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THE CANADA FARMER

Vol. I. No. 17.] TORONTO, UPPER CANADA, SEPTEMBER 15, 1864. [Postage Free.

The Field.

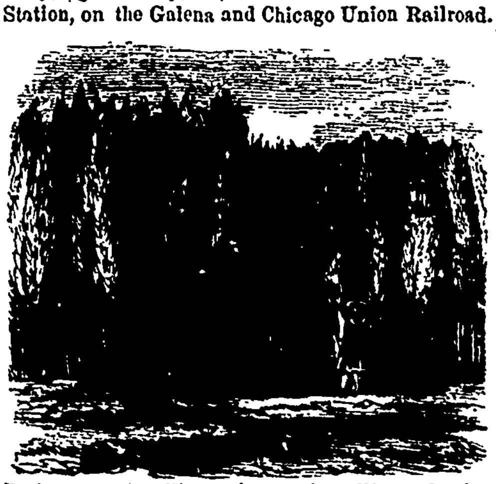
White Willow Fences.

We have at length been enabled to fulfil our design of visiting the region of country in which, for some years past, the white willow has been grown for the purpose of a live fence, and after careful investigation we have no hesitation in saying that the experiments which have been made are, thus far at any rate, a decided success. In Lee and Ogle counties, Illinois, there are now growing some hundreds of miles of willow fence, from one to twelve years old, so that a visitor has the fullest opportunity of observing the plant in various stages of growth. The oldest willows are on the farm of Mr. W. L. Smith, of Lee County, Illinois, and consist of a row some forty rods long, which he planted, not so much for a fence as a wind-break. They are now upwards of forty feet in height, and form a solid fence of living tree trunks, many of which, at four feet from the ground, are nine and ten inches in diameter. They answer perfectly the purpose they were meant to serve, affording very complete protection from the winds. The following cut will give an idea of the manner in which these trees occupy the ground. They grew from cuttings of about finger size, and a foot or more in length. From the appearance presented, two or more shoots must have been allowed to grow from

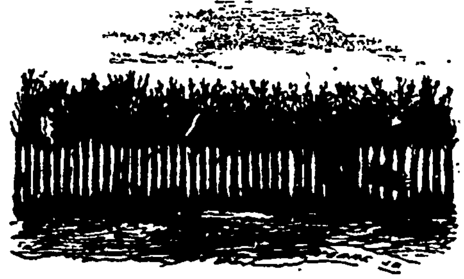
some of the cuttings, and hence an irregularity, which can be prevented by allowing only a single shoot—the one most in a direct line—to grow.

The quick, regular, uniform growth made by this line of willows, suggested the idea of using the plant for fence purposes. Fence-making is one of the greatest difficulties with which the Western farmer has to contend, and for many years past, numerous attempts have been made to grow live hedges, but with only very partial success. The Osage Orange succeeds very well south of latitude 40°, but above that parallel cannot be depended on, as it is liable to be winter-killed. The locust has failed in consequence of the depredations of the borer. Poplar, cotton-wood, and the yellow willow, have all proved unsatisfactory. Under these circumstances, and with the whole prairie population on the *qui vive* for something that would answer as a living fence, it is not surprising that a fever should have resulted from the announcement that the white willow was "just the thing." The entire West got willow on the brain, and cuttings of all sorts and sizes, living and dead, found ready sale at very high prices. The wonderful novelty was expected to grow by magic, and imagination pictured the treeless regions of the West transformed into a paradise of shrubberies, parks and groves. As might have been expected, these wild anticipations have not been realized, and yet there is, we think, reason to believe that the white willow is destined to prove a great boon to the prairie farmer.

The best sample of willows, in various stages of growth, is to be seen on the farm of Mr. Edward Cady, Ogle County, Ill., about four miles from Lane Station, on the Galena and Chicago Union Railroad.



Perhaps a better illustration of the utility and value of the plant to a Western settler could hardly be found than this instance furnishes. Mr. Cady has a farm of eighty acres. When he settled on it, six years ago last November, there was not a tree or shrub of any kind upon it. As he expressed it, there was nothing, green or dry, upon the lot. He could not tie his team until he had set a post into the ground, which he had taken the precaution to bring in his waggon. He had firm faith in the white willow, and one of his first steps toward improving his place was to plant out a few rods of cuttings. He has persevered in this direction, until now his entire farm is enclosed with a living fence, and he has several subdivisions of it also effected. He has taken great pains and been remarkably successful. His willows have made a very uniform growth, and through the entire extent of his fence-rows there is scarcely a gap, except where he has left gateways. His oldest lines of willow, of some five years' growth, are quite cattle proof, and those three years old, though an unruly animal might bend the saplings aside and break through them, are well nigh safe and sufficient fences. The above engraving represents a section of his fence, part of which is two, and part three years old, the jog at the top showing the division between the two and three-year-old plants. The height of the trees may be estimated by the figures in front. Those three years old measure about eighteen feet in height. The prairies being level and exposed, are subject to bleak winds in winter, and are liable to sweeping blasts at all seasons of the year. Hence, as wind-breaks, lines of willow are extremely valuable. Mr. Cady has found much advantage already in this respect, in the protection of his stock during the winter, and preventing his grain from becoming lodged in summer. He has surrounded his barn-yard with a fine growth of willow, and has another enclosure of it within which is a young and thrifty orchard. He has also planted five acres as a wood lot, believing that it will pay to grow willow for firewood. Good judges have estimated that Mr. Smith's twelve-year old trees would now yield a cord of four-foot wood to the running rod. Mr. Cady has tried various experiments with his willows. His next neighbour on one side having complained that the trees shaded his land, Mr. Cady chopped them off level with the ground. During the present summer these stumps have thrown out shoots in all directions, and the growth has very much the appearance of a nice hedgerow, six or seven feet high. Whether it will bear shearing, or whether its rampant habits will admit of its being kept within bounds by constant cutting, remains to be seen. A correspondent of the *Prairie Farmer* says it will never make a hedge, since its growth is so rapid that it would require shearing twice a day, and occasionally between times. We confess to grave doubts if it can be curbed into hedge limits. Mr. Cady took the saplings he had chopped down, and cutting them into lengths of about four feet, drove them into the ground in a straight line, where he wanted a division fence. These stakes have rooted and thrown out shoots; they look very healthy, and from their regular, upright appearance, bid fair to make the prettiest fence on his domain. A party at some distance from the scene of our visit has tried the experiment of cutting off his willow trees four or five feet from the ground, in order to see if they will form a living stockade. The following illustration, taken from a photograph, will give an idea of the present appearance of his trees:—



Mr. Cady's method of preparing the ground and taking care of his plantations, is as follows:—He ploughs up six furrows, three each side, facing each other. He then thoroughly harrows and pulverizes the ground he has ploughed, believing that the land should be as well prepared for the willow as for any other crop. After his cuttings are planted, he tends them with the same care that he would a corn crop, keeping the weeds down and the ground loose. He also uses mulching both as a summer and winter protection. The row being kept clean the first year, but little difficulty is experienced afterwards. In one instance, Mr. Cady applied manure in the rows before setting the cuttings, and the effect was very perceptible in the more vigorous growth and larger size of the shoots as compared with those planted in unmanured land. As the result of his experience, Mr. Cady is very sanguine in the belief that for the purposes of *fence, wind-break, firewood*, and *timber*, the white willow is invaluable. This opinion seems to be generally entertained by all who have given the plant a fair trial. It is true many have failed from various causes, and these, as might be expected, speak unfavourably of the whole thing, and denounce the "willow humbug," as they style it. But an example like that of Mr. Cady is worth more than a hundred or a thousand denunciations of this kind. The failures can be accounted for in a variety of ways. Some have been imposed upon and have bought a spurious willow; others have obtained cuttings that had lost their vitality; in the rage of speculation many feeble shoots have been sold; parties have planted without preparing the ground; or, having carelessly stuck their cuttings in the earth, have given them no after culture; or they have allowed cattle and hogs to have access to them, and thereby have lost their trouble. It certainly goes very far toward establishing a good character on behalf of this candidate for public favour, that in the region where it has been longest tried, and where, as we have said, there are hundreds of miles of it growing, the general opinion is that it is an inestimable boon to the agricultural community. In order to avoid extending this article to an unreasonable length, several points bearing upon the adaptation of the white willow to Canada, are treated in our correspondence columns, in reply to queries received on the subject.

Mr. H. D. Emery, one of the editors of the *Prairie Farmer*, accompanied us from Chicago to the willow region, and we owe him our best acknowledgments for many polite attentions and much valuable information. Skilful with the gun as well as the pen, we are also indebted to him for savoury remembrances of that delicious Western luxury—prairie chicken.

Hops and other Crops in New York State.

To the Editor of THE CANADA FARMER:

SIR,—Having just spent a few days in the hop-growing and dairy districts of Central New York, some brief remarks in relation to these subjects, as the hurry of travelling will admit, may be of some interest to a portion at least of your numerous readers.

The County of Otsego may be regarded as the centre of hop culture in the State of New York, and it appears that this branch of rural industry is becoming extended to several adjoining counties, except perhaps to the south. Some four or five thousand acres in this interesting district, it is estimated, are under the cultivation of hops, a pursuit that puts into circulation a large amount of money and employs many thousands of hands during a portion of the year.

I visited this district in the midst of the picking, and as an old Kentish hop-grower myself, the occasion awakened in my mind many pleasing reminiscences. As a general thing the cultivation, picking and curing of hops in this country are not characterized by that thoroughness and system which distinguish English hop culture, although I saw a number of instances which hardly admitted of improvement. The same objection is urged here which one so frequently hears in the old country, that the cultivation of hops engrosses so much of the farmer's attention, manure, &c., as to work detrimentally on the other crops, and induce him to rely too exclusively on a single article of produce. There is, no doubt, some truth in this, as applying to both sides of the Atlantic, but I have seen both there and here, especially among the best and most successful cultivators, numerous exceptions. There is nothing in hop culture *per se* any more than in flax or grain growing that necessarily tends to diminish the productive forces of the soil. Rotation, cultivation and manuring, in accordance with the teachings of modern science and experience, will, in all cases, keep the farmer from so calamitous a result.

The produce of hops this season will fall much below an average, both as regards quantity and quality. Upon many of the low rich lands, especially in the southern part of the district, the crop is all but a total failure, and some gardens will not be picked at all. I observed a few plantations on higher land that would probably yield from ten to fifteen hundred pounds per acre, apparently of good quality.

The drouth, no doubt, has similarly affected hops as it has other crops, during this extraordinary season, and the unusual wetness and backwardness of the spring, proved very detrimental. But a new enemy to the American hop grower has appeared in the shape of an aphis, whose destructive work is painfully obvious through a large portion of the entire plantation. It has long been held by hop growers on this continent, that the plant is not subjected to the ravages of the fly, which is sometimes so very destructive in England and on the continent of Europe. It would now appear that a similar, if not identically the same species has taken up his abode among us: for I hear several complaints of the same character from Canadian planters, and there can be no doubt that the visitation is of rapid and wide spread distribution. It was observed in a few places in this part last year, for the first time, and it attracted some local attention. I could not learn whether the insect, in its fly state (termed in England the "long wing," and scientifically "aphis humuli,") has been fully observed. However, an innumerable number of exceedingly small green lice can be seen both on the leaves of the vine and also in the hop itself, causing the former to become black and filthy, and the latter to rot away, producing what is popularly termed "mouldiness." Whether the latter condition is caused solely by insects, or by atmospheric changes, or both combined, is a problem which further investigation alone can satisfactorily solve. It is to be hoped that the whole question will receive the best attention of scientific entomologists, and I have no doubt but Dr. Fitch, the eminent entomologist of the New York State Agricultural Society, will favour the world with the results of his own views and investigations. I could not learn that the New York planters had applied any specific to this malady; but the syringing of the affected vines with the decoction of tobacco, and dusting them with sulphur, as gardeners do roses, grape vines, &c., might prove beneficial. Some idea may be formed of the intensity of this lice blight from the fact that in badly affected gardens, the surface of the ground around the hills after a shower becomes almost as black as ink.

The stock of good yearling hops, I am given to understand, is very small, and as the new crop must prove exceedingly short, the growers are looking forward to high prices, which, at present, can only be loosely estimated. I saw two bales, scarcely ripe, and otherwise of inferior quality, that had been sold for 40 cents per pound, but growers are talking of 50 cents and upwards for an article of good quality. As the English market is now open to the world free of duty, and the crop there and elsewhere in Europe is considered scarcely an average, well grown and managed hops will in all probability command a high price. This branch of agricultural industry is gradually extending in Canada, and there can be little doubt that in judicious hands, on suitable soils, it will prove profitable. I may refer to this subject again in the pages of THE FARMER, in a more detailed and practical manner.

