, they entirely depended, keeping in a good healthy condition, admirably adapted for breeding. Mr. Miller has a domain here of eleven hundred acres, some of it tile-drained, and mostly well farmed, with the exception of some that has been leased, but which is now in his own hands, that will require both time and labor to clean and restore. This leasing of land in Canada has generally a downward tendency. The Canada thistle is alarmingly spreading on all the badly tilled lands in this section of country. In going through Norfolk and Elgin this summer, I was struck by the general absence of this fearful pest, which appears not yet to have got a foot-hold, or rather root-hold, in that part, and I would seriously advise that it never should.

I may just add that Mr. George Miller is not only a good farmer and successful breeder, but he shows a practical interest in those minor matters the aggregate influence of which so powerfully affects the comforts and enjoyments of country homes. He is an extensive apiarian, takes much interest in poultry, is surrounded by a large orchard of the various kinds of fruit of the most approved sorts, and has a greater collection of conifers, of the best European varieties judiciously planted both for ornament and shelter, than I have ever before seen in this country. I have seldom spent a day so agreeably and profitably as I did with George Miller, whose operations are fruitful in useful suggestions, and their results clearly indicate the path which leads to healthy progress and improvement.

Mr. Miller drove me to Scarborough, where I found the President of our Provincial Association, Mr. J. P. Wheeler, busy in cutting down an excellent field of wheat. Mr. Wheeler is now devoting his principal attention to the breeding and keeping of Ayrshire cattle for dairy purposes. There is a cheese factory near Woburn, and two in active operation in Markham. The Hon. D. Reesor has devoted much time and attention to the promotion of this important movement. Having only an hour or two previous to the arrival of the train, I could only cast a cursory glance at Mr. Wheeler's farm, which evidently shows to a practised eye traces of neatness and good management, which one would like to find more generally prevailing.

GEO. BUCKLAND.

Toronto, August, 1867.

Hints in regard to Agricultural Meetings.

To the Editor of THE CANADA FARMER:

SIR,—Permit me, through the columns of the farmers' own paper, to call the attention of the delegates who may attend the exhibition at Kingston, to the desirableness of changing the time for holding the annual meeting for the election of officers and the transaction of other business. Who has ever attended those meetings and not felt an uneasiness in regard to the proceedings? There is a want of sociability—a hurried drive, and lack of system in all its arrangements. All this, I believe, arises from the inconvenient time at which the meeting is usually held. Delegates are frequently judges also, and leave their homes on Monday or Tuesday morning: they get their work completed; and at the same time see all they want to see by Thursday noon, when they are tired and anxious to be home. If within fifty miles by rail, they probably go, and return by the first train on Friday, perhaps in time to see the last half of the business hurried through, and are, consequently, disgusted. If the delegate is also an exhibitor, he is anxious about packing up and preparing for a homeward movement, and as a matter of course can not enjoy the meeting.

Now, Sir, would it not be advisable to imitate our cousins across the border and make the annual meeting a happy re-union of kindred spirits—a time for social enjoyment and mutual improvement? If Wednesday evening is too little, take Thursday evening also. Farmers want some opportunity to fraternise and become thoroughly acquainted, and in what way can they more profitably spend their evenings in our great cities than in social meetings like those which our neighbors are introducing? The business of the meeting would be more systematically and deliberately transacted; after which discussions on some of the most important subjects connected with the progress of the science of agriculture, and the welfare and prospects of the association, might be entered into, with both pleasure and profit to all attending. The evenings are long, and much might be done and well done. I know that very many feel the necessity for a change, and I trust, Sir, that it will meet your views, and that your influence may be given in this direction.

R. W. SAWTELL

WOODSTOCK Sept. 4th, 1867.

NOTE BY THE EDITOR OF THE CANADA FARMER.—The suggestions of our correspondent are very timely, and worthy of due consideration. It is highly important that ample time should be given for the deliberate transaction of the regular business of the society; and in conjunction with this object we very heartily endorse Mr. Sawtell's recommendation to give the delegates and others an opportunity of pleasant and profitable intercourse. We observe that in the coming exhibition of the New York Agricultural Society, at Buffalo, three evenings are set apart for discussion, the subjects duly arranged, and persons appointed to open the question for each evening. Such a course cannot fail to be productive of much good, and we cordially commend the example to the members of our own Provincial and other agricultural societies.

AN AMATEUR TAXIDERMIST. Frank Argyle sends us the following enquiry:—"Will some of your numerous readers please inform me what is the method of preserving and stuffing the heads of deer, bear, and other large animals?" Perhaps some experienced naturalist will be able to give the desired information.

SEEDLING OR GRAFTED FRUIT TREES.—J. Mell. enquires whether we would recommend the raising of seedling fruit trees, or whether in all cases grafted fruit is preferable. Except for the purpose of experiment, which may be left to those who have both space and leisure for the trial, we should always use grafted fruit trees.

The Canada Farmer.

TORONTO, CANADA, SEPT. 16, 1867.

Provincial Exhibition.

WE learn that preparations for the approaching exhibition have for some time past been actively carried forward on the fair grounds at Kingston; the former buildings have undergone all necessary repairs, new cattle sheds have been erected, and increased accommodation provided in various ways. The city has been liberal in furnishing funds to meet these expenses, and no exertion has been spared to render the coming exhibition a worthy and successful undertaking.

The severe drought from which the region bordering on Lake Ontario chiefly has so long suffered may affect somewhat unfavorably the show of root crops and vegetables; but other sections of the country have been more fortunate, and there will, no doubt, be at least an average show of field products. A considerable number of newly-imported animals will be exhibited, and will doubtless add not a little to the interest of the exhibition, as well as furnish most valuable additions to the rapidly improving stock of the country.

We shall endeavor to furnish in our next issue as full reports of the various departments as our space will permit; and as the time of the exhibition comes pretty close upon the usual date of publication, it is probable that we shall unavoidably be a day or two later in going to press, but we will use our best endeavors to furnish our readers with the number of the CANADA FARMER, for the 1st of October, as near that date as possible

Hired Help.

THE farmer's calling, like every other department of human enterprise, has its difficulties and drawbacks, and amongst these, one of the most vexatious, in this country at least, is the trouble of obtaining efficient and faithful help. The "labour question" has been a source of contention and no small embarassment in the "old country," and the problem of right-adjusting the relative claims of employer and employed has been much discussed, and has given rise to no small perplexity. There, however, the chief hardship of the case has fallen to the lot of the labourer, and it was his condition that required to be ameliorated. The subject has been pressed on the attention of land-owners and farmers by the increasing scarcity of help, arising from extensive emigration of the labouring classes to more promising regions; and considerable changes in favour of the latter have in consequence been effected, both by the adoption of a higher rate of wages, and the introduction of various schemes to give the humbler class of the employed a stronger and more permanent interest in the land they till. But in Canada it is not the labourer who can make out a substantial grievance, or move our pity, with the tale of his privations and struggles in making a scanty pittance of eight shillings a week provide not only for his own wants, but also for those of his family. Here the hired man may become rich if he will, let whoever else be the loser. Living at scarcely any expense, having board provided for him, and receiving monthly from fifteen to twenty dollars permanent wages, he can with ordinary prudence lay by, yearly, a considerable surplus, sufficient to enable him in a comparatively short period to rent and work a farm on his own account, if not to buy land and become the happy owner of fruitful acres. In harvest time and all seasons of additional pressure, the case is even more in favour of the labourer. In some instances, such is the scarcity of help and such the urgent need of hastening on the work to be done, that the occasional "hand" can almost demand his own terms and rate his services as high as he pleases. We have known half a crop of wheat offered to any one who would harvest it.

Now, such a state of things is certainly not favorable to the owner or tenant of a farm, but there is yet another difficulty which makes the case still worse for the employer. It usually happens that the steadiest, most faithful, and altogether the best hands are more or less permanently engaged, and the extra help, for which a dollar and a half a day, perhaps, besides board, is demanded, must be taken from a comparatively idle and roving set, who have a keener taste for high wages, fat food and whiskey, than for hard work, who are never troubled with a conscience, and who are lazy in proportion to the exorbitant amount of the remuneration they receive.

The mischief that such an one will do, is often not to be measured simply by his own inefficiency. Introduce him into a harvest-field, and he will contaminate all the rest of the workers. There is a sort of gang system amongst field labourers, and the amount of work performed by the laziest or naturally slowest is sometimes the measure of that of the whole field, the abler men keep pace with the least efficient. Sometimes, it is true, the reverse is the case, but general experience shows that a bad example is more readily followed than a good one. Who has not seen one such spirit infect with discontent and insubordination a band that were previously willing and faithful workers? He is, perhaps, one of a threshing party, and shows his quality and mood at the outset by being especially particular about the post assigned to him, his sight is weak, or he is subject to asthma, and chaff hurts his eyes or his lungs, he must be a long way from the tail of the machine, and if he is allowed, or does not deem himself pretty closely watched, will take up a comfortable position

on the straw-stack, and lazily swing his fork to and fro occasionally, with sometimes a little straw at the end of it—and all this, forsooth, for a dollar a day, besides his board. No wonder that, with such an example in the midst, the master finds it hard to persuade any one to take the undesirable posts, and must either have recourse to entreaty or the bribe of extra wages or whiskey, or take the hardest post himself. The case supposed may be an extreme instance—exaggerated it is not—and, no doubt, most men would turn such a fellow off the premises at very short notice; but every farmer in this country knows that the difficulty under consideration exists to a large extent, and yearly encounters it more or less in his own experience; he knows to his cost how large an amount is annually deducted from his profits, if not rather added to the total of his loss, by the extravagant sums he is compelled to pay for hired help. If he is disposed to be liberal there are plenty to fleece him, and he is not long in discovering that "honest labour" is almost as rare as it is valuable and honourable. He suffers, too, not only from the exorbitant price he has to pay in wages, but often from the reckless and wasteful manner in which the "occasional hand" will use his substance.

This mention of waste brings to mind a very common practice, almost too petty for animadversion—so much so, indeed, that few farmers, though they may chafe under the imposition, will venture to make it the subject of complaint, and it may not be amiss to refer to it here, in passing. No one will question that a day's pull on the horse-power of a threshing-machine is pretty hard service for the farmer's team; but, somehow, a *season* of such work seems to agree remarkably well with the horses belonging to the *owners of the machine;* these animals come out at the end of the time in better condition than when they commenced; and most farmers know very well how the thing is managed. The receipt is somewhat after this fashion:—Let the driver whip up the farmer's teams and see that their traces are constantly on the stretch, but deal very gently with the beasts that regularly accompany the machine; train them to hang back, and, just to preserve appearances, keep the traces straight, but no more; next, feed them during the whole season at the expense of the employers, and do not spare their hay, or sheaves or grain. You have Scripture warrant not to "muzzle the mouth of the ox that treadeth out the corn," and the same principle must apply with greater force to the treatment of the nobler beast—half a bushel of oats for each horse three times a day, and more hay than they can possibly eat, is about the modest allowance. Under such a regimen the animals can hardly fail to thrive. All this, however, would scarcely excite a very serious notice or censure, if it were not for the reckless waste that too often systematically accompanies the whole proceeding. That is the feature that most justly excites the farmer's indignation; and a visit to the stalls, after the horses have taken their departure, may well excuse a little honest wrath. It is not pleasant to see the deserted mangers still stuffed with half-eaten sheaves, and the floor littered thick with others in the same condition, mixed with the soiled hay that has formed the largest proportion of the horses' bedding This is no exaggerated picture; we have seen it scores of times.

But to return to the main question; it will readily be admitted that one of the chief hindrances to successful agriculture in Canada is the expense of, and the difficulty of procuring at any cost, efficient and honest help; while the best means of mitigating the evil are not very clear. One or two suggestions may, however, be submitted in the hope of leading others to a thoughtful consideration of the perplexing subject, and in the firm conviction that time and the course of events will surely, though it may be slowly, adjust this knotty difficulty and bring about a better state of things.

First and foremost, let the legislature of our new Dominion be urged to a liberal and energetic policy, with a view to encouraging immigration into this country. Some changes in the system hitherto pursued must be necessary, or we should not see such hosts of hardy emigrants passing through our fair and fertile land, to carry their industry into the not more inviting regions of Wisconsin, Minnesota, and other Western States.

Again, let no one enter on the business of a farmer who is not practically conversant with its workings, and able to take his full share of its labour. Canada is not the place for "gentlemen farmers"—whose notions of superintending a farm consist in riding about on a pony with a gun in hand and a couple of sporting dogs at one's heels, just to give a glance at the labourers in the field, and then off for a day's amusement. We know a party who thinks it is a poor business that will not keep one idle hand in the concern. Now, we believe, that judged by this standard, farming in Canada is a poor business. The master's hand, if he would secure efficient labour, is as needful as his eye or head. It is no easy thing in this country to superintend a farm by proxy. The steward or bailiff of England will be the land-owner here, and will be cultivating his own acres instead of acting as the agent for another.

Next to taking a practical share in the business of the farm, it will be desirable to aim at being as far as possible independent of extra hired help. To this end, cultivate no more land than you have capital for. Have in your own possession as much farm machinery of the best kind as possible, and engage as much regular help for the year, or at all events for the season, as your means, economized and taxed to the utmost, will afford. The additional work or manure thus put on the land will bring a large return, and you will not have to look abroad for chance and often most unsatisfactory assistance.

Again,—and we would urge this recommendation most emphatically—ESCHEW WHISKEY. Do not think to get more work out of your hands by this most pernicious indulgence. Experiment a hundred times repeated, and long experience, under every diversity of circumstance, have fully established the fact that alcohol will not add to a man's muscular power, to his endurance, or to his abiding cheerfulness. On the contrary, it will, especially in hot weather, considerably diminish them all. It will be a happy day for Canada, should it ever dawn, when the force of public opinion, or the over-mastering power of Christianity, shall frown down this curse of the country, the source or aggravation of half the maladies of the body, and diseases of the mind—the fruitful parent of crime, poverty and ruin.

Not least important, though mentioned last amongst the means of mitigating the evil under consideration, would be the habit of cultivating a neighbourly spirit of mutual help. Let farmers, one and all, set their faces against imposition of every kind, in their own business transactions, and in the conduct of those whom they employ. Let them lay shoulder to shoulder, and be ever ready to assist one another, and they will learn that the selfish principle of acting every one for himself often defeats its own ends, while the opposite, helpful and kindly spirit, is not only the most pleasurable and noble, but, generally, also the most successful and prosperous.

IMPORTANT SALE OF STOCK.—Our readers will learn by an advertisement in the present issue, that the annual sale of Mr. Stone's very superior stock is to take place on the 16th of October next, at Moreton Lodge, Guelph. He offers for sale a fine lot of pure-bred Shorthorn and Hereford cattle, a large number of Cotswold and Southdown sheep, some Berkshire pigs, and choice Poultry. The excellence of Mr. Stone's stock is too well known to need any recommendation from us. The announcement of the sale is sure to bring together a good company of buyers both from our own Provinces and from the adjoining States.

The Price of Grain.

IT is always difficult to speculate correctly on the probable prices of grain. If it were otherwise, the grain trade would not be so uncertain as it is; and neither very large gains nor very sudden and extreme losses would occur, as they now do, among grain buyers. The best informed and most cautious among them are not unfrequently taken by surprise in the fluctuations of the market. One source of the difficulty at this season of the year, before much of the grain has been threshed, arises, no doubt, from the erroneous estimate often formed even by the farmers themselves as regards their crops from appearances in the field, an estimate which has to be corrected, often by a considerable deduction, when the true state of the case has been disclosed by test of the threshing machine. From this and other causes it is scarcely possible yet to obtain correct information in regard to the amount of grain likely to come into market, and the difficulty is not a little increased by the fact that the grain-growing region comprehends so many different countries. In the face of these circumstances, no one can properly express any other than a guarded opinion on the subject.

Judging by the most recent accounts, it would appear that the supply of most of the cereals, of wheat especially, in the United States is this year above an average; in our own Dominion it is certainly not below an average yield; in England it is expected there may be some deficiency; in France also a falling off is reported; but in other European countries the crops have been in some abundant, in nearly all satisfactory. Taking the whole into account, there is no ground for apprehending any deficiency, and no reason to expect the maintenance of the high prices that have ruled for so many months past. Neither, however, on the other hand, does it appear very likely that there will be any extreme fall in prices. Farmers, we think, may look for good and remunerative prices for their wheat and other grain, while consumers also may anticipate a relief from the pressure of the very unusually high rates of the past year.

MONTREAL VETERINARY SCHOOL.—The winter session of the Montreal Veterinary School is announced to open on the 20th of November next, under the auspices of the Board of Agriculture for the Province of Quebec. This excellent institution is connected with the Medical Faculty of McGill University. The Veterinary department is conducted by D. McEachren, Esq., whose large practice and experience well qualify him for the task. As a lecturer he is not unknown to the people of Ontario, having delivered lectures in connection with the Board of Agriculture for three sessions in Toronto. The course of instruction in the Montreal School is, we understand, most complete. The pupils, besides attending the Veterinary lectures, are compelled to attend also several of the medical classes in the McGill College. These institutions are of incalculable benefit to the agricultural community, and we hope to see them flourish and multiply in the land.

Agricultural Intelligence.