I have now gone over a considerable portion of the State of New York, in, it is true, rather a hasty way. Traces of progress are, in most places, obvious even to the most casual observer, whether one looks at implements and the practice of tillage, or to live stock and cereal produce. I have seen many farms that would have been no discredit even to the better cultivated portions of Great Britain, indicating in their owners, industry under the guidance of ability and sound judgment. In less favorable situations, or poorer soils, and, consequently, as a general thing, a more needy and less efficient class of cultivators, the rate of progress is slower, and more knowledge and capital are required to bring the arts of culture up to the required standard. The connection between the soil and the geological formations on which it rests, and from the rocks of which it was originally derived, is frequently most obviously marked, and the agricultural character and practices accordingly varied. The drouth has been similar in this part to what we have experienced in Canada. Wheat appears not to be extensively cultivated, but the yield is said to be fair, and the quality good. Little or nothing is heard about the midge. Spring crops have generally been short—peas are but little cultivated, and barley not extensively. I was told by a Utica brewer that Canadian barley was much esteemed for its malting qualities. The breadth of turnips, mangolds, &c., I found less than might be expected; the severe drouth will, in a measure, account for this. I am just returned from a journey of about a hundred miles in Long Island, which varies extremely in the character of its soils and the state of cultivation, the contrast being most striking between the luxuriant and beautiful nursery grounds of Flushing and the arid monotony of the great central plain. In the latter, however, man's skill and industry are beginning to effect a wondrous change. The Long Island Railway has brought these hitherto barren lands within two or three hours of New York, where there is a constant demand, at remunerating prices, for vegetables, &c.; and from which immense quantities of manure are readily transported by sloop or rail. The consequence is that these scrubby oak plains are rapidly being transformed into productive farms and gardens. These wild lands sell at from ten to twenty dollars an acre, and on the Atlantic coast and bays large quantities of fish and seaweed are collected and used for manure. The contiguity of New York will render the reclamation of these sterile lands, if conducted with judgment and prudence, ultimately profitable. Most kinds of fruits do well here, and I never ate better apples, pears and peaches, of the choicest kinds, than from a garden prepared from this wilderness only seven or eight years ago.

I have had much pleasing intercourse with farmers and others interested in agricultural pursuits. The interest generally felt in all matters of this sort is truly encouraging. I had an hour with Mr. Harris, of the *Genesee Farmer*, at Rochester, who has recently gone rather extensively into practical farming near that city. I had also the advantage and pleasure of spending the greater part of a day with Mr. Willard, of Little Falls, the well known writer on rural matters, from whom I derived no small amount of information relative to hop growing, dairying, &c. At Albany I felt somewhat disappointed in not meeting Mr. Johnson, the well-known and esteemed Secretary of the New York State Agricultural Society, who was gone to Rochester on matters relating to the approaching Exhibition. After examining the Agricultural Museum connected with Mr. Johnson's department—of which more by-and by—I had the pleasure of spending a very agreeable hour with Mr. Luther Tucker and son, the enterprising publishers of the *Country Gentleman*, *Cultivator Annual Register of Rural Affairs*, &c. These works the Messrs. Tucker edit with care and ability, and they are too well known and appreciated to need any elogium from me. Mr. Tucker sen., commenced the *Genesee Farmer* many years ago, and I felt a peculiar pleasure in having personal intercourse with this much respected veteran of American agriculture. I met at this office Mr. Cornell, of Tomkins County, an ex-President of the N. Y. State Agricultural Society, and a munificent promoter of agriculture. It was gratifying to hear that amidst great national difficulties, the prospects of the approaching Exhibition at Rochester are bright and encouraging. One of Fowler's celebrated steam ploughs, with apparatus complete, has been purchased by the Society, and it it arrives in time, will be put into operation at the State Fair. This is by way of experiment, and should it prove successful, American mechanics will, no doubt, soon manufacture implements improved and adapted to the special wants of this country. I must defer any remarks on dairying and cheese factories to a future occasion.

Yours, &c.,

New York, Sep. 7, 1864. GEO. BUCKLAND.

THE LARGE SORGHUM PLANTATIONS.—While we regret to state that from information that comes to us we are forced to greatly reduce our estimates upon the amount of sorghum growing in the Western States, we are glad to learn that the crop very generally looks well. In Iroquois county, in the vicinity of Bulkley, some 300 or 400 acres are growing, under the superintendence of Messrs. Manly & ——. It promises very finely indeed. A better and more uniform growth of stalk was never seen. There are lots of from 40 to 200 acres at other points in Iroquois and Champaign counties, all looking well. At St. Johns is the well known plantation of 300 acres belonging to A. W. Nason, which is reported as the finest field of cane in the West. At Lasalle, Mr. Hadley has about 50 acres. The Davenport (Iowa) Company have nearly 100 acres, with a fine promise of a profitable yield. At all these points ample machinery has been put up to work the large crops to the best advantage. Planters will begin work earlier than usual, and in all probability escape the fall frosts entirely. Smaller planters should have their machinery in ample season to save the whole crop.—*Prairie Farmer.*

Fall Preparation of Land.

As the autumn has arrived, and the hurry and pressure of haying and grain harvest is easing away, it may be well to take into consideration the preparation of land with a view of abridging the work of the coming spring, and putting the soil in a forward condition for next year's crops. We shall not aim to be very systematic in our present suggestions, but rather to start the current of thought in others, and let them "govern themselves accordingly," as their desires and means of accomplishment may or will permit.

1. *Preserving what Fertility there is.*—It is a custom with many to feed off the second crop of their mowing fields with cattle. This is called "turning into the fall feed." Many believe that this practice does no damage to mowing fields—that the hay crop will be just as large during the next year as if the cattle had not fed it off—that it is the same in effect as cutting the "rowen," or aftermath, and carrying it into the barn. A little experience and observation will soon convince one that this is not in fact the case. If the cattle, in their mode of gathering the second crop nipped no closer than the scythe, or tramped it no harder than the man who mows and gathers it indoors, perhaps there would be little difference in the two, but the fact is, that cattle not only nip close and tramp hard, but they are generally allowed to follow it up until snow falls and covers the ground up. By that time the soil is pretty will stripped of herbage, and has no clothing for winter and but a little fund to start upon next spring.

Now, if the grass had been suffered to grow after all the haying from it had been closed, there would be not only a good coating of grass to serve as a protective mulch to roots during the winter, but the heads or collars of the roots would be sto ed with food for the early nourishment of the starting blades of the coming season. Therefore we advise to keep your cattle off your mowing lands in the fall, if you can get along without doing it, and let the fall growth act as a mulch.

2. *Preparations for next year's crop.*—If we could plough and put into proper condition the land we intended to sow and plant in the spring, all within one hour of the time of sowing or planting, we would not meddle with it until then, for we should thus avoid all the exhausting influence of winds, and heats, and colds. But as this would be impossible. we must suffer the losses, more or less, which may arise from such exposure, and prepare them when best we can. Experience has now pretty well demonstrated the wisdom of getting in our spring grains as early as we can stir the ground deep enough with the harrow to cover them. The same is true in regard to grass seed.

To effect this we must do our ploughing and our preparations in the fall, and the farmer must consult his programme of arrangements so as to use his team and ploughs when they will least interfere with harvesting his autumnal crops. Some think that early fall ploughing is better than later, for although the surface will be longer exposed to the drying effects of the winds, and early depleting and exhaustive causes, they will bring a more succulent soil, which, by its easier decomposition will be as much more available as a fertilizer as the other will be exhaustive.

In England they keep the plough going at all times of the year, but that is a milder, moister and more equable climate than ours, and the exposures cannot therefore be fraught with much, if any, exhaustion of the soil, as it would be if under similar exposure in our climate, where we have the extremes of heat and cold, wet and dry.

The spring and fall are therefore the most appropriate times for us to plough, and as our springs are short and rapid, and work always driving, we should equalize it as much as possible, by ploughing a good part of what we need to do, during the autumn. So speed the plough *Maine Farmer*

Top Dressing Wheat Land.—The following important suggestions on this subject are from the *Illustrated Annual Register of Rural Affairs*:—"In most of our best wheat regions, unless the soil is already quite rich, the most effective use of manure is a top-dressing after the land has been ploughed. It has often increased the crop eight or ten bushels per acre, and sometimes given a good yield of the Mediterrean variety where the winter has nearly destroyed undressed fields. The manure for this purpose should be fine or well-rotted and well broken by harrowing. To prevent the manure waggons from hardening the ploughed soil, it is a good way to plough and then dress a strip on the farther side of the field, and then repeat the process on successive strips till the whole is completed. If the soil is very dry, bring the moist portions up by deep ploughing, and drill in immediately."

The Fall Ploughing.

The ploughs are in motion in swarth and stubble. The soil is dry there is a good hard track for the team. And this hardness and dryness prevents the depth of tillage which ought to obtain on fields preparing for the autumn seeding of wheat. We do not see the ploughs in beam deep. Indeed, as a rule it is not the best policy. But we do see the subsoil following the surface plough. This is what ought to be seen in every field that is being ploughed for fall wheat and rye.

For some reason these subsoil ploughs are not used. Why? Is it the scarcity of labour that prevents? Or is it established that it does not pay? Have any of our readers data which go to establish this fact? If so, it is new to us. We have seen the matter repeatedly tested, and we *know it will pay*, on most soils, to incur this extra expense especially on heavy soils where there is no system of underdraining.

Where are your best crops, gentlemen, this season? On your stiffest and shallowest ploughed land? What crops have withstood the effects of the drouth best? those where the plough ran lightest? We should like to know if there is such an instance known in the entire Rural parish.

What is going to be done? How are we to obviate the disastrous effects of drouth? How much has this drouth cost you? that is, what would the difference between your crop the present season and that of a favourable season amount to? Would not the difference go far toward paying the expense of properly draining, ploughing, and fitting the land? And the time has long since passed when any argument was needed to establish the fact that draining, deep ploughing, and other thorough culture were insurance against the vicissitudes of seasons—against damage to crops resulting from too much or too little water.

Then we urge—modestly, as an Editor should—that the teams in the plough-fields be just doubled in number, or that the acres ploughed be diminished one-half, and the depth of soil stirred be doubled or tripled—quadrupled if possible. So shall the good old harvest of the early time come again. So shall the long dry weather be regarded a blessing to the crop, developing in its greatest perfection the seed and the vegetable, the fibre and the plant. So shall the plant receive all the advantage which God designed it should derive from His sunlight acting upon the elements of productiveness contained in the soil. And insects shall be powerless to effect its vigorous growth; no diseased condition of the plant shall invite their ravages nor contribute to their propagation. Stir a less area and stir deeper this fall, gentlemen! It will pay.—*Rural New Yorker.*

Airing, Draining, and Irrigating the Subsoil.

Can any one doubt the advantage of airing the subsoil? and, above all, of draining it and irrigating it? Dig below the five inches of ploughed soil in undrained clays, and you bring up a lump of dense putty as heavy as lead, and as impervious. Place it on the surface, it dries almost as hard as cast-iron; it shines and then cracks by contraction; by-and-by down comes a shower, and your once stubborn and unmanageable mass disappears in a circle of friable crumbs. To a reflecting mind at all acquainted with chemistry, what a volume this disintegrated clod opens up! and how its elements seem to reprove neglectful man for so long preventing their development and utiliza ion by the thousand and one affinities of sunshine, dews, frosts, and other arealities (to coin a word.)

We can now understand why the old man on his death-bed bid his sons dig for the imaginary treasure which he told them had been deposited in his field. They searched, but not in vain; for deep and frequent cultivation brought them money's worth by greatly increased crops. So it will to the British farmer, and so it does to me; and as I look at my seeming corn crops, nearly six feet high, throwing up their heads thickly and evenly till they look like a serrated floor, I know that in that great last effort of nature, their roots now find in what was once the unwholesome and unaerated subsoil, the elements of a completed growth. They do not exhibit the too common appearance of an ill-assorted regiment, where lank grenadiers and little riflemen intermix in incongruous proximity. How sagaciously and profitably has that excellent man, the Rev. Mr. Smith, of Lois-Weedon, carried out deep cultivation. He does not poison his plants by placing them on the raw subsoil, but by ploughing back the top soil, on that on which they grow; whilst the naked uncovered subsoil is dug, manured, aerated, and prepared to form an improved subsoil when the top soil shall be turned back upon it. I am more and more confirmed in my conviction that the general cultivation of this kingdom is under five inches—more sh llow, in fact, than the depth of a common wine-glass—that depth must be measured in the solid earth. When broken up, and set on edge by the plough, it appears deeper. How does that five inches accord with the requirements of my friend Dickson's parsnip, whose roots ran down 13 feet 6 inches in one season! My bailiff was examining the drainage on my neighbour's field (a wheat stubble, on a stiff clay), and found abundant roots of the wheat crop five feet below the surface. So it is with many of our crops. Surely, then, the roots would thrive all the better by finding down below manure, air, and circulating water.—*J. J. Mechi, June*, 1864.

Twenty-two Years' Experience in Draining.

In 1842 I drained most of my farm. On the stiff clay side (plastic yellow clay, like bird-lime in winter and cast iron in summer; too strong to make bricks, free from lime but abundantly supplied with iron rust), I drained 32 inches deep and 12 feet between the drains—the lower part of the drain filled with small stones to the depth of ten inches, and above or rather over the stones a 2-inch pipe, which, binding against the sides of the drain, prevented any surface soil falling in among the stones. Well, it seemed an odd fancy, and just as it was finished Mr. Josiah Parkes's able paper and the 4 feet drainage made me think I had committed a folly, and so, after having drained about 75 acres in this way, my further drainage was done at wider intervals and deeper, with pipes alone. Twenty odd years have rolled away, and year by year my labourers and myself, have watched closely every field and every drain, and we have noticed that the closely drained land with tile and stone is always forwarder and more quickly dried than the wider and more deeply drained; that it harrows more freely and friably, and requires less harrowing than the wide drained, and every drain works as perfectly as it did 20 odd years since.

Now, do not for a moment let it be supposed that I am condemning the modern system of deep draining with pipes alone, which I know to be efficient, especially in soils having any friability; but I am convinced of this—that on our very stiff clays, especially in wet climates, it is most desirable to have the drains near to each other, say 18 feet or less, and also to have ample sized pipes, not merely for the purpose of draining the land, but for ventilating the subsoil. It is on this principle that I consider my close stone and tile drain so effective, and it is on this principle that I advocate, where opportunity offers, to fill the drain with porous material, or stones—the "area of porosity" in the drain, which I once propounded as a theory, has still a strong hold on my mind and on those of my more practical labourers, who say. "Ah, sir, there is nothing like your first drainage; see how regularly the corn dies or ripens in color, even in the furrows, and see how well it works after winter."

A great deal of draining work is being done by Messrs. Eddington, of Chelmsford, by a powerful engine working a mole plough 3 feet deep and 16½ feet intervals. No pipes are put in, but a tunnel larger than a tumbler is formed by the mole forcing its way and compressing tightly the earth or walls or the tunnel. Although I had considerable doubt about its success, especially in our collapsing and uncertain clays, I have seen and know of so many instances of its success that there can be no mistake about it. A good deal has been done in my own neighbourhood. It is a cheap, quick and effective way of getting rid of surplus water by a tenant farmer, who has no compensation for drainage—from four to seven acres can be done in a day. The cost, including horse and manual labour, coals, hire of engine, &c., is under £2 per acre. I believe, out of this 16s. to 18s. per acre is for the hire of engine, with drivers, &c. The drains are, I believe, one rod (16½ feet) apart. The compression must be intense, for on cleaving through the soil, the upper surface is moved and shaken like a small earthquake, and, no doubt, this breaking or lifting in addition to the cutting knife above the mole must admit water freely to the conduit.

The Messrs. Eddington let out many engines for this purpose, and for ploughing, thrashing, &c. I again commend my friends, who farm very stiff, unctuous clays, in cold, wet, elevated districts, to have their drains near to each other. In our cereal southern districts we have the advantage of many wide cracks in the soil.—*J. J. Mechi.*

Immunity from the Midge.

To the Editor of The Canada Farmer:

Sir,—I observe in your valuable journal several articles relative to the *Midge-proof Wheat*, and as it is the all-absorbing topic among farmers at this season of the year, it will not be out of place should we learn further facts respecting this great agricultural boon. Through all the midge section of this county the great question at issue among intelligent farmers is, shall we sow fall wheat, and if we do, what kind is the best? Permit me, Sir, to give your readers a few ideas which I have gleaned from a very careful inspection of several hundred acres of wheat grown in the County of Halton this year. This county is comprised chiefly of table-land, with the mountain which intersects the northern and western portions of it. The high or undulating land, generally speaking, presents the greatest immunity against the ravages of the midge, while, on the other hand, upon the low lands, the fall wheat has been almost destroyed, irrespective of any particular kind of grain. The opinion I have formed regarding the midge-proof wheat is, that there cannot be such a grain in any locality which is infested with these unwelcome guests, unless favoured by the following circumstances: either by its high position and cultivation, or by the stage of development of the grain when the midge appears. Nature is rich in her protective and vegetative resources, and as there is no possibility of access to the germ except by the blossom, or, more botanically speaking, by the style, which is a hollow tube, in immediate contact with the young seed; hence, it is the most feasible point in which this innumerable army of insects can make their most effective and destructive attack. They thus deposit their eggs or ova, which receive their future support from the young grain, and consequently nip it in the bud and arrest its further development. Should the grain be somewhat advanced to maturity, it will be slightly affected by the midge; if, on the contrary, should it not be in blossom during their short siege, it will assume its wonted vigour and yield an excellent crop. (In this manner the spring wheat escaped the midge this year.) It is, therefore, worse than useless for farmers to pay such high prices to our American neighbours for the *midge delusion*. They might as well demand from us wheat that would protect them from the deplorable results of their *chintz bug*, which completely eats their crop near the root and leaves it worthless. The so-called midge-proof can only have the exchange of seed to commend it. We need not be discouraged altogether, as the Hessian fly has had its day, so, in all probability, will the midge pass away.

Milton, August 30th, 1864. C. F.

Cuba Tobacco Grown in Canada.

To the Editor of The Canada Farmer:

Sir,—Some attention, within the last year or two, has been given to the culture of tobacco in Canada West. Few, however, are aware that, with proper care, the finer Cuba tobacco may also be grown here. Curious to test this, I solicited a friend who has correspondents in Cuba, to procure me some seed, last spring. Not having a hot-bed myself, I gave some of the seed to one or two friends, who failed in starting any plants; as a *corps de reserve*, I had sown in a small box kept in-doors a few seeds, which I watered regularly with tepid water, and succeeded in procuring a few plants; these, when about an inch high, were planted out; when stronger I strewed among them super-phosphate of lime, and hoed up well; I have now plants ready to cut. To anyone making the experiment I should recommend that the plants be started in a hot-bed, the seed being covered only very lightly. Plant in rows six feet apart, with four feet between the plants, the leaf attaining a length of 20 to 24 inches; and because, after topping, which must be done when the plant is about 30 inches high, taking off some seven or eight of the topmost leaves and stalks, it will be necessary to go over the field every day or two to pluck off suckers from root and stalk, otherwise you will fail in your object; only are stalks with the leaves to be left. The plant must not be cut down for curing until the leaves begin to look thick, bloated and speckled over with brown spots. After wetting (unexposed to rain) forty-eight hours, hang up to dry in a situation where the sun's rays will not strike. Delay packing until the leaf (of course now divested of stalks) is beyond chance of fermentation. The sweating process, as it is called, takes place the succeeding summer, when the tobacco is perfected. W. G. TELFER.

Toronto, 29th August, 1864.

Harvesting Indian Corn.

To the Editor of The Canada Farmer:

Sir,—As the time is drawing near when Indian corn has to be harvested, I have thought that a few hints in your valuable and widely circulated journal on the subject might be of service to those who have small patches of this useful cereal. I find there is a very general ignorance, around these parts at least, as to the best mode of planting, cultivating, and harvesting Indian corn, which ignorance arises from the fact that it has not been raised, save for the purpose of green corn. If planted in proper season, and properly attended to, Indian corn, in this latitude, usually is ripe from the 1st to the 15th of September. If you have a good variety, as soon as the husks on the ears begin to appear dry, go through the patch, with a basket, and pick off the largest and ripest ears, selecting the ones with eight rows for seed; trace them, that is, leave on each ear three or four husks, and plat them together; then hang them up in the kitchen, or in a dry, warm place. After being thoroughly dried, they can be then removed to the barn or granary, where they will be preserved dry. Don't put them where mice or rats can reach them, however: but hang them up out of reach of hens or vermin. When the husks are beginning to open on the ears, the corn should be cut up by the roots and stooked up. Many go through and pick off the ears, and leave the stalks for the cattle to go through and pick what they please. This is both a slovenly and unwise plan to be followed in Canada, where corn is not extensively raised, and where long winters require the farmer to husband all his fodder. Corn stalks are a very nutritive article of fodder, and of great service to milch cows in winter, if they are properly cured, giving the milk both colour and flavour, as well as increasing the quantity. Not only are they thus serviceable, but when cut and drawn to the barn, they make the land clear for ploughing, and even if not eaten, are, in the barn-yard compost for use next season. My plan is to take a sickle, and grasping the corn in a hill with the left hand, draw the sickle smartly with the right close down to the ground. If suckers are plentiful, the arm should be used. When cut, throw it down before you, and put four or six hills upon each other. After being cut, two should be at stooking, let each take up a bunch and stand them upright, one holding them, while the other gathers up sufficient to make a stook. Have some long oat or wheat straw, and tie the top of the stook in two or three places. When thus stooked, it can stand two or three weeks. When the corn is picked off, have bands of long straw, and put the stalks in sheaves as you lay them down. If dry, bind them up, and stook them carefully, putting from four to eight bundles in a stook, according to size. When thoroughly dried, draw them in and stow them in a loft where they get air. Cattle do not care much for them till the frost sets in, when they should be fed rather sparingly, for if too many be given at a time, they will only pick off the leaves.

Great attention should be paid to the time of cutting the corn. If it ripens early, it should not be allowed to stand till the husks open on the ears, otherwise you lose in the value of your stalks. I recommend, if the corn is well glazed all through, to cut and stook up. If this is done before the frost strikes it, it will ripen thoroughly in the stook. Sometimes corn is late, and it is left too long before it is cut—that is, till the frost strikes it. When the corn is green and the frost severe, it is spoiled, both as grain or fodder. There is a saccharine juice in the stalk which is agreeable to the taste, and which is useful as feed; but no sooner does the frost strike the stalk than the sweet juice becomes insipid. If green corn is eaten before the frost comes, it is sweet and agreeable, but the frost at once changes the taste of it. Frost to corn seems to have the same effect as rust to wheat—whenever it strikes it, the grain makes no more progress in the way of filling—it merely dies and shrivels. In whatever state your corn is, and a cold nor'-wester indicates frost, cut it down and stook it up. It will do something then, but nothing if left standing. I have seen corn served in this manner that was a very fair crop, while patches, equally forward, allowed to stand, were next to worthless. A wise man should be as careful of the frost catching his corn standing as allowing his cattle to go amongst it.

Rockland, August, 1864. J. E.

Seed Grain.

To the Editor of The Canada Farmer:

Sir,—I desire to make a few remarks through the columns of your valuable paper, in regard to the importance of changing seed grain. I have given this matter much attention for the past few years, and my experience has shown me that farmers have overlooked their own interests in this respect, in not being more careful to procure the right kind of seed wheat. Three years ago this fall, I purchased midge-proof wheat in New York State, which proved so good that I sold it all to my neighbours and bought a second lot from the same man, who stated that the one he got it of had offered $50 if one instance could be shown where midge had injured this wheat. Last year I got four bushels of Dayton wheat raised on sandy soil, as mine is clay which I sowed on barley stubble by the side of midge-proof. The Dayton was nearly all destroyed by the midge, while the midge-proof turns out perfectly sound and plump. I wish to direct the attention of farmers to another important fact. Some are under the impression that wheat turns to chess or drips, which is not the case. The wheat I got from New York State had drips or chess mixed with it, but I have a Fletcher fanning mill which will separate the one from the other, and you may sow which you choose, and I will warrant each to produce its own kind. I proved this twenty years ago. I never made a practice of raising foul seed, but in consequence of sickness rented my place; after that I had plenty of it, though it is just as easy to have pure wheat. Farmers should be very careful therefore in selecting every kind of grain for seed, and to avoid the many kinds of foul seed. Pigeon weed seed will mix with wheat without being noticed, unless examined very closely. I have midge-proof wheat I intend to thresh and sell for seed in time for seeding, which I will warrant pure. It always gave me more pleasure to see good fields of wheat than to see a fine $500 horse, carriage and silver mounted harness, though I have myself bought seed wheat since the midge raged until I lost hundreds of dollars, thinking that the midge, like the insect or rust, would only last a year or two. At last I got the Mediterranean wheat which makes poor flour and a light yield at that.

Some give as a reason for the midge not injuring the midge-proof, that it blossoms before they come, but I think it is in consequence of the thickness of the chaff around the berry, or the late heads would be disturbed. Trusting, Mr. Editor, that by another year we may have the pleasure of again seeing broad fields of wheat on every farm in this country, which is the principal source of wealth and the best evidence of returning prosperity to the Canadian farmer,

I am, &c., PETER SHISLER.

Stevensville, Aug. 20, 1864.

W. J. Cowell, of Cayuga Co., N. Y., has been experimenting upon the yield of potatoes, and succeeded in getting 217 from one potato, the most in twelve experiments.

The Breeder and Grazier.

Want of Calculation in Stock Feeding.

A cotemporary states that a large farmer at the West sold last fall twenty tons of hay at six dollars per ton; and again, in January, twenty tons more at ten dollars per ton, and thought that he was making his fortune. In the spring, however, he was compelled to go long distances to buy hay at twenty dollars a ton, giving his note, to save his stock from starvation.

Such occurrences as this show the common want of calculation among farmers in providing winter food for their stock. Every man who has kept cattle and horses as long as three years, ought to know the average amount they will consume per head each winter. The amount will, of course, vary with the seasons—a long and cold winter requiring more than a mild one. If the animals are exposed to the weather and wintry winds, the difference will be very considerable, say twenty-five or thirty per cent.; if they are well sheltered it will be quite small, say not more than ten per cent. The farmer must make his calculations accordingly, and be sure to have enough for any contingency, for it will not be profitable for him to keep them well through three-fourths of the winter, and then starve them to death at last. The amount required per head will also vary with the latitude, as well as with the size of the animals, and the general economy in management. Perhaps it may be taken as an average in the Northern States, that a horse will consume three tons of good hay, and a cow two tons, where good care is given, and a moderate amount of roots, meal and other food. It is important that farmers should inform themselves well on this point, in doing which, approximate results may be easily obtained, by occasionally weighing the food given them during a week.

Every farmer should know the amount of hay he has secured during the summer. A weighing scale for this purpose (which may be also used for weighing fattening animals), would soon pay for itself, by enabling the owner to determine his whereabouts accurately; but in the absence of such a scale, the occasional weighing of a load will soon enable him to guess the amount not very far from the mark. Every load drawn into the barn or stack, should be entered in his memorandum book, and he will thus be enabled to know, with tolerable accuracy, how much he has on hand, and how many animals it will safely carry through the winter. He can then lessen or increase his stock accordingly in good season, without waiting till he has reached the last extremity. Those who have kept no such account may nearly determine the amount on hand by measuring. Hay, cut early, when the stalks are soft and flexible, will settle closer than such as is cut when nearly ripe, or when the stalks are stiff and dry. But, as an average, good timothy hay in a mow or stack, will yield a ton for every five hundred cubic feet—the top, of course, will be lighter, and the bottom heavier, but this will be the average. Clover hay will be nearly one-half lighter—that is it will require some seven hundred feet to the ton. A little practice in this way, with hay which has been weighed, will enable the farmer to judge nearly the amount of hay he has stored. And this knowledge, applied as already stated, will not only enable him to meet his calculations with accuracy and economy, but will save him from much uneasiness and anxiety occasioned by the fear of starving his animals.—*Country Gentleman.*

Importance of Knobs on Horns.