ANNUAL EXHIBITION OF THE UNITED AGRICULTURAL SOCIETIES OF WENTWORTH AND HAMILTON.—The united exhibition of these societies will be held at Hamilton, on Tuesday and Wednesday, the 8th and 9th of October next. We have received the list of premiums, which comprises a very full opportunity of competition in all the usual classes—in stock, grain, roots and vegetables, dairy products, agricultural implements, general and domestic manufactures, fine arts, and ladies' work—and includes also a few prizes for the best field of roots, the inspection and decision to be made on and after the 21st of October. A very large amount altogether is offered in prizes, and we have no doubt that the high character of these societies will be sustained in the coming exhibition. The payment of $1 and upwards, constitutes a person a member of the Societies for one year if paid previous to the first day of the show; on the days of show $2, to entitle him to exhibit. The Secretary will receive entries as follows: by letter, at Ancaster, until Friday, the 4th; at the Anglo-American Hotel, on Saturday and Monday, the 5th and 7th days of October.

GALT SEED FAIR.—Galt Fall Seed Fair, which was held yesterday, was one of the best attended we have seen. Some hundreds of teams were in town, and our streets were crowded with people. About 3,500 bushels of wheat were exchanged and sold. The Treadwell variety seemed to be the favorite for seed wheat, and the price ranged from $1 50 to $1 87½ per bushel. Amber, Soule's and Diehl were also offered in large quantities and of superior quality. The common market prices were in advance of the past few weeks. On the whole, the Seed Fair was a great success, and our merchants did a good business.—*Galt Reformer, 28th Aug.*

THE YORKSHIRE AGRICULTURAL SOCIETY'S SHOW.—Our friends who hail from Yorkshire, and who, no doubt, still retain a reverent love for the old country, will be interested to learn that our English papers all give very favorable reports of the Yorkshire Agricultural Society's annual show, which was held at the old-fashioned market town of Thirsk. The *Farmer* (Scottish) says, in reference to it—that the show of implements, and the trials, were of a very satisfactory character. The display of sheep is pronounced to be the best ever witnessed in the county. In pigs, as was to be expected from the locality being especially a pig-raising section of the country, the exhibition was of surpassing merit. Similar praise is awarded to the other classes, especially horses, which in the carriage and hunting varieties especially, were of unrivalled excellence.

SALE OF LORD FEVERSHAM'S SHORTHORNS.—We learn from the *North British Agriculturist* that, on Tuesday, the 6th August, at the Griff Farm, Duncombe Park, Helmsley, Mr. Strafford sold the greater part of the renowned herd of shorthorn cattle bred by the late Lord Feversham. The sale was by auction, and without reserve, and being held the day before the great Yorkshire Show at Thirsk, attracted an extremely large company; fully 1200 surrounded the ring. Shorthorn breeders from all parts of the country attended the sale. The herd has passed through the cattle plague period without the loss of a single animal, although plague surrounded the district, and had, doubtless, a depressing effect upon the sale, which was decidedly sluggish, a third figure being reached only in one instance. About forty animals were sold, many of them at prices much below their cost.

Entomology.

Humble Bees.

ROBBING bees' nests has, no doubt, always been a favourite sport with boys in the country; we can well remember how we used to look out for them about this time of year, around stumps and under logs in the old pasture fields, and how we used to watch how they flew, and spy out where they had their nests between the weather-boarding and lining of the barns, and in all sorts of nooks and corners. Great used to be our delight when on some fine September afternoon one of us boys would come running breathlessly to the others, shouting out that he had found "such a jolly big bees' nest," and that one of them had given him such a chase! Away we would all scamper, arming ourselves with twigs of cedar, and broad bats made of shingle, till we came near the scene of action; then we would cautiously advance, give the nest a little kick, and put our ears as close as we dared to listen to the buzzing inside, knocking down with our bats any bee that came out to see what the matter was. A few more kicks or pokes *with a stick would soon put the whole colony in* commotion, and then would begin the tug of war—furious assaults being made on our part and desperate rallies on the part of the bees; sometimes the invaders would be so fiercely repulsed as to be forced to take to their heels, stung perhaps under the eye or about the neck and face by a "forlorn hope" from the besiged. But soon the contest would be renewed, and the pigmy defenders of their home would suffer for their gallantry with the loss of their lives, and the unequal conflict would end in our digging out the sweet spoils from the inmost recesses of the nest. The sport was, doubtless, a cruel and wanton one; but when will boys who pelt stones at innocent frogs, rob the nests of gentle birds, or tie tin pans to dogs' tails, think twice about robbing bees' nests? What is sport to them, is too often, alas, death to their victims! But happily, however, these amusements generally proceed from sheer joyous animal spirits, and not from any wanton love of cruelty, and the boy grows up to be a kind and tender-hearted man.

Thinking that some of our boy-readers would like to know something more about the habits and lives of the Humble (or Bumble) bees, whose nests they rob, we shall attempt to give some little account of them. Early in the spring the big, handsome, yellow-uniformed queen-bees, who alone have lived through the winter, may be seen buzzing about, searching everywhere for a suitable place for their nest, which they almost always make in the deserted winter quarters of some field or barn-mouse, where they find ready for them purposes a nice, soft mass of dry hay and moss. Here the queen stores a little pollen and honey, gathered from the early spring flowers, and lays in it half a dozen to a dozen eggs; then she gathers more pollen and honey, and lays more eggs, till the colony is complete. The eggs, according to Mr. Putnam, are "laid, in contact with each other, in the cavity of the mass of pollen, with a part of which they are slightly covered. They are very soon developed; in fact the lines are nowhere distinctly drawn between the egg and the larva, the larva and pupa, and again between the latter and the imago; a perfect series, showing this gradual transformation of the young to the imago, can be found in almost every nest.

"As soon as the larvæ are capable of motion and commence feeding they eat the pollen by which they are surrounded, and gradually separating, push their way in various directions. Eating as they move and increasing in size quite rapidly, they soon make large cavities in the pollen mass. When they have attained their full size they spin a silken wall about them, which is strengthened by the old bees covering it with a thin layer of wax, which soon becomes hard and tough, thus forming a cell. The larvæ now gradually attain the pupa stage, and remain inactive until their full development. They then cut their way out and are ready to assume their duties as workers, small females, males or queens, according to their individual formation.

"It is apparent that the irregular disposition of the cells is due to their being constructed so peculiarly by the larvæ. After the first brood, composed of workers, has come forth, the queen bee devotes her time principally to her duties at home, the workers supplying the colony with honey and pollen. As the queen continues prolific, more workers are added, and the nest is rapidly enlarged.

"About the middle of summer, eggs are deposited which produce both small females and males. All eggs, laid after the last of July, produce the large females, or queens, and the males being still in the nest, it is presumed that the queens are impregnated at this time, as on the approach of cold weather all, except the queens, of which there are several in the nest, die. It is desirable to ascertain whether the queens remain torpid during cold weather, and what use is made of the pollen and honey stored during the last of summer and in the fall, which, perhaps, is food for the queens during the mild weather in spring before plants are in blossom. But little wax is made by the Humble Bees, as it is only used for covering the cocoons of the larvæ, for thinly lining the nest on the inside, strengthening the old cells which are used for honey pots and occasionally covering these pots, and propping up the old cells."*

Humble Bees are of a much more amiable disposition than either Honey Bees or the fiery-tempered wasps; their sting also does not produce such grievous pain or swelling as that of the others. As a proof of their good nature, Huber relates that he once observed some hive-bees pay a visit to the nest of some of our friends, and deprive them of all their honey, without suffering any molestation; and then, not content with their plunder, they coaxed from the Humble Bees all the fresh supplies they brought in. This continued for some time, till some wasps thought they might as well get a share of the honey too, but a visit from the "Yellow-jackets" so disgusted their big cousins, the bees, that they left their nest at once, and never returned!

*Notes on the Habits of some species of Humble Bees, by F. W. Putnam, in the proceedings of the Essex Institute, Salem, Mass., vol. iv., Oct. 1864. There is also an interesting account of various kinds of Humble and other Bees in the Sept. No. of the *American Naturalist*, art. "The Home of the Bee," by Dr. Packard.

California Bees.