Horns, either on neat cattle or sheep, are a nuisance; and they are just as necessary for horses and swine, as they are for any of our domestic animals. Horns are a weapon that our domestic animals do not need, and therefore, as they are often the cause of no little damage, it is very important that large knobs should be fastened on their sharp ends. These little metallic knobs, which are screwed on the horns, are not worth half the time and expense which they cost to put them on.

When I was accustomed to keep neat cattle, the horns of every one of them, after they were two years old, were knobbed with large wooden knobs as large as a man's fist. By this means my cattle would feed at the racks almost as close together as sheep are in the habit of feeding. It was impossible for one to hurt another with such knobs on the end of their horns. But when the horns were not knobbed, one ill-natured cow, or a pugnacious bullock, would often set up a general hooking throughout the yard, when some of the feeble ones would be seriously injured in the commotion. Many a valuable cow has been ruined because the ugly, sharp-pointed horns of some pugnacious associate were not knobbed. I have always found that if animals get a hooking, it exasperates them, and they will vent their spite on some one they can hook, and so every one gets a severe hooking, except the one that struck or hooked "fust." But let these ugly horns be knobbed, and these ill-natured, hooking dispositions will be softened down like the dispositions of sheep.

The Way to Make Knobs.—Procure a few billets of hard tough wood, and have them turned in the shape of an egg, with the small end cut off square. Almost any turner will turn out a lot of them for half a cent each. They should be not less than three inches in diameter. I always made them four inches in diameter for my cattle. Apple wood or yellow locust will make good ones, by selecting such pieces as will not split easily. Now bore a half inch hole through each one, lengthways of the wood; and then bore out the small end a little with a borer, that may be obtained at the hardware store, which will make a tapering hole to fit the end of the horns. Bore another hole with a nail-bit or gimlet, through the knobs in a transverse direction, for the purpose of fastening them to the horns. Now put them in some vessel containing linseed oil, and let them become well saturated with oil. This will prevent their checking in the sun, and keep them from shrinking and getting loose. My practice was to make a lot of them at one time, so that they would always be ready for use.

The Way to Put them on the Horns.—If an animal will not stand still without tying, fasten his head firmly to a low post or to a piece of timber, which is fastened in a horizontal direction to two posts, which will be much more convenient than a post. Fit the knobs to the horns by whittling, with a sharp knife, either the horns or the knobs, or both of them. When the knob fits well, thrust in a nail gimlet, and mark the horn on both sides. Then bore the hole both ways, and *draw-bore* the holes a little. For fastening on the knobs pieces of wire are much better than nails. Procure some wire of the size of the gimlet, and cut off pieces not quite long enough to reach through the knobs. Grind or file one end to a point so that it will follow the hole well. Put on a knob just as it was marked, and let one man hold a heavy piece of iron or stone on one side of the knob while the wire pin is driven in. Let the pins be driven in by striking smart blows instead of little raps, as pounding on the horns is very much like pounding on the forehead, and some cattle are very sensitive about blows about the head. But by holding a heavy weight opposite the hammer, they will feel but little of the concussion.

Here is another very important consideration about boring the horns. In the horns of young animals the quick, or live pith extends to within half an inch or so of the tips. Therefore the pin holes must be bored very near the small ends, or the gimlet will enter the quick. In the horns of older animals pin holes may be bored two or more inches, if necessary, from the tips, without touching the quick. When neat cattle are allowed to run in the same enclosure with horses or sheep it is very important that every horn should be mounted with a large knob.—S. Edwards Todd, in *Country Gentleman.*

How to Make a Barn-Yard.—The best way, in my opinion, to form a barn-yard for the preservation of manure, without its becoming muddy, where the ground is higher than some of its surrounding parts, is to plough and scrape from the centre to the outside, making a gradual descent from the outside to the centre. Let the fall be one-half foot in ten, and falling a little more as you near the centre. Dig a drain from the centre to some suitable place without the yard, where you can construct a vat to put in leaves, sods, muck, etc., that will absorb it and retain the liquid from the yard. The bottom and sides may be formed of plank, or may be more substantially built of stone and mortar. The top of the vat should be made so as to guard against rains and surface water as much as possible. The drain should fall considerably, and should be made of plank eight inches high and one foot wide inside. The head of the drain should be covered over with a good strong iron grate. The yard ought to be well paved with cobble stone, and with a little pains you can always have a dry yard. The water from the barn and sheds should never be allowed to run into the yard, but should be carried by good eave-troughs to a large cistern for the purpose of watering stock.—*Rural New Yorker.*

The Dairy.

Milking Heifers before Calving.

A correspondent of the *Rural New Yorker*, strongly contends that it is necessary to milk heifers before calving, or they will suck themselves. He adds: "I have tried a great many plans to break them of it. I will give you the best:—Get some No. 3 wire, bend on each end to form an eye, then bend so as to place an eye in each nostril, (the eye keeps the wire from hurting the nose,) then fasten a short piece of wire to the ring, and they can not suck, and will soon forget it."

Cheese-making on a Small Scale.

To the Editor of The Canada Farmer:

Sir, Although among the useful and interesting reading which fills the columns of The Farmer, much has been said about the manufacture of cheese, yet there is still some information upon that subject which a few small dairymen among the readers of The Farmer would like to obtain, more particularly with the view of lessening the burdens of the operation. The parties in question pursue a mixed system of husbandry—raise wheat, barley, peas, oats, corn, with a fair share of roots—keep a small stock of sheep, from 12 to 20 cows, and make mostly cheese, the weight of which will range at from 25 to 50 pounds, single curd, on the milk of twenty-four hours. For this cheese they find a ready sale at Cobourg and the neighbouring villages. Their mode of cheese-making is simple and primitive. Perhaps the Editor of The Canada Farmer, or some of his correspondents, will inform us of the kind of press best adapted to our use—where we can obtain, or how to make a machine for fitting the curd for the press—its size and description? Should the cylinder and concave be filled with small knives to cut the curd, or with sharp spikes to tear it to pieces? Our last operation before putting the curd into the hoop is salting. We think it necessary to have the curd made very fine, that the salt may be diffused evenly through the whole mass. Are we right in this, or is there some other mode of applying the salt more conveniently? T. C.

Grafton, August 22, 1864.

Note by Ed. C. F.—We shall be glad to receive replies to the above queries from any of our readers who are experienced cheese-makers.

Cream Cheese.

An inquiry in the *London Field*, for a receipt for making cream cheese, was replied to as follows by three correspondents:

I see in the *Field* a request for a good receipt for a cream cheese. Those we make at home are much admired. We put a quart of cream into a clean jug, with half a teaspoonful of salt stirred in, and let it stand a day or two till thickish. Then we fold an ordinary glass cloth about six or eight times and sprinkle it with salt, then lay it in a sieve about 8 inches in diameter. The sides of the cloth should come up well over the sides. Then pour in the cream and sprinkle a little salt on it. Change the cloth as often as it becomes moist, and as the cheese dries press it with the cloth and sieve. In about a week or nine days it will be prime and fit to eat. The air alone suffices to turn the cream into cheese.

Take about a half pint of cream, tie it up in a piece of thin muslin, and suspend it in a cool place. After five or six days take it out of the muslin and put it between two plates, with a small weight on the upper one. This will make it a good shape for the table, and also help to ripen the cheese, which will be fit to use in about eight days from the commencement of the making.

Take a quart of cream, either fresh or sour, mix about a saltspoonful of salt, and the same quantity of sugar. Put it in a cloth with a net outside, hang it up, and change the cloth every other day; in ten days it will be fit for use.

Sore Teats.—A farmer of some experience informs us that he finds boiled linseed oil the best thing to apply to a cow's teats when sore. He applies it with the hand, morning and evening, after milking. This will cure them, he believes, when nothing else will. Try it.

Sheep Husbandry.

Diarrhœa and Death amongst Lambs from Tapeworm.

In the midland counties of England, and especially about Birmingham, Glo'ster, and Stratford-on-Avon, hundreds of lambs have for several weeks been falling off in condition, their wool becomes dry, harsh, and standing on end, the best of fare appears of little benefit to them, their appetite fails, the strength and condition rapidly sink, the little creatures scour and strain, their bowels are alternately unduly constipated and unduly relaxed, and within three weeks or a month from the symptoms of ailment being first noticed, they are reduced to miserable skeletons, and die from sheer exhaustion. In the localities indicated we have this week seen hundreds of lambs suffering in this way. Many scores of promising lambs that a fortnight ago were worth 30s each are not now worth 5s; and a large proportion, probably two-thirds of those affected, unless promptly and skilfully treated, perish miserably. In most of the sheep-breeding districts of England cases of this description occur from time to time, and are annually becoming more frequent and serious.

But the complaint although so prevalent is not very generally understood. Such a train of mortal symptoms must obviously proceed from some definite cause, and the straining and diarrhœa induce us to look for the presence of some irritant matters in the bowels. An examination of the dung will disclose further particulars. It is voided more frequently than usual, it is usually light coloured, and contains particles of imperfectly digested food; but besides these more ordinary appearances, there may be noticed amongst it fragments of tapeworms, which are sometimes very minute, are often several inches long, and occasionally are found hanging from the rectum, and have been drawn out to the length of four or five feet. Where the pasture is not very long, on the barer spots where the lambs gather, or on any road which intersects the field, and on which sheep are so fond of lying, and depositing their droppings, these segments of the tapeworms may be plentifully found It is difficult to estimate the immense quantity of fragments thus discharged from the lambs affected, and any calculation made from the portions which may be found would probably fall far short of the quantities actually discharged, for the fragments are promptly picked up by rooks, thrushes, and other birds, who appear to enjoy their feast, and hop about the fields tenanted by the ailing lambs eagerly devouring their prey. Greedily swallowing these segments, and doubtless with them the ova of the tapeworm, the unfortunate birds must in due course themselves become sufferers. From some such causes there was a few years ago a great mortality amongst the grouse on several of our Highland moors.

It is not easily to explain the yearly increasing prevalence of tapeworm amongst young sheep. It has been supposed to result from the larger number of shepherds' and other dogs kept. Dogs it is well known are frequent sufferers from tapeworm, they discharge on the pastures segments and ova which are swallowed by the sheep, come to maturity in the intestines, and produce the serious symptoms above detailed. But the sheep as well as the dogs doubtless disseminate the pest, which, as might be expected, always abounds where the grazings are heavily stocked. The ova, such as are now being dropped on the pasturages, are believed by Von Siebold and other competent authorities to possess wonderful vitality, and even after being exposed for months they will, when swallowed, pass through the several phases and reach the condition of tapeworms— Amongst the many curious circumstances connected with the tapeworm pest in sheep is its proneness to attack lambs several months old. At present amongst the affected flocks they are the chief—indeed almost the only sufferers. Their more delicate intestinal structures may, perhaps, form a more fitting nidus for the operations of the parasite. To some of the interesting speculations regarding the generation and development of these curious creatures, we propose returning at an early opportunity Meanwhile farmers, and especially those whose lambs are dying from the attacks of the parasite, will anxiously look to the practical question, and enquire, how can such cases be successfully treated?

The first matter must obviously be the destruction or expulsion of the tapeworms. In dogs, or even in the human subject, this is seldom very difficult. The extract of the male shield fern, the powder of the areca or betel nut, powdered kousso and lemon juice, infusions of gentian and other bitters, are prescribed in human medicine, with more or less success. In dogs the powdered areca nut is probably the most effectual remedy. But these and other such remedies appear to have little effect on the voluminous digestive organs of ruminants, packed tolerably full, as they generally are, with bulky vegetable food. A most accomplished and observant agriculturist, who has at present two hundred lambs dwindling from the tapeworm, has for ten days been giving them frequent doses of areca nut and male shield fern A drachm of the areca nut, united with an ounce of the powdered fern root, repeated several times a-week has produced little if any effect in removing the worms, whilst little more than half that dose sufficed to bring copious discharges of worms from the shepherds' dogs. Several patent nostrums, worm powders, and drenches have been also tried with the like indifferent results.

For lambs we believe that the most reliable remedy is turpentine, which retains its pungent poisonous action on the worms even in spite of the bulky vegetable food which it meets with in the stomachs. With the turpentine it will be desirable to associate some bitter substance like gentian, which is best given here in the state of a strong infusion. Besides proving unsavoury for the parasites, and thus inducing them to relinquish their hold on the intestinal walls, the gentian moreover helps to impart tone to the debilitated digestive organs. For the same objects a little nitric acid or sulphate of iron may also be added to the mixture. Another ingredient of the dose should be common salt, which with the turpentine will gently move the bowels, and thus clear out the nauseated or poisoned tapeworms, and carry away besides some of the unhealthy superfluous mucus which in such cases so abundantly covers the intestinal walls, and forms a convenient nidus and shelter for the worms. The proportions of the ingredients for a tolerably strong lamb three months old may be as follows:—Oil of turpentine, an ounce; infusion of gentian, an ounce; nitric acid, diluted, ten drops; common salt, an ounce. The dose may be given in water or milk, and be repeated every second day If it purges unduly or if the lambs are small or weakly, the quantity must be somewhat reduced. To support the little creatures' failing strength a variety of tempting nutritive food must be given, and if they are still unweaned the feeding of the ewes should be liberal. After being drenched for several days with this mixture, and the tapeworms in great part removed, much benefit will result from the daily use of a good bitter tonic mixture such as the following – Infusion of gentian, an ounce; nitric acid, diluted, ten drops; tinct. chloride of iron, fifteen drops.—*North British Agriculturist.*

Selecting Ewes for the Ram.

Where there is an opportunity to choose between several valuable rams, the selection of the ewes to breed to each, requires judgment and careful study. The flock of ewes should be examined, the individual excellencies and faults of each, and hereditary predispositions and actual habits of breeding, so far as can be ascertained, fully taken into account; and then she should be marked for the ram, which, in himself, and by his previous get, appears on the whole, best calculated to produce improvement in their united progeny Many of the Vermont farmers thus divide their small flocks of ewes into parcels of ten or twenty each, and take them to the rams owned by a number of different breeders; for, by a prevailing custom, the liberality of which cannot be too highly commended all the most distinguished breeders of that State allow other persons to send ewes to their best stock rams for a merely nominal compensation, considering the advantages which are often thus secured This enables the owners of flocks who can not afford to incur the serious cost and risk of keeping a number of high-priced stock rams, to obtain, notwithstanding, the services of those which are best adapted to breeding with each class of their ewes. And the young and less skilful breeder can thus, too, obtain the immense advantage of using the most perfect sire rams in the country—those which are too costly for his purchase—and those which will improve his flock more in the first generation than he could possibly otherwise improve it in five generations.

Coupling.—Very few flock-masters now feel that they can afford to bestow the whole annual use of a choice, high-priced ram on the seventy-five, or at the very utmost, on the one hundred ewes he can serve, if he is permitted to run at large with them; and to accomplish this, he must be a very strong animal and must be taken out of the flocks nights and fed by himself. And no even tolerably good manager turns two or more valuable rams at the same time into the same flock to waste their strength, excite, worry, fight, and perhaps kill each other. Even the ewes are frequently injured by the blows inflicted by a ram while another ram is covering her.

There are several different modes of putting ewes singly. Some keep "teasers" in the flock so "aproned" that they cannot serve a ewe, and daubed with lard and Venetian red under the brisket, so that when a ewe will stand for them she is marked red on the rump. The flock is driven several times a day into a small enclosure (usually a sheep barn,) in apartments of which the stock rams are kept, the "redded" ewes are drawn out and each is taken to the ram for which she is marked. After being served *once* she is turned into the flock of served ewes.

Another mode is to use no teasers, but to drive in the flock selected for a particular ram twice a day, and let him loose in it; and as soon as a ewe is served to draw her out. After three or four are served, the ram is returned to his quarters, and the remainder of the flock to the field. A very vigorous ram may be allowed to serve from eight to ten ewes a day. This last mode is now generally preferred. It takes up but little more time than the other. It saves the expense and trouble of keeping teasers, which must be frequently changed; for after their making their fruitless efforts for two or three days, they generally almost cease to mark ewes. Lambs and yearlings are nearly useless for teasers. Good stock rams ought not to be put on this service, for it rapidly reduces them in condition.

Any mode of effecting the object in view—one on the correct management of which the success of breeding so much depends—must be conducted with rigid accuracy, so that the mark on the ewe shall in all cases indicate the ram actually used. An erroneous record is vastly worse than none. It misleads the owner, and cheats the purchaser who buys with reference to its showings.

The served ewes should be returned to the ram after the thirteenth day. If they come in heat again, it is usually from the fourteenth to the seventeenth day, but the number is ordinarily quite small if the ram is a good one, and is well managed.—*Practical Shepherd.*

Experiment in Sheep Feeding.

A correspondent of the *North British Agriculturist* contributes the following to that journal: Considerable discussion has taken place at agricultural meetings, as well as in your own columns upon the question—"Does it pay to feed sheep under cover, or at least in confinement?" It has been argued that it does, and it has been proposed to farmers, particularly on clay soils, to make the attempt, seeing that wheat has become unremunerative, whilst mutton and wool are very high in price. One of the premiums of the Highland Society has just been awarded to Mr. M'Laren, who has just conducted an experiment with longwoolled sheep at Rossie Priory for Lord Kinnaird. His paper is published in the recent number of the *Journal of Agriculture.* Its object was to try the feeding qualities of the Scotch and English varieties of the Leicester, and to a lot of each there were added a few of Lord Kinnaird's Leicesters, and also of his well known and admired greyfaced Cotswolds.

The experiment seems to have been conducted with great care, and it appears from comparing the figures that there was after a year's feeding the slight balance of 1s 8½d in favour of the Scotch Leicesters, whilst the Scotch Leicesters to the extent of 5s 3d per head. These results, however, appear to my mind of very slight importance compared with the light which the experiment incidentally throws upon the subject of feeding sheep in confinement. The writer of the paper remarks that the "trial was not conducted for the profit merely, but to test weights and consumption of food;" but I am surprised that he passes over in silence the teaching of the experiment as to gain or loss. The trial was begun with wedder lambs at the end of August, selected from first-class flocks in England and Scotland. They were probably worth 40s each in the market, as they weighed from 80 to 95 lbs., but let us value them at the moderate price of 35s. I find that on an average they cost for a year's keep £3 6s 7¾d per head. They were sold at prices which, after adding the value of the wool, amounted to £3 19s 3d each. The amount of profit and loss will therefore stand thus:—

	£	s	d
Price of each lamb..........	£1	15	0
Cost of keep	3	6	7¾
	£5	1	7¾
Value of each sheep (with wool)...........	3	19	3
Loss on each sheep	£1	2	4½

There is no doubt something to be credited for value of manure where so much cake was consumed; but, on the other hand, I make no charge for extra cost of attendance, or rent of land, neither do I put down anything for the large percentage of deaths, which was three out of forty. There is little doubt, too, that had Southdowns been experimented on they would have been found to endure captivity and confinement better than longwoolled sheep; but when we consider the whole of this experiment, the skill and care with which it was conducted, the good subjects with which it started, and the large sum uncharged for expense of attendance and trouble in shifting hurdles, &c., intending housers of sheep will do well to note its disastrous results in a commercial point of view.

Entomology.

A New Pest.—The American Institute Club have received from a gentleman in Cumberland County, Penn., an account of a new caterpillar, in which he says:—

"It first made its appearance in our section about two years ago; it has now become a terrible pest; it is a small worm, with long hair, green body, with bright yellow and black spots, and quite unlike the old variety that used to infest apple orchards, but have now disappeared. They appear upon all kinds of fruits and shrubs in myriads; they do not take time to build webs, but appear to be continually 'marching on,' and in many respects resemble the ravages of the army worm which I witnessed a few years ago in the West. They are entirely destroying my crop of grapes by eating off the stems and letting them fall. I commenced cutting off branches and leaves as fast as possible, in order to defeat them, but their reinforcements entirely outflanked me. I next applied air slacked lime, but all to no purpose."

The same pest has made its appearance about New York in immense numbers. It has been suggested that extremely hot and dry weather would kill off caterpillars. Has any one ever known of its being done, or did it happen that they had run their course.

Tobacco for Cutworms.—Some years since I concluded on raising some cabbages for winter feed for my cows. With the assistance of my boys I planted several acres, and the next morning on looking at them, I found a great many of them destroyed by cut-worms; we planted more and killed what worms we could find, but the next morning found hundreds of the plants killed. We planted more and strewed ashes, lime, salt, cow manure and chicken manure and in fact everything I could then think of, but did not succeed in stopping their depredations. At last I came to the conclusion that the "critters" had learned to chew, and that my best way would be to supply them with tobacco at once. I therefore put about a-half a pound of tobacco into a bucket of boiling water, and when it was cool I took a pint cup and put a little on each plant as I pricked it out. I looked next morning and found one plant destroyed and the worm beside it dead. I always practise the same plan, and do not think I have lost a plant since: that year I saved 1,500 out of 6,000. I have tried tobacco for the bugs that infest cucumbers and melons, but it does not affect them as it does cutworms.—*Cor. Prairie Farmer.*

The Moth.—The mottled woollen moth (*Tinea granella*) does not feed, as might be conjectured from its popular name, on woollen substances, but upon grain. In its depredations it is terribly mischievous. The ravages of this insect are the more injurious because it leaves no external indications of its presence. The mother moth lays her eggs upon a grain of corn, and when the young are hatched they diverge in all directions, each claiming a separate grain of its own, and burying itself within its new home. Here it remains during its larval state, gnawing away the interior of the grain, and leaving the husk entirely untouched, so that no one would think that within the apparently sound grain there was little but a caterpillar and a heap of dust. Not until the caterpillar has completed its feeding does it give any sign of its presence. Just before it changes into the chrysallis condition, it leaves the now empty grain, and trails a silken clue after it as it creeps away in search of another domicile. Strange to say, it is almost as injurious after it has left the corn; while it was devouring the grain. Instead of attacking the corn, it attacks the wood of which the storehouse is built, and burrows deeply into the floor and joists for the purpose of making a secure home where it may complete its final change. The power of jaw possessed by this little creature is really astonishing. It bores through the wood with perfect ease, driving its burrow to a considerable depth, and passing even through the hardest knots, saturated as they are with turpentine. Some buildings have been quite ruined by these tiny desperadoes, the planks and timber being converted into a very honeycomb by their numerous burrows.—*Our Garden Friends and Foes.*

Veterinary Department.

Enteritis or Inflammation of the Bowels in Horses.

The intestines are composed of three layers of substances called coats, an external or serous coat, a middle or muscular, and an internal or mucous coat. Any one of these coats may become the seat of inflammation and the others be comparatively mildly affected. Enteritis is a very common and also an exceedingly fatal disease amongst horses, and occurs from various causes. Colic very often gives rise to it, or a constipated state of the bowels; also certain kinds of indigestible food, irritating matters of any sort, exposure to cold or it often supervenes upon a hard day's work.

The early symptoms of enteritis are similar to those which precede other inflammatory diseases, as dullness, shivering, loss of appetite, the ears and extremities cold, and these indications speedily succeeded by an acceleration both of the pulse and respiration.

It is seldom, however, that we see our patients until these symptoms have passed away and given place to others more alarming; the animal paws the ground, looks round at his sides, lies down and roll over, and the pulse generally beats from sixty to eighty per minute, the bowels are generally constipated, and the belly is hot and tender upon pressure. The animal never exhibits a complete cessation of pain, but appears to obtain the most relief when laid upon his back with the hind and fore legs completely flexed.

Before death, the symptoms shew excessive general weakness of the patient, the pulse becomes thread, and all but imperceptible, and the skin is covered with a cold perspiration; the pain may either cease entirely when mortification takes place, or continues more or less to the end; the body and limbs are cold, the mouth also cold and clammy. It is of importance to distinguish between spasmodic colic and enteritis, as turpentine, which is often administered in spasmodic colic, and which affords relief in that disease, would destroy the horse that labours under inflammation of the bowels.

When the animal is seen in good time, when the limbs are warm and the pulse full and distinct and not above sixty, blood-letting is beneficial. Large doses of powdered opium combined with calomel, or tincture of aconite, may be given every hour; also linseed oil;—give injections of oil and laudanum in soap and water, and apply to the abdomen; cloths wrung out of boiling water, or liquor ammonia rubbed over the belly, and then covered with a horse-rug or blanket. Aloes may also be given in solution. When the pulse is over seventy beats, and the animal stupid and nauseated, the legs and ears cold, blood-letting is injurious, as the inflammation has already relieved itself by the outpouring of blood on the intestinal surfaces, and the only hope we have of saving our patient is in the administering of stimulents with opium. Give every half hour, in nearly cold gruel, an ounce each of laudanum and nitrous ether, or the sesqui-carbonate of ammonia, and persevere in the application of hot cloths to the abdomen.

Death of a Man from Glanders.—Last week, a man named William Hutchinson, living on the Guelph road, a few miles beyond Millgrove, died of glanders, with all the symptoms of that dreadful malady. He had caught the infection from a horse.—*Woodstock Times.*

Scour in Calves.—A writer in the *Irish Agricultural Gazette* says he last year tried for this disease with good success, giving "a quart of new milk, boiled in the evening and thickened with the best of fine flour. Half of this was given with the skim milk upon which the two calves were fed the next morning, and the remainder with their next evening meal. The same writer thinks twice per day sufficient to feed calves.

The Apiary.

Thomas's Moveable Comb-observing Bee Hive.

We have had an opportunity of carefully inspecting this hive, and think it an excellent one. It is well made, of convenient size, is fitted up with moveable frames of the most approved construction, and has glass windows, which afford the fullest opportunity for observing the bees without at all disturbing them. The makers, Messrs. J. H. Thomas & Bros., of Brooklin, C. W., intend exhibiting their hive at the coming Provincial Exhibition, and we advise all who keep or intend to keep bees, to examine it. By a reference to our correspondence columns, it will be seen that Dr. Holden, of Merickville, an experienced apiarian, thinks this hive "the best yet."

Transferring Bees.

This part of the management of bees should incite deep interest in the mind of the bee operator. It has a temporal, because the preservation of bees enhances the quantity of the delicious products. It has a moral, because we are accountable for all acts destructive of present enjoyment, whether of appetite or mind. We cannot favour the idea that producers should be barbarously massacred in order that the products should be enjoyed. There can be no justification for the act of destroying a colony of industrious insects by "fire and brimstone," when the inventive genius of man has supplied methods by which a momentary subjugation suffices to obtain a supply of their products, which can be justly considered as a recompense for the fostering care bestowed on them. To do this successfully has been the desire of hundreds; the time is known to be either before the swarming season commences, or about twenty days after the first swarm issues. They should not be transferred after the drones disappear as the queen might be unfortunately killed; in which case, though the bees rear another, there would be no drones to impregnate, and the stock would become extinct, unless a supply would be given. This is important and should be remembered.

Operation. The old stock hive should be sprinkled with water to drive the bees all into the hive; after which gently remove the stock hive to a short distance under the shade of a tree or out-house. Set it down bottom side up. Blow a little smoke upon them, to induce them to fill themselves with honey and remain quiet. Before commencing it may be advisable to secure the face by a head-dress, unless you have the "bee charm."