To the Editor of THE CANADA FARMER:

SIR,—Having seen to-day what are denominated California Bees, I am anxious to know from you, or some of your correspondents, what the things really are, what is their use, and whether they may classed as plants or animals? I shall endeavour to describe these curiosities, lest you may not have seen them. The term "bee" as applied to them is really a misnomer. They are aquatic, and will die if not kept in and supplied with fresh water every twenty-four hours. Their appearance, in the bottle in which I saw them, is similar to rice, and when removed from their watery element they resemble small grains of boiled rice. When squeezed between the fingers they very much resemble starch. They do not in any other respect resemble anything "in which is the breath of life," neither do they seem to possess any organs. And yet they possess the power of locomotion, moving from the bottom of the vessel to the surface of the water sometimes only half way to the surface- and returning at leisure. They move among themselves at the bottom also. Their increase from a few to hundreds in a short space of time is very remarkable. The scent from the bottle is peculiar, and the water off these minute animals is said to cure consumption and to be very wholesome. This is the purpose for which they are kept. The taste of the water in which they are kept is not at all palatable, though when used for some time it is said to be found quite agreeable. To us they are puzzling creatures; perhaps you will be so kind as to let us into their secrets.

G. T. EVANS.

Danfield P.O., London Township, Aug. 19, 1867.

NOTE BY ED. C. F.—We wrote to Mr. Evans requesting him to send us some specimens of these wonderful "California Bees," in order that we might be able to discover by a personal inspection what their nature and character really are: as we have heard nothing further from him, we must be content, we presume, to remain in our present state of ignorance. With regard to the nostrum for the cure of consumption, we are inclined to think that it has as much affinity to a true remedy as the specimens in question have to ordinary bees.

BLACK SWALLOW-TAIL BUTTERFLY.—W. Burgess writes from Mimico as follows:—"I send you two specimens of grubs. The large-headed one is quite unknown to me. The loop-worm is a variety I have not seen before. The former was found in a closet, the latter on a black currant bush. We have about one-fourth of an acre of currant bushes, and all growing free from shade uninjured by the currant worm. We have also a quantity growing near the house, and much shaded, being much eaten, and evidently would have been entirely destroyed without repeated manipulations. I have observed the same difference elsewhere."

NOTE BY ED. C. F.—The large caterpillar turned to a chrysalis before it reached us; it was a specimen of the larva of the Black Swallow-tail butterfly (*Papilio Asterias*, Cramer). The loop-worm is unknown to us, but is not likely to occur in sufficient numbers to be of practical importance.

SPHINX CATERPILLAR.—Mr. Robert Linton, of Scarborough, has sent us a large sphinx caterpillar, without either note or comment. It is between three and four inches long, of a beautiful pale green color, with a brown band on each side of the head, and narrow oblique bars of purple and cream color along the sides; the extremity is furnished with a sharp, stiff tail, of a brownish color, which is often mistaken for a horn and regarded as an object of terror. This caterpillar may be handled with perfect impunity, notwithstanding its apparently fierce aspect and large size; it feeds on the leaves of plum trees, never appearing, however, in sufficient numbers to cause much damage, and turns into a dark brown chrysalis in the ground, where it remains till spring, finally appearing as a large narrow-winged ash-colored moth, with white markings. The moth is termed the *Sphinx drupiferarum*, Abbot and Smith.

Winter Mulch.

To have a well-kept garden in such a climate as ours, free use must be made of covering material on the approach of winter. It is only the hardiest shrubs and trees that can set our intense cold at complete defiance, and there are seasons of unusual severity during which some of these visibly suffer, showing the effect of the ordeal through which they have passed by the lateness and tardiness of their leafing out in the following spring. Our nurserymen and florists are in the habit of classifying plants and shrubs as hardy, half-hardy, and tender. Those denominated hardy are considered capable of withstanding complete exposure to our severest winter weather. The half-hardy class are supposed to require protection in the way of mulch. Those called tender are thought to need indoor preservation. But actual experience shows that many hardy things do much better if lightly covered, while on the other hand, not a few tender things may be safely kept out of doors if snugly protected. Snow, if we could always have it, or could produce it artificially at the setting in of frost, is the very best mulch the vegetable world can have. It is nature's white counterpane, beneath which her children, when comfortably tucked in, securely pass through their wintry sleep. But snow is fickle as fashion,—we generally get more or less of it,—often, however, it does not fall until successive freezings and thawings have done irreparable mischief in the garden; while as often it melts away in mid-winter, and leaves the ground exposed to the merciless play of the elements. In some parts of the country the fall and continuance of snow are quite regular. These are favored spots, where the toil and anxiety of the horticulturist are far less than where, as in the majority of cases, a battle of preparation and resistance must be fought on the approach of winter. With these exceptions, it is universally needful to resort to mulching, and fortunately there is no lack of suitable material for the process. Nature has another covering beside snow, and one of scarcely less value. We refer to forest leaves. These make a first-class mulch, and are to be readily had in all localities. They are especially adapted to tender plants that die down to the roots annually, to bulbs, and herbaceous perennials. It is possible wholly to exclude the frost by a stratum of leaves a foot or a foot and a half in thickness, and there are no doubt many plants usually kept in green-houses, that might be safely wintered out of doors in this way. But ordinary forest leaves, like some other coverings, lie rather too closely for such plants as need free circulation of air, and the live foliage of evergreens, when it can be had, is for many plants preferable to the dry foliage of deciduous trees. Happy are they who have a balsam grove or cedar swamp within easy access. They need be at no loss for suitable means of protecting rose bushes, grape vines, strawberry beds, etc. We would especially recommend evergreen boughs for strawberry plants. They are just the thing. Strawberry plants only need just enough covering to keep them shaded from the wintry sunshine. They are often hurt by a too compact mulch. Straw, hay, and even leaves, when they become wet, lie too close and snug for the strawberry, often smothering them, so that they are literally killed with kindness. We greatly prefer evergreen boughs to earth for covering up grape vines. Dirt often rots the immature or half ripened wood of the vine, but no such result can follow the use of evergreen boughs. Corn-stalks answer a very good purpose in the absence of evergreens. They are not very ornamental, and make a great deal of litter in a garden, but the spring cleaning up obviates all that. Hay and straw cannot be much commended as winter covering material, except in the form of bands to twine around such stems as need protection. On the ground they are almost sure to become mouldy and rotten, thus injuring the plant they are meant to befriend and protect.

Our winters differ very much in severity. We have mild seasons now and then, through which plants and shrubs pass unharmed, that fall victims to the intenser cold which we often have, and to which we are always liable. It is best to take ample precautions, and not to subject valuable plants and shrubs to probable extermination. An ounce of prevention is worth a pound of remedy. The *Country Gentleman* mentions the case of a vine-grower who remarked, that the expenditure in one week of labor at the beginning of winter, costing less than ten dollars, would have saved him fifteen hundred, and perhaps two thousand dollars in grapes, the crop having been mostly destroyed by cold through the check given to the vines. But as such disasters did not often occur, he did not think it worth while to go through with the process of protection every winter. Such an instance speaks volumes as to the wisdom and duty of exercising due care and forethought. It is all very well to "hope for the best," but we must also "prepare for the worst."

Gladiolus Culture.

Bulbs.—Be sure that the bulbs which you save yourself, or those which you purchase, are thoroughly well dried; and, in planting, reject any that have black spots around and on the base of the bulb. They may be planted in a separate corner of the garden, if you are anxious to save the variety; for such a bulb may produce a tiny offset that may be planted; but it is sure to make a blank in your best bed, if you plant it there. Do not choose, for planting, the largest-sized bulbs, but those of a medium-size; they will flower better, and give more satisfaction.

Soil.—Manure highly in the autumn; dig in plenty of old cucumber frame dung, and let it remain until planting time, unless there be much frost, when turning it up and sweetening it by exposure will be of great benefit.

Planting.—Let this be done according to the season. The end of April, or middle of May, is a very good time. Even if the bulbs have speared a little, do not be afraid to keep them out of the ground until you have a favourable opportunity. When planting, open the place where the bulb is to be put; put in a little light soil, with a considerable quantity of silver sand, and plant the crown of the bulb about three inches below the surface. Let the space between the bulbs be about a foot each way. You will lose nothing by giving them plenty of room; it is more easy to go amongst them. Of course, you may plant them more thickly if you are pressed for room.

After-Cultivation.—Keep all clear of weeds. If the weather is dry for a long time, give copious waterings; they are of great value. Top-dress if you think your soil is not good enough. The effect of shading has not been much tried; I am inclined to think, if judiciously managed, it would be of great advantage. Tie up the flower-stems by placing stakes, and then weaving list in and out amongst them.

Propagation.—You will generally obtain, although not always, an increase of large bulbs, some breaking into two or three; but this cannot be expected from small bulbs; and, indeed, some large-sized ones never break, and only one large corm is again formed over the old one. Where there is an increase in the small fry, what is done with them must depend on the sorts, and the desire to increase stock. If it is a scarce or good variety, my plan is, immediately on taking the bulbs up, to separate the young bulbs, and at once plant them in small pots, using good light soil, and keep them in a cold pit during winter. This gives them a great advantage, and insures, I think, their starting. If the kind is a common one, and yet increase is wished for, then keep the young bulbs, and sow them in drills, in the spring, like onions; and, if no increase is desired, simply cut them off, and throw them away.—*American Journal of Horticulture.*

Transplanting.