Now return to the old stand and place an empty hive where the stock hive stood, to decoy the bees and keep them contented as they return from abroad. Put a box of the same size as the stock hive over this in such a way as to confine the bees and prevent them from escaping. Take two sticks and rap smartly on the sides of the hive, not too hard, lest the combs may be detached, until the bees have nearly all gone into the temporary attic above, which they will do in about twenty minutes.

Then lay down on the ground two sticks of wood so as to raise the hive about two inches from the ground, and set the box containing the bees upon them; sprinkle the box with water. We now have the stock hive without the bees, the sides of which should be pried off by running a long bladed knife, or a handsaw, between the sides of the hive and the combs to disengage the sides. The combs then can be carefully removed, one by one. Lay them on a table and put a comb frame on them. Cut the combs to fit it and seal them closely into the frames with melted rosin, by pouring it around the inside of the frames and combs. The combs should be placed into the frames in the same manner as they were originally built, (top side up,) as the cells incline upward. The frames should be put into the new hive which they are to occupy permanently, as fast as filled. The combs having been all transferred, shake the bees on the top of the combs and frames. Sprinkle them with water, or blow them down. After the bees are hived, the hive should be partially closed, to prevent robbing, and set on the old stand exactly where the stock originally stood, and in twenty-four hours the bees will have put the house in order. I may add, that it would perhaps accommodate them to clear the bottom board for them two or three times.

The "drone cells" may be known by having cells enlarged. These should be thrown aside and rejected as only a few drones are necessary. There is consumed from three to five pounds of honey daily in some hives by the drones. This should satisfy any one of the advantage of destroying these "gentlemen loafers"—an operation so often neglected yet highly important in a proper and remunerative management of these interesting insects. *Nature's Bee Book.*

The Spider and the Bee-Moth.

From the days when Virgil sang of bees, the spider has been numbered among the enemies of the honey-bee. In common with most bee-keepers, I waged relentless warfare against it until my attention was called to the large numbers of bee-moth often found suspended in its webs. From that time I looked upon it with a friendly eye, satisfied that while it feasted upon many an unfortunate bee, it was entitled to the same favourable regard with the insectivorous birds, which claim a share of the fruits their industry has helped to protect. Within the last two years, however I have found it to my interest to cultivate a still more friendly acquaintance with this detested insect; as I am now able by its help *to preserve all my empty combs from the ravages of the bee-moth.* Let me tell your readers how I came to make so useful a discovery.

Two years ago I placed a small hive, containing an Italian queen from which I was raising other queens, upon an empty old box-hive, which being laid on its side, furnished a convenient stand for my nucleus. Putting some frames with the empty combs for a few days in the box-hive, where they were protected from the sun and weather, and were convenient for replacing frames of brood removed from the nucleus, I noticed that a spider soon spun her web among them, and that in a few days she had caught several bee-moth. During the season I used this place as a receptacle for empty combs, and never saw any indication that the bee-moth had deposited eggs among them. Last year I used the box in the same way, with similar results. Encouraged by this success, I left early last spring a number of empty combs in hives untenanted by bees, and find them, after repeated examinations, protected by spiders, and as free from the depredations of the larvæ of the bee-moth as though they had never been without the protection of the strongest colonies of bees!

Those who have kept pace with the progress of improved bee culture, have long ceased to regard the bee-moth as a very formidable enemy to the successful rearing of bees. Populous and well provisioned stocks suffer only trifling injuries from it, while those that fall a prey to it, are usually queenless, or in such a condition as to be worthless without the aid of an experienced bee-keeper. The presence of the bee-moth is most to be deplored in the apiaries of the skillful, because of the great difficulty of protecting empty combs from the ravages of its offspring. The use of moveable comb hives enables the bee-keeper to turn to advantage every piece of good comb taken from colonies which are broken up, or to which any accident has happened, if such combs can be preserved from the only insect known to live upon wax. But if a single female moth gain access to these combs after they are removed from the bees, or if only a few eggs are deposited in them before their removal, the worms, as soon as they hatch, begin to eat the combs, and so rapid is their increase in hot weather that in a short time such combs are rendered entirely worthless.

Both in Europe and this country many plans have been devised for the safe keeping of empty combs, but all of them require more time and skill than bee-keepers usually have at their disposal. Once committed, however, to the faithful guardianship of the spider, they may be considered secure, whether placed in empty hives, or in any special depository made easily accessible to these watchful insects. If I found the spiders at all dilatory in taking possession, I should put their egg-bags early in the season into the receptacles where I keep my empty combs, or I should capture and introduce some full grown specimens; but thus far any hive or box placed on the ground, and having sufficient opening, has been tenanted as early in the season as I could wish.—L. L. Langstroth, in *Country Gentleman*

Correspondence.

Indian Rubber Bee Gloves.—An enquiry where these could be obtained, and at what price, appeared in our issue of August 15. An advertisement in this number furnishes the reply. They may be had of various sizes by addressing Mr. Robert Anderson, Toronto Rubber Co., 31 West Nelson Street, box 304, P. O. Toronto. From a sample we have seen, we think them an excellent article.

Fruit on the Georgian Bay.—"J. R. F." writes us an account of a tour lately made by him along the south shore of the Georgian Bay, and speaks of the great success of a Mr. Armstrong in raising apples, pears, plums, peaches, and grapes. The dwarf pears seem to do remarkably well in that region. Our correspondent wonders that farmers do not cultivate fruit more generally in a locality evidently well suited for it.

Home-made Tobacco.—"A. B. Brownson," of Bayfield, enquires for directions whereby farmers can manufacture tobacco of their own growing. The manufacture of a marketable article requires machinery and appliances, such as it would be unprofitable for individual farmers to obtain. A very good home made substitute for bought tobacco may, we believe, be obtained by simply subjecting the cured leaves to a considerable degree of pressure.

Suggestions about the Coming Exhibitions.—"W. W. N." of Norwich, suggests that valuable agricultural publications might be given as prizes at the approaching Provincial and Local Fairs, and that thereby much useful information might be imparted. He also urges that judges and committees should give the public the *reasons* for their preference, decisions, and reports, in order that it may be manifest that a righteous and impartial course is pursued in every instance.

Wheat Sample.—"H. Stovel," of Minto, has sent us three heads of very fine looking fall wheat, as a sample of some raised in his garden the present season. In 1862 he observed some heads of spring wheat that ripened before the general crop. He selected these ears, each containing thirty-two kernels, and planted them in his garden in November. The following season they produced ears containing sixty-four kernels. He again planted, and this year has obtained heads containing over seventy kernels. He justly asks: "If that can be done on a small scale, why can it not be done on a larger one?"

The Best Bee-Hive.—"H. Holden," of Merrickville, writes.—"As I am constantly asked, by parties ordering Italian Queens, which is the best kind of bee-hive to use, in reply, I would state a good moveable comb hive is the best in use. I have used several kinds of them for the last six years of American manufacture, but am proud to say we have hives manufactured in Canada that are superior to any of them. I received one from Messrs. J. H. Thomas & Bros., of Brooklin, C. W., a short time since, and find it the best hive I ever saw. I understand they are to exhibit one at the coming Provincial Fair, and would advise all parties interested in bee-culture to be sure and examine it. For the information of parties intending to procure Italian Queens, I would say it is highly necessary for their bees to be in moveable comb hives, as then there is no difficulty in introducing queens."

Write Distinctly! We beg to urge our correspondents to write in as plain and legible a manner as possible. It is often a matter of extreme difficulty to decipher particular words, which a little more care in writing would make perfectly clear. The following extract from a recent communication will serve to point this advice, as it will at once be seen how easily the mistakes pointed out might occur, unless the writing were so plain as to admit of but one sense.

"Last spring you published an article of mine about planting and raising apple trees. I said 'after planting mulch with strawy manure,' but you made me to say *strong* manure; and then in an editorial on the same subject, some time afterward, you condemned your correspondent for giving such advice. Then in the after culture, I said to grow some *hoed* crop, but you made me to say *seed* crop, which would be taken to mean a grain crop, which is not good for a young orchard."

Tree Labels.—"A. F.," of Collingwood, county of Grey, writes:—"I have found the following an excellent mode of preserving the names of fruit trees when set out in an orchard. Take strips of light tin, about six inches long and one inch or so broad at one end and ¼ inch at the other. Rub them with soap when you want to put the name, so as to give them a thin coating of soap; then take a blunt pointed stick or pencil and write the names through the soap. Now pour some strong acid over the writing and it will be bitten into the tin, the soap protecting the other parts. When the name is well bitten in, wash off the soap and the name will appear jet black, and is of course permanent. Apply the labels to the tree by twisting the small end once round the limb; it will expand as the tree grows. I used sulphate of copper dissolved in water, or blue vitriol, for acid. The labels cost a mere trifle, as scraps of tin that will do will be furnished by any tinsmith for a few cents per 100. The labels in my orchard look very pretty, glancing in the sun."

Ringbone in a Horse.—On this subject, "J. F.," of Megantic, writes.—"I have a horse very bad with the ringbone, almost unfit for work. You would oblige me if you would let me know through the columns of The Canada Farmer what would cure him or stop the lameness."

Ans.—If the disease is of long standing, there is but little chance of his getting over his lameness. The treatment we recommend is to give perfect rest, and apply for some time cold applications to the enlargement, afterwards blister repeatedly at intervals of ten days to a fortnight, and in some cases the firing iron is used with considerable success.

Excrescence on a Heifer's Ear.—"G. L. E.," of Bothwell, writes as follows:—"There is a large excrescence (somewhat similar to an overgrown wart), with a number of smaller ones surrounding it, growing on the ear of a heifer I take an interest in. I am desirous of having it got off, for which purpose I have already applied caustic, but with no effect. Will you be good enough to give me instructions what course I am to pursue to get rid of it? And also, what you suppose it has arisen from so that I may guard against it in future?"

Ans.—We would advise to remove the excrescence with the knife. If much bleeding follows the operation, touch the blood-vessels with the hot iron. Afterwards dress gently with a mild caustic at intervals of several days. These excrescences consist in a morbidly increased growth of the outer layer of the skin, and sometimes they reach an enormous size.

Horticultural Exhibitions.—On this subject, "W. T. G." writes as follows:—"As the time has now arrived for holding the autumn shows of the various societies throughout the Province, I should like to say a few words appertaining more particularly to the horticultural department of these exhibitions. In the first place, there is generally a great lack of accommodation for exhibitors in the way of bottles, &c., for cut flowers or bouquets. Dishes are supplied for fruits, but the flowers must shift for themselves. Secondly, the floral arrangement at these meetings is almost always bad, no care being taken to have collections coming under the same classification near each other. Cut flowers should never be placed too high; they must be looked *down* upon, in order to be well seen. Thirdly,—Judges should make allowances for plants, fruit, or flowers brought from a distance, which cannot be expected to look as well as those from on the spot or in the immediate vicinity of the exhibition. A batch of fine roses, for instance, after being carried thirty miles, will not compare favourably with inferior blooms which have not undergone transportation, as they lose their freshness. The same may be said of fruits. These facts should not be lost sight of."

A Word about Prizes.—On this subject "J. A. S.," of Cherry Bank Farm, Burford, writes as follows:—"It seems to me, Mr. Editor, that a very great mistake is made by the managers of our Agricultural Societies in not giving prizes for quantity as well as quality of farm products. Take grain, for instance: Farmer A. raises a crop of wheat, yielding, perhaps, thirty or more bushels per acre, while his neighbour, B., has only fifteen; yet B by taking great pains cleaning and sifting a couple of bushels for the Show, takes the prize from A., who has not taken as much trouble preparing his sample, and boasts that he has raised the best wheat. Now, I say that the man who has raised the largest crop of merchantable grain deserves a prize as much, or more, than he who gets up a nice sample. True, there would be more trouble in awarding the prize, but, I think, it might be done. Root crops, in many places, are now judged by quantity, and why not other products, of course paying attention to quality too? And why does not the Provincial Society give prizes for the best-conducted and most productive farms? It might easily be done, and would be productive of much good, if all the details of management were made a stipulation and published in THE CANADA FARMER."

TO MAKE A MOSS BASKET.—"Alice R., C. W." sends us the following:—"Take a fine piece of wire that will bend easily, cut off about a foot and a half, on one end form a ring about an inch in diameter, fastening it firmly by twisting the wire. Then taking the long end of the wire, form a square loop about an inch and a half in length. Put the wire once around that composing the ring, and then twisting the wire up the side of the loop already made, form another, making about eight loops around the ring. Add another, or as many more rows as will make the bottom of the basket the required size, then form the sides in the same manner, guiding it into the shape you wish. For the rim, twist pieces of wire round until it is strong enough; if a handle is required, it can be formed of twisted wire. In making the basket, never take a longer piece of wire than you can work with facility, always joining both ends to the completed work, and not twisting them together. Having finished the framework, pad the bottom with wool to make it stand firmly, line and cover it with lining muslin, or some other material, cover the handle with silk or ribbon, and then sew on the moss, taking care to join the pieces carefully. The light dry moss that covers fallen trees we find to be the most suitable, that which grows on the ground being entirely unfitted for the purpose. If at all damp, it should be put in a dry place a week or two before using. This method we have found to answer very well, and if no better plan is furnished, we hope it may serve the purpose of your correspondent."