THE proper time to transplant trees has been the subject of much dispute; and perhaps in this country the question is not so easily settled as it can be in England, where the milder winter precludes the severest ordeal to which trees transplanted during the fall in this country are exposed, from the intense frost which supervenes so soon in many cases after the removal has been effected. From our own limited experience we are, however, in favor of the practice which is undoubtedly most consistent with well established principles of vegetable physiology, and which is almost exclusively followed in the old country, namely, fall planting; and would certainly recommend a careful trial of the operation at this season, in preference to deferring it altogether till the spring.

The following extract on the subject, from the *L. C. Agricultural Review*, is worthy of attention:—

"The taking up of a plant or tree for the purpose of transplanting, almost necessarily involves injury to the roots, and in exact proportion to the extent of this damage, will be the tree or plant's power to support itself in its new position. The preservation of the roots from all mutilation, when trees are taken up for the purpose named, is therefore a matter of the first importance, though not generally so regarded by those who engage in the operation. Very many, perhaps the majority of the failures in transplanting, are properly attributable to the damage which the roots sustain, either from mutilation, or what is worse, from being allowed to become dry before they are placed in their new abode.

"Again, roots are not important to the life of the plant at all seasons alike. In the summer season, when the whole plant is active, and when the perspiration of the foliage is at its height, then the demand upon the roots is strongest. When the leaves have fallen, this demand, to a very large extent ceases for the time, the plant being in a dormant state. This is shown by the fact that a branch separated from a tree in midsummer, will wilt and perish, losing every vestige of its vitality; but if removed in autumn, after the leaves have fallen, and not too greatly exposed to the action of light, air and heat, it will retain its vitality, and may, by the use of the proper means, be made to grow again as vigorously as when on the parent stem. While, therefore, it is possible to transplant deciduous trees when in foliage with success, the chances are an hundred to one against it. As a natural deduction from these principles, it follows that transplanting should be done only when the tree is in a perfectly dormant state. There are those who advocate late spring transplanting. This may succeed well if the spring is backward, but in ordinary seasons there is everything in it to be condemned. The instant the buds begin to push, that instant the tree rouses from its sleep, or rather, the roots having resumed their active functions, the first evidence of their activity is shown in the swelling bud. To disturb them at this period, can prove but detrimental, though it may not result in the death of the tree. This is a simple fact, but it should not be overlooked on that account.

"Tree planters are often surprised at the different results of transplanting, but a careful examination of the facts will serve to show in almost all cases, (other things being equal,) that the trees which bore removal best, were those, the roots of which had been least damaged, and where the process of transplanting was performed at a season when their vital powers were in a state of rest.

"As to the comparative advantages of spring or fall planting, it may be remarked of the latter, that it gives, *first*, the wounded roots a longer time to heal; *second*, the atmosphere is generally more moist in the fall than in the spring, thus preventing the perspiratory action of the young bark from being too strongly exercised; *third*, the rest of the plant is more profound at that period, from the fact that its excitability has been to a great extent exhausted by the demands of the foliage during the long growing season through which it has just passed; *fourth*, the roots become thoroughly established in their new position, and the soil becomes more firmly impacted around them, ready, at the proper time, to furnish the food necessary for the tree's life.

"It may be said, in conclusion, that where it is possible, transplanting should be done at a time when the air is at the same point of humidity as the soil from which the tree is taken. Almost necessarily, the roots become dry from exposure after being dug up, and the most certain prevention of damage from this cause is, *first*, to allow the shortest possible interval between digging out and re-setting, and *second*, to have an eye to the condition of the atmosphere."

The Household.

Cisterns.

In compliance with the request of a correspondent, we give a brief account of the method of constructing rain water cisterns. No one who knows the real value of these reservoirs of soft water would be content to remain without them; and yet we know many houses, otherwise well supplied with domestic conveniences, altogether deficient in this respect. The value of soft water is not confined to its utility in washing: it is usually far more wholesome as a beverage, both for man and beast, than much of the hard well or spring water that is exclusively used by many families for drinking. We do not hesitate to say that pure rain

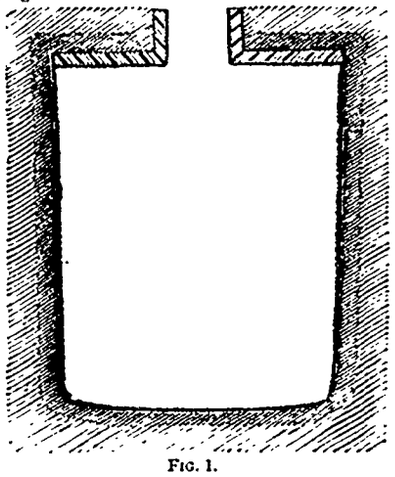


Fig. 1.

water, properly filtered, is the best for all domestic purposes; and with a little trouble an abundant supply may usually be secured. By having the cistern large enough, the longest drought will fail to deprive a household of the essential comfort of good water, even when streams, and springs, and wells have all failed. Many trust to the yield of melted snow in winter, and in summer to a few tubfulls caught in a shower, or at most to the scanty quantities retained within the narrow limits of a trough or barrel. This need not be the case; for in almost every locality a good sized cistern may be readily and inexpensively constructed. Where the soil is suitable, that is, where it is neither sandy nor gravelly, but a tenacious clay, good cisterns may be made by simply digging a hole in the ground of sufficient dimensions, and plastering the bottom and sides with cement. The

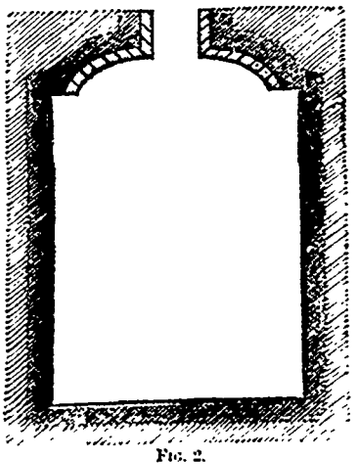


Fig. 2.

top may be covered with planks, upon which a coat of mortar should also be laid, and the whole roofed over with a sufficient depth of earth to exclude the frost. Fig. 1 of the accompanying illustrations represents this form. The cement is made by mixing in proper proportion sharp sand and "water-lime." This "proper proportion" varies according to the sharpness of the sand and the quality of the lime, and can only be satisfactorily ascertained by actual trial. The cement and sand should be well mixed while dry, and water added to small quantities, only when it is wanted for immediate use; for good cement will set very quickly. In the construction of cisterns especially, frost should be carefully avoided; and this can best be insured by choosing for the work the warmer periods of the year. Cement should not be exposed to any frost for, at least, three months after it has been applied. Some recommend but one coat of cement, and others are in the habit of applying two or more. Much will, no doubt, depend upon the particular circumstances of the case; but an experienced engineer of Baltimore, Mr. S. Wilkinson, writing to the *Germantown Telegraph*, recommends but one coat, and that not more than a quarter of an inch thick. If too thick, it is liable to crack in setting. Where a crack does occur, Mr. Wilkinson's practice is to "mix into a thick paste some sand and cement and apply it with a brush" By this means all leakage may be prevented

An improvement on the flat covering of planks is an arched roof of brick, as shown in Fig. 2. This will not require a great number of bricks, adds very little to the expense, and is much more firm and durable. Care should be taken in every instance to prevent the entrance of surface water, and to guard as much as possible against the admission, through the supply pipe, of dirt or leaves or other impurities.

Some persons contend that the presence of lime cement tends to impart a hard quality to the water. This may be the case to a certain extent, if water is admitted before the cement is properly set; but we should not think there can be any great force in this objection. The employment of wood cisterns entirely precludes the possibility of any such effect, and they are on this account, as well as for other reasons, preferred by some people. But such cisterns are scarcely so well adapted for holding water for drinking purposes, as the wood is very liable to impart an unpleasant flavor to the water. To make a wooden cistern, take well seasoned one and a half inch plank, six or eight feet long, six inches wide at one end, and six and a quarter at the other; joint the edges: with these staves form a tub six or eight feet in diameter, with a bottom in the large end, made of one and a half inch lumber. Hoop enough to hold it firmly together when rolled into the hole. Fig. 3 represents a cistern of this description. The hole for its reception should exceed it slightly in dimensions, and should have a soft bed of mortar clay at the bottom, three or four inches deep. Upon this mortar bed place the tub, and work the bottom well into it. Then fill the space between the tub and the bank with clay, just moist enough to be packed down solid with a pounder. Cover the whole with plank and earth.

Such are some of the cheapest kinds of cisterns; but we would recommend, in all cases where it can be done, that they should be constructed with stone or brick. These materials, both in forming the bottom and walls, may be laid in common lime mortar; but if it can be afforded, it is still better to lay them in cement, thus preventing, with the addition of the coating of cement over the whole, the possibility of leakage.

The last improvement which we would recommend, and a very important one it is where the water is intended for drinking, is the construction of a filter within the cistern. This is efficiently done in the manner represented in Fig. 4. A single brick wall is built up the middle of the cistern, dividing it into two compartments. Spaces are left between the bricks at the bottom of the partition, to allow the water to flow from one side into the other. Close to the bottom of one compartment a filter is constructed by laying over a frame of scantling and boards (not close of course) a coarse woollen or other cloth, and on this a layer of gravel; over which should then be laid alternate layers of sand and charcoal. This forms an efficient filter. The water will percolate through it readily, pass through the openings at the bottom of the wall, and rise on the other side to a level with the fluid on the receiving side. The water thus filtered is perfectly pure, and furnishes the most wholesome beverage that can be used.

A simpler method of constructing the filter, in which the porous wall itself is made to answer the purpose without any apparatus below, is recommended by Mr. Wilkinson, he says:—

The best filter is a wall of old bricks across the cistern, of four inches, or the width of a brick, laying up the filter-wall in cement mortar, but without plastering on either side. Such a filter will operate effectually for ten or fifteen years, and should it ever require to be cleansed, all that is necessary is to change the suction pipe to the receiving side of the cistern and pump out the water rapidly, which will cause the water to flow back from the filtered into the unfiltered side, and it will carry with it all the sediment in the pores of the bricks, and effectually cleanse the filter, making it as good as new."

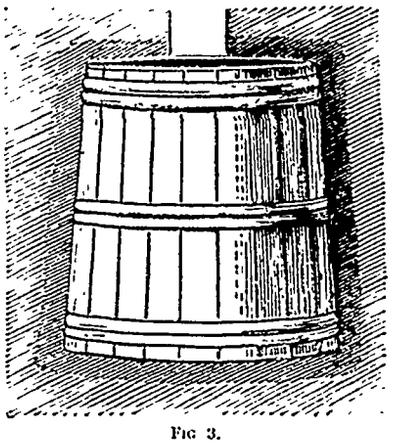


Fig. 3.

Such a contrivance may answer very well to separate mechanically all solid matter from the water, but lacks the chemical influence of the charcoal in neutralizing organic impurities. We would strongly recommend the construction of soft-water cisterns for stock. They combine several very important advantages—among others, they utilize the water from the roofs of the barn buildings, and probably thus prevent the washing away of some valuable manure; their position is necessarily in the most convenient place for watering the stock; by being constructed of sufficient dimensions they are less liable to fail than wells or springs; and the water they supply is the purest and most wholesome.

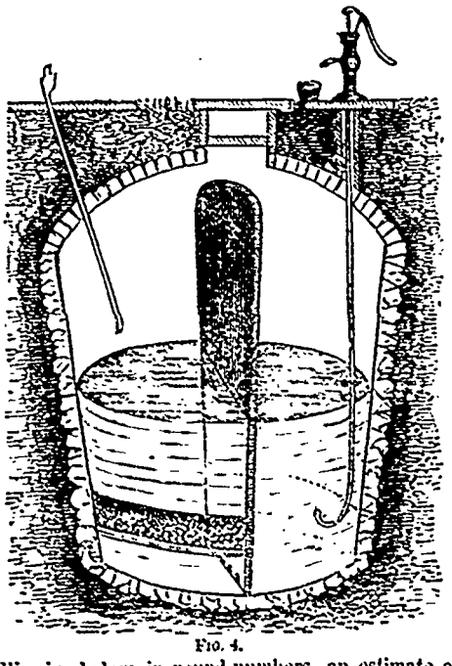


Fig. 4.

We give below, in round numbers, an estimate of the capacities of cisterns of various dimensions. A cistern five feet in diameter will hold a little over five barrels to each foot of depth.

One of	6 feet diameter,	6 bbls.	to each foot of depth		
"	7 "	" 9	"	"	"
"	8 "	" 11	"	"	"
"	9 "	" 15	"	"	"
"	10 "	" 18	"	"	"

A Family Loom.

To the Editor of THE CANADA FARMER:

SIR,—Allow me to make a few remarks about the manufacture of wool in this country, as it produces a large amount every year, and its most economical disposal is a matter of no small importance to the farmer. Every man knows the value of good clothing, but no one can appreciate the merit of a firm and enduring texture better than the farmer, whose business is hard and severe in its effect on clothes to a greater extent than any occupation that I know of. Farmers know that they can make better cloth at home than they can buy; but still they persist in selling their wool at low prices to foreign manufacturers, and in turn buy it back, mixed with flyings, shearings and shoddy, with cost of transportation charges and profits added. It is an established fact that the farmer who grows wool and sells it in the fleece, to be worked up by the speculative manufacturer, pays about five distinct profits, besides cost of transportation both ways, before he receives it back. Every poor man knows well that the clothes he buys at the present day do not wear over half as long as he has a right to expect from the price he pays. For this it is easy to account, inasmuch as there is but just good wool enough in the cloth to hold it together while being dressed and finished, the body of the cloth being old rags, ground up with flyings, shearings, &c. To remedy this admitted evil, and enable the families of farmers to manufacture their own wool into suitable and durable clothing, inventors have been busy for the last few years in contriving hand-looms of various kinds. The model of a self-acting iron hand-loom came under my notice, and so commends itself to my judgment that I am induced to send this communication on the subject to your Journal, in the hope that this useful invention might be better known, and become of more general use to the people of Canada. It is the best hand-loom in the world; the price is $100. The frame is made almost entirely of iron, thereby avoiding all the derangement constantly occurring by the shrinking and swelling of timber. Inventors have long aimed to bring out a cheap hand-loom—one that could be sold to the farmer at from forty to seventy-five dollars. Every attempt to bring out a loom for that price has, however, failed to give satisfaction, and I believe must continue to do so. I do not wish to say anything against any of the various patent hand-looms now before the public; but those buying looms should endeavour to obtain the best, and such as can be readily comprehended and managed by ordinary hands. This loom can weave all kind of goods—linen or rag carpet, cotton or wool, and is, moreover, so neat in appearance as to be fit to stand in the choicest room, and young ladies just from boarding school can take a turn at this machine for change of exercise, which is good for their health. It is easy to work, requiring little more than a very simple manipulation with the thumb and finger.

R. A. B.

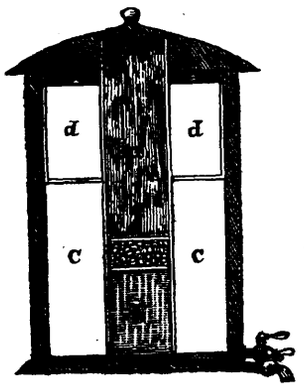
NISSOURI, Sept. 2nd, 1867.

NOTE BY EDITOR OF THE CANADA FARMER.—We insert the above as it is, though our correspondent would have conferred a greater benefit on those for whose welfare he is concerned, if he had been a little more specific, and told them what this admirable machine is, and where it can be procured. A *self-acting* loom is a novelty.

THE PRESERVATION OF MEAT.—Of the numerous methods which have from time to time been suggested for the preservation of meat, that of Messrs Medlock & Bailey, which has been recently published, appears the most simple and efficient. It consists in simply washing the meat to be preserved with a solution of bisulphite of lime and common salt in water. The Food Committee of the Society of Arts has already had the process referred to under consideration, and, we believe, with favorable results.—*Medical Times.*

Milk-Cooler and Butter-Preserver.

An ordinary refrigerator takes up room, is costly, and should be kept in a cool place. It is evident that one which occupies less space and can be placed in the dining-room or in a pantry, would save many steps and much work.



The engraving is a section of a water-cooler and a refrigerator which is ornamental in its exterior and perfect in its operation. Externally it resembles the ordinary water-cooler, being made in a cylindrical form, of tin or galvanised iron, and of any required size, from that of a water-cooler to a capacity sufficient for the wants of an hotel. Between the outer case and the inner is interposed some non-conducting material, which will keep the coolness in and the warmth out. In the centre is a cylinder (*a*) for the reception of the ice. This has a lid separate from that of the refrigerator, and near the bottom has a filter under which is a water receptacle (*b*) for holding the product of the melted ice, which can be drawn off pure ice water by the lower cock, for drinking purposes. Surrounding the central ice-chamber are movable cans (*c c*) for milk, and receptacles (*d d*) for butter, meats, &c. It is a *multum in parvo*, convenient, useful and beautiful, and is the subject of three patents. For futher information, address John R. Elder, Indianapolis, Indiana.