TRAINING HORSES TO STEP HIGH, &c.—On this subject, "J. J.," of Lucknow, says:—"In looking over No. 15 of THE CANADA FARMER, I noticed a plan of training horses to step high, which looks like that adopted by the joiner who was scarce of feed, and got his horse to eat shavings by putting a pair of green spectacles on him. Any thing that has the desired effect is desirable, for a great many horses in Canada are very badly trained, or I may say not trained at all. In Prussia, and in some parts of England, first-class horses intended for gentlemen's carriages, &c., used to be trained as follows:—A small canvas bag or old stocking leg, was filled with wet sand, and tied round each fore leg, a little above the foot, the horse was then taken on to a good, level road, and made to trot under the saddle, on a moonlight night, or before any one was on the road in the morning. It has been proved that horses will learn quicker on a public road, (and especially at night) than in the fields, there being no grain or grass to take their attention. After each horse has got to trot pretty well under the saddle, he is put to carriage work, and larger bags are put on by degrees. I have seen horses with a very heavy weight to each foot. Horses trained as above, when young, are scarcely ever known to have broken knees, it also keeps the horses feet and sinews cool. The above plan is highly recommended by Duckrow, who was without doubt the best horse trainer in the world, in his time."

QUERIES ABOUT THE WHITE WILLOW.—"B. West," of Bond Head, writes:—"As parties have been canvassing this and other townships taking orders for the white willow for fencing purposes, and many of us are unwilling to give orders without some reliable information as to its real utility for fencing purposes, I take the liberty to ask you or some reader of THE CANADA FARMER to give an answer to the following questions. 1. Is the white willow valuable as a road, lane, or field fence, or is it more for ornamental purposes? 2. Will it thrive on different soils, if not, what soil is adapted to it? 3. If exposed to animals, will they feed upon and destroy it? 4. Will it stand our Canadian climate? 5. Will the roots run out to interfere with ploughing, or impoverish the soil near it, or will they sprout from the root? 6. Will it grow high to shade and injure crops unless pruned yearly or frequently? also, are they long-lived? 7. If pruning be necessary, what instrument is best for the purpose? 8. At what age of the willow can slips or cuttings be obtained for new fencing? 9. What is the proper method of cutting, and season of the year for doing so?"

ANS.—1. Our correspondent will perceive from an article elsewhere in our columns, that it is being used for fence purposes in the State of Illinois. The scarcity of timber there makes a quick-growing tree like the white willow valuable for practical purposes. In fence rows its appearance is decidedly ornamental.

2. Whether it will thrive on all kinds of soils is yet to be proved. It seems to have a special affinity and adaptedness to the prairie soil.

3. Animals will eat the tender shoots, but will not touch branches of any size, saplings, or trunks. Stock must be kept from cuttings the first year or two after planting.

4. We have no doubt it will stand the climate of Canada. It has never winter-killed in Northern Illinois, and the cold is quite as intense there as here.

5. The roots run downward more than laterally, and do not sprout when bruised or cut by the plough. As quick, rank growing plants, it may reasonably be supposed that they draw liberally on the soil for nutriment. They grow vigorously, however, on average corn ground.

6. The points embraced in this question can only be settled by actual experiment. As its natural habit of growth, the white willow tends to make a tree, and of course a row of trees of any height will injuriously affect crops close to it. We regard this as the great difficulty in the way of making a fence of the willow. Perhaps it may be overcome by severe and constant pruning, but the Western farmers who have thus far tried it, have been anxious to get all the wood and cuttings they possibly could, and hence have not attempted to subdue it and keep it within bounds. Whether it is long-lived or not as a fence, remains to be proved.

7. The axe, knife or shears may be used upon it at will.

8. Shoots of the previous year's growth are considered best, but old branches and stems will grow.

9. Cuttings are usually made about ten inches in length, and planted two-thirds of their length in the ground. Two buds should project out of the earth, so as to render the growth of at least *one* shoot certain. The cuttings should be made early in the spring after severe frost is over and before the buds begin to swell.

The Canada Farmer.

TORONTO, UPPER CANADA, SEPT. 15, 1864.

Prairie Farming.

EVERY section of country has its local peculiarities in the modes of doing certain descriptions of farm work, but prairie farming is unique—it is almost a system of agriculture by itself—one that has grown out of circumstances which exist only upon those wonderful expanses of land for which the Great West is famed. Having recently paid a flying visit to the prairie region, we propose to "make a note" of a few things that arrested our attention, not doubting that many of our readers will be glad to be made acquainted, if they are not already, with the more striking features of prairie farming.

Prairie land is both level and rolling, and is either entirely destitute of timber, or occasionally dotted with groves, or diversified with belts of wood, generally of light growth. The prairie proper is destitute of either tree or shrub, and the tall grass is only outtopped by the taller flowers, of which there is a profusion some of gigantic proportions and great beauty. All that is necessary to reduce the prairie to the condition of a mellow field is to subdue the soil. This is no easy task, since the turf, undisturbed for ages, is hard and tough as weather beaten leather. From four to six yoke of oxen are needed to drag the plough, though the surface is only *pared*, very much in the same way as British farmers pare an old meadow when they intend to burn the turf. A steel plough must be used, and the wiry grass roots and stems act upon it like so many files, wearing out very speedily. June is the best month for breaking up the prairie, and it is usual to plant corn upon it, the seed being scattered in the furrow, and covered with the next slice taken off by the plough. No further attention is bestowed upon the first crop. Though planted late, and in this "rough and ready" fashion, a good yield is often obtained, and the grain not unfrequently ripens. When it is not likely to mature, cattle are turned upon it early in the fall, and they usually leave but little undevoured. Even when the corn ripens, it is not an uncommon practice to turn cattle and hogs into it, the hogs eating what the cattle waste. When the prairie farmer gathers and houses his corn, he takes no care of the stalks. They are left standing, and what the cattle leave is ploughed into the ground. Not unfrequently the corn is left unharvested all winter, and strange to say the grain does not mildew and spoil, as it is a peculiarity of the "dent" corn, which is invariably planted on the prairies, that the ear bends down as it ripens until it hangs perpendicularly, so that the rain is completely shed by the husks.

The prairie is the home, we had almost said the paradise, of labour saving implements. Very few of the farms have a wood lot on them, so that all the land is under cultivation. The holdings are larger, on the average, than in this country, some of them reaching and even exceeding a thousand acres. Few prairie farmers are satisfied with less than a quarter section—160 acres. Rotation of crops is little thought of, the farms are lightly stocked, and through the summer the cattle rove the marshes or unfenced lands. Labour is scarce, wages are high, the farmer must do his work within himself, and hence labour-saving implements are a downright necessity. A steam plough is, at present, the great desideratum at the West. Several attempts have been made to get one suited to the purpose, but as yet all have failed. A rotary spader, recently invented, and which tills a width of three feet at once, to some extent supplies the lack, but we should think its action rather superficial, and calculated to restrict the crops to a very thin "agricultural pie crust." It certainly lightens the labour of ploughing, the operator having only to ride and drive, not walk and hold. Wheat is usually sown with the drill, and corn is universally planted with a machine. Several corn-planting machines are in use, the most popular being a two-horse machine, which opens the hill, drops the seed, covers it, and does two rows at once, the operator riding in comparative ease. The young corn is tilled with a cultivator, the favourite one being a two-horse cultivator, which does two rows at once. We saw vast fields of corn, the stalks heavily laden with ears, which had received no hand cultivation, and into which a hoe had never intruded. Of all the labour-saving implements in use on the prairie, the most remarkable is the "Header," as it is called. This is a machine constructed somewhat on the principle of the "Reapers," with which we are all now so familiar. But its object is the very reverse of the Reapers in one respect, for whereas they are designed to cut the grain as close to the ground as possible, the "Header" is intended, as its name implies, to take off the heads with as little of the straw as possible. It is found that grain will keep even in a stack with only a few inches of straw attached to the heads, quite as well as in the sheaf, and as the straw is of no account with the prairie farmer, nay, is rather an encumbrance and a nuisance, he prefers to leave most of it standing. The "Header" has a cutting-knife similar to the ordinary Reaper, and about twice the length, its breadth of cut being ten feet. As the heads are cut off, they fall on a platform, upon which an endless band of linen, something like an immense roller towel, constantly works, playing upon wooden rollers. This band or belt works from the platform up an inclined plane at the side of the machine, over which it throws the heads of grain into a large box upon a waggon, which accompanies the "Header" when at work in the harvest field. It requires three waggons to attend one "Header." Each waggon as fast as it is filled is taken to the stack and emptied of its contents, when it returns for another load. Thus cutting, teaming, and stacking all go on at once, and at the close of the day's work, the farmer, instead of being anxious about his grain sheaves, has the satisfaction of reflecting that his wheat is not only cut but housed. The "Header" requires two span of horses to propel it, and instead of their preceding the knife, they follow it. The machine is balanced upon a pair of wheels, in the rear of which a pole runs, on each side of which a team of horses is fastened, connected with the pole is a steering wheel, which is managed by a man, who stands on a small platform just behind the horses. This man also operates a lever which works between the horses and above the pole by which the cutting knife can be either raised or lowered, as circumstances may require The horses are neither driven nor led, but are compelled to go where the operator steers. From twenty to thirty acres of wheat can be harvested in a single day by the use of this machine.

By the help of labour-saving implements, more land has been tilled and tilled better this year in the West than ever before, notwithstanding the immense number of men drained off to the war. In many cases the farmer's girls have turned out and driven the spader drill, corn planter, and cultivator, and have thus made up for the absence of fathers, brothers and lovers on the battle-field. Implement makers at the West "could not begin" as the American phrase is to supply the demand for implements the present year.

Of course prairie farming has its drawbacks and its difficulties, though many perhaps will read the foregoing description and think the West the elysium of farmers, feel discontented with their own lot, and wish to emigrate westward. We see no good reason why a prosperous Canadian farmer should envy his neighbour at the Far West, or want to change places with him. We would quite as soon possess and till a hundred acres of average land in this country as the same quantity on the prairie. Fencing is a serious difficulty at the West. All sorts of expedients are resorted to in the deficiency of timber Rails are scarcely to be got at all and lumber is very dear The best fences you see consist of posts, with three six inch boards nailed on them. Pigs and sheep are not free commoners. Fuel is another difficulty. The winters are quite as long as ours, and more bleak Fierce biting winds sweep the prairie expanses, and the cold is often intense. Farm buildings are very costly, and there is everywhere a lack of barns and accommodation for cattle. Stock must suffer greatly from exposure, and require enormous quantities of food to keep them alive Scarcity of water is another drawback to prairie life. The average of wheat crops at the West is not greater than here, while the distance from market makes the price rule much lower. Corn flourishes luxuriantly and yields bountifully, but is generally worth next to nothing and a drug in the market. Vast quantities of it are often used as fuel. The prairie has its insect marauders as well as other regions, and this year the chinch bug, an enemy to the crops as yet unknown here, has done immense damage both to wheat and corn. Stock raising is no more profitable there than here, from the distance fat cattle must go to market. The fertility of prairie land is not inexhaustible, and ere long the usual requirements of manuring stock-keeping, and rotation of crops will put a new face on affairs. On the whole, we believe the lot of farmers on this continent is pretty well equalized. East, west, north and south, it is an enviable lot. Providence has given us a good land, and the true spirit for us to cultivate, as we contemplate the advantages and improvements in other countries, is a spirit of determination to emulate, and, if possible, to excel them in our own.

Water Witchery.

We have received several communications on this subject, some insisting that there is something in the use of the witching stick, and others asserting that it is all moonshine. One correspondent states that he has tried it, and finds it to "work like a charm" that it has been very useful to him in digging wells and under-ground drains, and that it is a sure way of "detecting springs." Another contends that "the whole scientific secret lies in the way the stick is held in the hands," and that the bending upward or downward is a piece of artful imposture. So confident is he that he says—"Leave the crotched stick in its natural position, *i. e.*, let it be held perfectly still in the hands, and if it turns either downward upward, or any other way, sooner when held over a stream of spring water on the surface of the ground or any known spring of water, of any size or at any depth below the surface of the ground, than it does when held over the dryest spot on the face of the globe, on the highest pinnacle, or, if you will, over a burning mountain I say, if there is the least tendency to its turning sooner at the one place than there is at the other, I fear not to forfeit my existence!"

To put the matter in as fair a light as possible we publish the two best communications, for and against, which have come to hand. For the first we are indebted to H. W. Peterson, Esq., of Guelph. It gives a very full and elaborate statement of the theory and practice of water-finding with the help of the crotched stick :—

"Amongst the queries in your '*Correspondence*' column, in the August number of The Canada Farmer, I find that you are asked by 'Reader' about the virtues of what he calls the 'Water Witch'—that is, whether there is any reliance to be placed on the use of the twigs of beech or hazle or other trees, in the discovery of a *vein of water*, so as to enable him to sink his well in the best position for water. Happening to have witnessed and made experiments myself, I have great faith in what, by many people who have never had it properly explained, is considered an imposition or humbug. In an old letter of Alfred Barnson, Esq., of Wisconsin, to the Commissioner of the United States Patent Office, the matter is fully discussed, and I have extracted therefrom such parts as explain the same, and may prove interesting to your readers.

"You well know that water runs in veins in the earth, and if in digging a well a vein is hit upon, the consequence is a good spring or living water. How to ascertain where to dig in order to strike this vein is the question Are only certain persons endued with a peculiar faculty for doing so? I think no one will deny that some men can direct the well digger where to strike the vein. It is not done by *magic*, but by what is now scientifically called *Bletonism* which is defined by the Imperial Dictionary to be 'the faculty of perceiving and indicating subterraneous springs and currents by sensation' so called from Bleton, of France, who possessed this faculty Some call it 'divining,' some 'water philosophy,' and others, as your correspondent, 'water witchery.'