☞ Iko Marvel says a country house without a porch is like a man without an eyebrow.

☞ A QUAKER lady explained to her new domestic that washing day came every Second Day. The girl left in high dudgeon. She didn't go to washing every other day—not she.

GOOD VINEGAR, the *Mirror and Farmer* says, can be made by putting apple parings into a stone jug filled with water, and kept in a moderately warm place.

☞ When the chimneys of lamps become foul, or covered with a white dust that can neither be washed off nor removed in the usual way, rub the inside with whiting and strong vinegar, and then rinse with clean water and wipe them perfectly dry.

☞ A girl in Springfield, Mass., applied to her teacher for leave to be absent half a day, on the plea that they had company at home. The teacher referred her to the printed list of reasons that the School Committee think sufficient to justify absence, and asked her if her case came under any of them. She replied that it might come under the head of "Domestic Affliction."

HOW TO BE FRESH AND HEALTHY.—The New York *Evening Gazette* tells young ladies that, if they would have a fresh, healthy and youthful appearance, they must beware of late hours, large crinoline, tight corsets, confectionary, hot bread, cold draughts, pastry, decolleté dress, modern novels, furnace registers, easy carriages, late suppers, thin shoes, fear of knowledge, nibbling between meals, ill temper, haste to marry, dread of growing old.

LITTLE KINDNESSES.—The humble current of little kindnesses, which, though but a creeping streamlet, yet incessantly flows, although it glides in silent secrecy within the domestic walls and along the walks of private life, and makes neither appearance nor noise in the world, proves in the end a more copious tributary to the store of human comfort and felicity than any sudden and transient flood of detached bounty, however ample, that may rush into it with a mighty sound.—*Fawcett.*

PICKLING CAULIFLOWERS.—I send a good receipt for pickling cauliflowers, as desired in your last. Have a kettle of boiling water, and put in one at a time, with top down, unless the kettle is large enough for more, and boil it until tender. Have ready a jar of cold vinegar, with cloves and mace; drain the cauliflower well, and put into the vinegar while hot. Cover tightly, and it will be ready for use in a week or ten days.—*Cor. Country Gentleman.*

ECONOMY IN LIGHT.—We have seen the following receipt in several of our exchanges, some of them vouching for its accuracy from experience:—"Fill a kerosene lamp about one-third full of common table salt, and then fill the lamp with kerosene oil, and you have at once an oil that will burn nearly twice as long as it would without the salt, and give a light even better than it would without it. This addition of salt keeps the blaze of the oil from smoking, and altogether the discovery of this simple fact will produce a great saving of expense to any and all who try it."

Poetry.

Baby Bunn.

[The late Mr. N. P. Willis says of the poem annexed, "It is addressed to an idolized child, by its pet name, and though beautiful throughout, it has some two or three passages of very rare originality. The writer of it (as I learn from a letter of a lady who encloses it to me) was a factory-girl, who by the labor of her own hands secured the money for her education. She is now twenty-four years of age, and supports herself by the various uses of her pen. She (Josie H.) is yet to be famous, I am very sure."]

Winsome baby Bunn!
Brighter than the stars that rise
In the dusky evening skies,
Browner than the rogin's wing,
Clearer than the woodland spring,
Are the eyes of baby Bunn!
Winsome baby Bunn!

Smile, mother, smile!
Thinking softly all the while
Of a tender, blissful day,
When the dark eyes, so like these,
Of the cherub on your knees,
Stole your girlish heart away.
Oh! the eyes of baby Bunn!
Rarest mischief will they do,
When once old enough to steal
What their father stole from you!
Smile, mother, smile!

Winsome baby Bunn!
Milk-white lilies half unrolled,
Set in calyces of gold,
Cannot make his forehead fair,
With its rings of yellow hair!
Scarlet berry cleft in twain,
By a wedge of pearly grain,
Is the mouth of baby Bunn!
Winsome baby Bunn!

Weep, mother, weep
For the little one asleep
With his head against your breast!
Never in the coming years,
Though he seeks for it with tears,
Will he find so sweet a rest.
Oh, the brow of baby Bunn!
Oh, the scarlet mouth of Bunn!
One must wear its crown of thorns,
Drink its cup of gall must one!
Though the trembling lips shall shrink,
White with anguish as they drink
And the temple sweat with pain
Drops of blood like purple rain—
Weep, mother, weep!

Winsome baby Bunn!
Not the sea-shell's palest tinge,
Not the daisy's rose-white fringe,
Not the softest, faintest glow
Of the sunset on the snow,
Is more beautiful and sweet
Than the wee pink hands and feet
Of the little baby Bunn—
Winsome baby Bunn!
Feet like these may lose the way,
Wandering blindly from the right;
Pray, and sometimes will your prayers
Be to him like golden stairs
Built through darkness into light.
Oh, the dimpled feet of Bunn,
In their silken stockings dressed!
Oh, the dainty hands of Bunn,
Hid like rose-leaves in your breast!
These shall grasp at jewels rare,
But to find them empty air;
These shall falter many a day,
Bruised and bleeding by the way,
Ere they reach the land of rest!
Pray, mother, pray!

Mark Lane Express.

Miscellaneous.

Mechi on Rats.

Has any one ever estimated the number of rats that prey upon the farmer's property? Allowing one to each acre, we should then have about sixty millions in the United Kingdom. As animals consume according to their weight, a full-grown rat would consume much grain in a year. But, unfortunately, it is not only what they consume, but what they destroy, that concerns us. Said an old labourer's wife to me, "A rat has taken away in one night eight of my brood of young ducks, worth 8d. a piece. My neighbour, Mrs. B——, a small farmer's widow, cannot raise any poultry, for under her house is a honeycomb of rats' runs. She took them in a hamper into her sleeping room last night, and even there they tried to get them out."

I can testify to their destructive powers from experience. When they have young they will carry away and store up scores of young chickens, ducks, or turkeys in a single night, much the same as a cat having kittens. A friend of mine who had a little rabbit warren opposite his windows, saw his cat catch a young rabbit. He followed her, and found that she already had laid up thirty-six that morning near her kittens. I have known of a brace of foxes taking thirty-seven turkeys in a single night, and burying many of them up in some dung-heaps which were upon an adjoining field ready for spreading.

When hard pressed for food themselves or their young, rats are very daring, and will attack large chickens or good-sized rabbits. I know a case where a youth was awoke in the night by a rat beginning upon his ear. Wherever stock are fed with meal or grain, there the rats will surely come, to share, with the pigs especially, their barley-meal and pollard.

When dining at Vintners' Hall with the late excellent Mr. Green, the great shipowner, he said to me:—"Mr. Mechi, I can beat you in pigs; I make a thousand a year by my pigs." I expressed my surprise, and said if I got their manure free of cost I thought myself a lucky fellow. "Well," said he, "I have only 60 pigs; before I kept these pigs the rats used to damage the sails of my ships to the extent of a thousand a year, eating every greasy portion. They now dine with or after the pigs, and never touch the sails." This hint may be useful to shipowners as well as to housekeepers, who find that the mice destroy the greased or stained portions of table-cloths.

Rats migrate, and travel a long way in a night, in search of food. A neighbour of mine told me that he one night met a small army of them, some hundreds together. The carelessness of some farmers or their false economy causes serious loss to their neighbours. They may be called rat-preservers or rat-breeders. I used to pass frequently by two wheat stacks which were completely honey-combed by the rats, whose paths into and up the stacks were visible from the road. Having consumed nearly all the grain, they left the stack for better quarters. When threshed there was plenty of straw, but the corn was nearly "nil." Those who keep their corn in stack for seven years (and I know of some who do so) had need have an eye to the rats. I have used a dozen iron stack frames (Garrett's patent) for the last twenty years, without any rats. The fact is, they cannot do without water, so if one gets into the stack, he must come down to drink, and cannot re-ascend. It is too common a practice to leave carts, ladders, or anything close to the stacks, thus affording access. As soon as these are removed, Mr. Rat must come down for water and cannot return. We always trim or shave our stacks (cost 1s. per stack) to cut off access from below, as well for economy of corn and neatness.

Mice are more difficult to expel than rats, for they get into the sheaves at harvest time, and are thus carried on to the stack. Unless poisoned by liquid immediately after putting up the stack they soon find out that they can exist by the 12 per cent. of water contained in straw and 11 per cent. in the grain. They also learn to avail themselves of dew and rain. In the spring and summer they will so multiply as to destroy or damage a large quantity of the grain, especially if left over-year. To show how the animals can exist by the water contained in what is called dry grain and its straw, I will relate the case of a horse at Cressing Temple, a few miles from me, where a horse used for treading or consolidating the barley in the barn, being left there all night, slipped down between the closely packed barley and the boarded sides of the barn. In vain was search made for him in the morning, and it was concluded that he had been stolen. On Christmas Day, as the ploughmen came to attend to their horses, they heard the neighing of a horse in the barn, and after removing the barley, they found the lost horse as fat and as sleek as a mole. Thinking he must be very thirsty they ignorantly allowed him to go to the pond and drink his fill, and in consequence he died. This is well known to many persons now living. The horse had gradually eaten his way into a comfortable space. But to return to our rats. They are most industrious and destructive burrowers: as they cannot destroy a solid brick wall they will burrow under it, unless the foundation is well concreted; where beams enter the wall, they gnaw. It requires a watchful eye to keep them under. Every hole should be noted, and plugged at once with a piece of tile or brick fixed with cement, or a piece of hard wood dipped in gas tar. Their runs should be tarred, and thus they will soon get disgusted with their quarters. Wherever a small heap of earth is thrown up near a wall, the run should be traced and at once stopped; lime and stones as a concrete conquers them. Loose lime they cannot work in, it blinds and disgusts them. In every barn and shed door there should be a round hole, about eight inches in diameter, so that the cats can have free access in search of the rats. It is at night they work, and they do so as much as possible under cover. They may be easily poisoned by strychnine, mixed with ground barley or oats; but before trying this they must be fed for several nights with the meal unmixed with poison.

Rats are very sagacious, and had I space I could relate many instances of their cunning. It is a most dangerous thing to spread poison on bread and butter, for they carry it away; and I know of too many instances where valuable dogs, fowls, &c., have perished. Another inconvenience is, that when poisoned they die in their burrows, which are too frequently under your drawing or dining-room, or in the walls. Their decomposition causes a most detestable and too durable stench. There is nothing like plenty of cats. I find male cats, castrated when young, by far the best rat-catchers, and by blocking the holes you give the cats a better chance of catching them. Traps may also be set, but they are very wary of them. Hollow walls are objectionable, so is thatch on buildings.

Water rats undermined the banks of my pond until I turned in a few pike, which soon converted rats into fish. A pike of three pounds will take a rat and swallow him at once. Beware of pike where you have young ducks, for they enjoy them quite as much as they do rats. I had imagined that there was a chance of the rat biting the stomach of Mr. Pike; but, as an old angler, and examining the condition of the pike's stomach with a bait in it, I found that there is no fear of that, for instantly the stomach collapses like an elastic pitch-plaster, and not a single breath could the rat or any living thing draw. Pike always swallow their prey alive, and head foremost. They are very fond of eels, and swallow them alive, and head foremost. They also seize their prey across the middle, and, unless very hungry, hold them so for some time.

Rats find abundant accommodation and concealment under the old-fashioned wooden barn floors and dilapidated or thatched farm buildings. The modern system of asphalting upon concrete is an effectual barrier; they cannot gnaw it; their only chance is to burrow under between the ground and the concrete, and this, by a careful examination, may be easily prevented. A very destructive, cunning old rat, that could never be trapped, was taken as follows:—Every hole except one was carefully stopped with gas-tar substances, and the trap set at the remaining hole. For two days and nights he declined coming out, but hunger and thirst at last compelled him to face the trap, and he was taken.

I very much commend asphalted floors to my agricultural brethren. It is so cheap and clean, and, above all, prevents any damage to corn, &c., by preventing damp arising from the earth beneath it. Cats such as I have will not only kill rats, but also weazels. The latter will destroy a brood of poultry in a night, if they have access to them. Of course every one knows the value of ferrets and a good rat dog.

Advertisements.

Markets.

Toronto Markets.

"CANADA FARMER" Office, Sept. 12th, 1867.

THE weather has been remarkably fine, the harvest well gathered, and threshing operations are vigorously pushed on to secure the early markets. Grain is now coming into the city in considerable quantities. Yesterday the receipts of barley from waggons would amount to over 10,000 bushels, and other grains are coming forward in the usual proportion at this season.

Wheat—Receipts by cars, 1,215 bushels, on the street but little offered. Present values of the different varieties are, fall $1 40 to $1 50, spring $1 30 to $1 40, midge-proof $1 35 to $1 42.

Barley—The market opened at 65c to 70c, advanced to 70c to 75c, and closed at 65c to 75c, the receipts being large and increasing, a lot of 1,300 bushels, rather inferior, sold at 70c f.o.b., and 350 bushels at the same price.

Oats—Market steady, 50c to 51c paid to day for street receipts, car loads 48c to 50c.

Peas—Firm and higher; street prices opened at 65c to 70c and closed at 70c to 75c; the latter figure is exceptional.

Rye—A few loads sold at 70c.

Flour—Receipts 1,514 barrels, the market ruled quiet and rather dull, but closed firmer with only a small business doing. No. 1 superfine may be quoted nominal at $6 75 to $6 90 at the close. There was a fair supply of fancy in market, and sales were 300 brls at $7 05 on cars at Weston, 200 brls at $7, and 200 brls at $7 05 on cars at Weston, the market closing steady and firm. For extra and superior there is no demand, lots of extra were offered at $7 25 and of superior at $7 50, with a sale of 100 brls extra at $7 25.

Oatmeal—Nominal at $5 75 in wholesale lots. Cornmeal not quotable.

Freights—Flour to Montreal 20c, grain 6c. Grain rates to Oswego and other points on the Lake nominal.

Hay and Straw—Hay selling at $12 to $14 per ton, straw $8 to $10 50.

Apples—Green, per bbl $2 00 to $3 00.

Pears—Common $3 to $5, Bartletts $8 per bl.

Wool—Market dull at 27c for small lots, round lots offered at 25c to 29c.

PROVISIONS.

Butter—Is dull except for choice dairy, which is saleable in small lots at 17c to 18c for the local trade, ordinary tubs 11c to 12½c, pound rolls 20c to 21c for farmers' lots.

Mess Pork—Is in light stock and selling at $18 50 to $19 00.

Bacon has moved a little more freely, ordinary 7¾c to 8c. Canada cut 8c to 8¾c. Hams in salt 9c to 9¾c, dry 10c, smoked 11c, canvassed 12c.

Cheese continues dull. The English market has improved 7 or 8 shillings during the week, but little effect is, however, perceptible here. The factories hold the cheese high, and owing to a difference of from 1½c to 2c between the views of makers and exporters there is nothing doing. Should the Liverpool markets continue to improve operations will no doubt be induced. Holders ask about 9c, and some even higher.

Eggs—Packed 9c to 10c, fresh 11c to 12c.

Poultry—Chickens plenty, selling at 25c to 35c per pair; ducks 35c to 50c; no geese or turkeys offering.

LIVE STOCK.

Cattle—There was a good supply of cattle during the week, all of which found a ready market for home consumption and export to Montreal. First class $6 50 to $7, being an advance of 50c per hundred since last week, second class $5 50 to $6, third class $5 to $5 50.

Sheep—Large arrivals, first class $4 50 each, second class $3 75; third class $3.

Lambs—First class $2 50 each, second class $2; third class $1 50.

HIDES.

The market is lower, green selling at 6½c to 7c, green salted, Western States, 8¼ to 9c, No 1 inspected 8¼c to 8½c, No 2 8c to 8¼, Calfskins dull at 12, for green, salted 14c, dry 20c. Pelts 50c. *Lambskins* 70c.

Guelph Markets, Sept 10.—*Wheat*—fall per bush, $1 25 to $1 40, spring do $1 20 to $1 25. *Oats*—40c. *Peas*—53c to 55c. *Barley*—60c to 62c. *Wool*—per lb, 27c to 28c. *Hides*—per 100 lbs, $6 50 to $7. *Beef*—do $6 to $7. *Straw*—per load—$5 to $3 50. *Hay* per ton, $9 to $10 50. *Eggs*—per dozen, 9c to 10c. *Butter*—per lb. 12c to 13c. *Apples*—per bush, $1 37½. *Potatoes*—per bag, 75c to 87c. *Sheepskins*—30c to 60c.

Hamilton Markets, Sept. 10.—*Fall wheat*—per bush, $1 35 to $1 40, spring do, $1 30 to $1 35. *Barley*—65c to 75c. *Oats*—43c to 45c. *Peas*—65c to 70c. *Corn*—65c to 70c. *Potatoes*—per bag, $1.

Galt Markets, Sept 10.—*Fall wheat flour*, per 100 lbs, $3 50 to $4, spring do $3. *Fall wheat*—per bush, $1 25 to $1 35, spring do $1 10 to $1 12. *Barley*—50c to 55c. *Oats*—44c to 45c. *Peas*—50c to 56c. *Butter*—per lb. 15c. *Pork*—per 100 lbs, $5 to $5 35. *Beef*—do, $6 to $6 08.

Contents of this Number.

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