"The most ordinary instrument used is a fork of peach, hazel or willow, of the last year's growth, so as to be small, slim, and full of sap. The top ends are placed horizontally in the hands, the palms of which are upwards, in the shape of an inverted V, and in the hands of those with whom it will work—for it does not work with every one—the fork end is attracted by the water, if living spring water, under ground, but not by dead or standing stagnant water, nor by what is called *seep-water* It is also attracted by metals, which attract the electric fluid, for *electricity* is the secret of the whole matter.

"The celebrated Dr. Adam Clarke once published a tract upon the subject, mentioning the result of certain experiments he witnessed in the Guernsey Islands, showing that water was infallibly discovered by the method mentioned. The acute philosophy of France discovered the agency of the electric fluid in the matter, resolving the whole into an established law of nature. The Rev. Mr. Avery, of Helden, some years since, made various experiments, and tested the rod by the electric machine. When the rod is brought near the positive pole it is attracted towards it, but if brought towards the negative pole it is repelled. The law which governs in this matter is thus explained :—

"1. Electricity is everywhere distributed, but some bodies generate or imbibe more of it than others Those containing more than their natural proportions are said to be *positively* and those containing less to be *negatively* charged.

"2 One of the established laws of electricity is found in the fact that two bodies similarly charged invariably repel each other, while if one is positively and the other is negatively charged, they uniformly attract each other.

"3. The best subterranean conductors are beds of ore or native metals and veins of water It is their nature to extract the latent fluid from surrounding objects and absorb it themselves. Hence, where these exist there will be most electricity

"4. In general, the human body is also a good conductor, but there are some exceptions Some men usually imbibe or generate the negative and positive in such equal quantities as to maintain an equilibrium in their system. The rod in the hands of such will not be sensibly affected. Others are surcharged and have more than their share, and produce positive electricity. Such, it is said, if they have black hair, will, if rubbed in cold weather, emit sparks.

"5. An individual containing a very small amount of electricity, or who is highly negatively charged (and only such can operate), if he takes the rod in his hand and passes over a surface, beneath which there is a stream of water or a stratum of ore, by the unchanging laws of nature the rod *must* be affected, and, consequently, a sensation will be produced in him who holds it. The person making the experiment is highly negatively charged, that is, has but little of the fluid in him. The water beneath his feet has absorbed the electricity of the adjacent bodies in the earth ; the elastic twig in his hand forms a part of the connection between the positive and negative poles, and two bodies, the one positively and the other negatively charged, by a law of nature always attract each other, and under such circumstances, most unquestionably, the twig will be attracted downward towards the water, and the operator will *feel* it as well as see it.

"6. If the experimenter is positively charged, like the water below, his system having produced or imbibed a large portion of the latent fluid, by the law already referred to, the twig instead of bending downward towards the water, will bend backward towards himself, and the result will be equally perceptible.

"Some men are so sensitive to electrical influence that they can feel without a rod or anything else in their hands where the veins of water are, by the sensation produced upon the throat as they pass over the earth. A relative of my own, before he erected his residence, tested for water by the use of the fork, and placed his house accordingly. I have, with him, also tracked the course of a vein of water which supplied his well through the use of a peach fork."

The second communication is from an unknown hand. For some reason or other the writer has left us without clue to his name or whereabouts :—

"'The water witch!' 'crotched sticks!' And your correspondent has no faith in the 'witchery' of 'beech and hazel.' To him 'the whole affair is a delusion.' But, still, he would like to know if 'science' has aught to say upon the subject. And, Mr. Editor, you tell us, in superior type, that you 'think there is *something* in it,' and call for 'facts.' In a matter of this sort it is easier to *make* 'facts' than to *discover* them there is such a fascination in the realms of mystery to some minds. The surest way to find water that I know is to dig in the most likely locality until you reach it, or, at least, till tools, money and patience give out. A dense, graceful *widow tree* is a good sign, but a 'crotched' stick! Is there a corner big enough in your lively pictorial columns for the appended big 'fact'?

"I once met a vaunted practitioner in the 'witching' of 'crotched sticks' at a tea-party. It was known that I was a sceptic. There was a fine lawn in front, where we all congregated at sunset, a jovial group, full of curiosity and fun. Over yonder, fast by a water spring, grew a noble specimen of the order *Salicaceæ*, its pendulous, elastic branches drooping to the ground. One of the party observed that this sort of wood had an instinctive *penchant* for water, and would exhibit the mystic property better than any other. A twig was speedily cut and trimmed into shape and size. The genius of the hour then arranged himself into a grotesque attitude for a promenade over the grounds, grasping the crotched sapling in a singular fashion between his hands. I stood and watched him. He had advanced only a few paces when he suddenly stopped, and, turning about, asked me to look at the willow. It was *inverted* in his grasp, bent down towards the earth, and that in spite of what seemed a strong muscular effort on his part to resist it. His arms had the rigidity of iron, and his whole frame trembled with an honest, manly struggle! I relieved him of the strange, potent little 'stick,' prompted by pity and curiosity ; but in my hands it was inert, and would show nothing ; nor would it in his, except when he held it in a particular manner, *under the thumbs*. At different points on the lawn, as he paced to and fro, the 'water-witch' would indicate its wonted caprice, now turning down, and anon relaxing itself to an easy position. I then asked him to allow me lead him *blindfolded* over the ground. We had previously marked every spot where the willow bough had scented water. He at once acquiesced, and in a few minutes the result was such as to unsettle the 'faith' of the onlookers, but not in the least his own. Beneath the surface of that soft, ornamental lawn, there was water, as the 'crotched stick' had shown, *everywhere* and *nowhere* ; and so, of course, we all understood at once why the velvety turf was so rich, and so delicious in tint. The 'water witch' belongs to the same class of phenomena as 'table-turning,' and so lies outside the accredited limits of true science. Brewster and Farraday long ago explained the mysteries of tabular oscillation."

The White Willow for Canada.

Many of our readers are doubtless asking the question, "Shall we try the white willow in Canada?" Our reply is, Yes, by all means. Though timber is far from being scarce with us, there is a general need felt for some quick growing tree that will do for shelter in exposed places, for protection to stock, orchards, and dwellings. We also greatly want live fences. Whether the white willow will answer our purpose in these respects, can only be determined by actual experiment. We are inclined to think it will be found useful in this country for wind breaks, round farm-yards, gardens, orchards, and dwellings, if for no other purpose. Many situations are very bleak and exposed—many farms quite stripped and bare of trees, and even as a temporary protection, while other trees are growing, we should be inclined to try the white willow. We are not so sanguine about its adaptation to our wants as a fence. Grown high it must shade a great deal of ground; grown low, if that is practicable, it will occupy considerable width of space, though perhaps not more than any other live fence. The proper course to take is neither to commend nor to condemn in advance, but subject the thing to a fair trial. That it succeeds in Illinois is no proof that it is sure to succeed here. It may be particularly suited to a prairie soil, or it may flourish better in that western clime than here. We should be sorry to see a *furore* about this or any other untried novelty. It is easy to satisfy ourselves about the matter. Willow cuttings can be had for about twenty cents a rod, if not less. Let every farmer who feels an interest in the matter, buy enough to plant a few rods. If the experiment succeeds, he will soon have cuttings enough, and to spare, and can increase his plantation to any extent. If it fails, the loss will be but trifling. We take leave, however, to caution all who purpose experimenting, *first*, to see that they get the genuine white willow (*salix alba*); *secondly*, to take care only to plant living cuttings; and *thirdly*, to expect success only by care and painstaking.

New Importations of Thorough-bred Stock.

We have received from the Hon. D. Christie the following clipping from the Quebec *Morning Chronicle*, of the 6th instant, for insertion in our columns. Our readers will join us in congratulations on the safe arrival of this lot of superior stock, and will look forward with interest to seeing it at the approaching Provincial Exhibition:—

"We notice with pleasure the arrival yesterday, per s.s. *Belgium*, of some very fine thorough-bred stock, consisting of three cows, one heifer, and two bull calves, of the short-horn breed, a Clydesdale horse, and two Cotswold sheep. The cattle have been imported by the Hon. Mr. Christie, Brantford, and the horse and sheep by Mr. Simon Beattie, Markham, C. W. They are all first-class animals, and have been selected with great care and at considerable cost. The cattle were bred by the celebrated Scotch breeder, James Douglas, Esq., of Athelstaneford, and are the plums of his herd. The cows and heifer have attained positions of distinction in England and Scotland, as winners at the national shows. "Queen of Athelstane," a noble four-year-old cow, was got by "Sir James the Rose" (15290), a son of the famous cow "Rose of Summer, the winner of the *three* national first prizes, in 1854. The "Queen" has all the grace, elegance, and great substance which characterized her grand-dam, with her beautifully-modelled head and horns. She has won many prizes at the Highland Society's, Northumberland, Yorkshire, and East Lothian Shows. She was highly commended at the International Show, at Battersea, in 1862, and was this year the *reserve* number at the Royal English show at Newcastle. The next, "Pride of Athelstane," a fine three year old cow, is the daughter of the celebrated cow, "Lady of Athelstane," and was got by Sir James the Rose (15290). She won the second prize as a heifer calf at Battersea in 1862, last year she won the second prize at the Highland Society's Show, at Kelso, and this year the first prize at the Royal English Show, at Newcastle, in probably the best heifer class ever exhibited in England, beating the heifer placed before her at Battersea. She is a young cow of great promise. The third cow is "Placida," a very fine specimen of Mr. Booth's famous tribe of short horns. She won the first prize at Saltown in 1861, and was this year commended at the Royal English Show. She is accompanied by a very fine red and white bull calf, got by "Knight of Athelstane" (20075), and which, by the way, goes to our spirited friend John Ashworth, Esq. The heifer, "Princess of Athelstane," is a real beauty, and is some 14 months old. She is the Queen's first calf, by Watchman (17216), and has began her career most auspiciously, by winning this year the third prize as a heifer calf in a class of 21 at the Royal Show at Newcastle, and the third prize at the Highland Show at Sterling, where she was beaten by heifers nearly double her age, and which had won in the yearling class, in the previous month, at Newcastle. The last animal of this lot is "Crown Prince," of Athelstane, a son of the Queen by next of kin (20105), son of of the prize cow "Rose of Sharon." Next of kin, was this year the winner of the Highland Society's first prize in the yearling class at Sterling, beating the bull which took the first prize in the same class at Newcastle. "Crown Prince" is only a few weeks old, but he bids fair to sustain the reputation of his ancestors. Should they reach their destination in safety, it is Mr. Christie's intention to exhibit them at the coming Provincial Exhibition at Hamilton, C. W. The horse, "Lord Clyde," imported by Mr. Beattie, was bred by Mr. Tweedie, of Castle Crawford, Lanarkshire, and was got by Clyde, the property of Mr. Crawford, of Drumgoich, near Glasgow. Clyde was a noted winner at the Highland Society's and other shows, and was sold to the Agricultural Society, at Lesmahagow, for £350. "Lord Clyde's" dam was also a celebrated winner. Mr. Beattie also brings with him two Cotswold sheep, bred by Mr. Sclater, Stratton, Gloucestershire. Their sire was bred by Mr. Lane, Broadfield, near Cirencester, and was sold at his sale for 75 guineas. Mr. Beattie has spent some five months in England in the selection of as fine animals as he could obtain. In addition to the animals above named, Mr. Beattie shipped for Canada, by the *Pericles*, 40 high-bred sheep, chiefly Cotswold and Leicesters, but he has also imported some Oxfordshire Downs, a very fine breed of sheep, just coming into note in England. They are distinguished alike for the excellence of their mutton and the fineness of their wool, which they afford in large quantity. At the Royal English Show, held at Newcastle, in July last, they attracted much attention. One ram was rented for £75, and another was sold for £100. We sincerely wish the proprietors of this importation success, not merely as a reward for their spirited exertions, but because we believe their efforts to raise the character of our stock will confer substantial and lasting benefit on the country."

☞ The Fall Show of the Dereham Branch Agricultural Society will be held at Mount Elgin, on Thursday, October 6th. The annual fall fair will be held in Tilsonburg, Sept. 22nd.

☞ The *New England Farmer* one of the best agricultural journals in the United States has been obliged to suspend publication, because its continuance entailed loss at the present war prices of paper, labour, &c. We are sorry to miss the welcome face of our contemporary from among our exchanges.

Agricultural Show.—The Union Fall Fair of Markham and East York Agricultural Societies, will be held at Markham village, on the 5th of October, 1864.

Gooseberry Cut.—We expected to have presented our readers with a fine engraving of the Whitesmith Gooseberry, life-size, in our last issue, but it was and still is unavoidably postponed. We hope it may be in readiness for our next number.

Self-Sealing Fruit Jars.—As the season for preserving fruit is now at its height, housekeepers will do well to avail themselves of some of the various self-sealing pots and jars, which can be had at so low a rate. Fruit put up in this way requires but a small quantity of sugar, and retains its natural flavour in a very high degree. Rice Lewis, & Son, of this city, keep for sale W. W. Lyman's patent self-sealing jars, and have sent us a sample. There are different sizes of them. The pints are \$1 75, the quarts \$2 00, and the half gallons \$3 00, per dozen.

The Importance of Shelter.

We seldom take up any of our exchanges without finding something relating to the subject of shelter for gardens, orchards, or fields. This is a very gratifying indication that attention is being turned in that direction; that there are those who are beginning to consider how some stay may be put to the sad havoc which the winds of winter are making alike among the crops of the farm and the trees of the orchard and garden. If there be any people who would be benefitted by a thorough and systematic planting of belts of trees throughout the whole country, it is surely the people of Canada West. Lakes Huron, Erie and Ontario girt the Province with a broad expanse of waters over which the winds have unobstructed sweep, and as the forests are cut away, they pour out upon the land, with unchecked fury, the full force of that might which they have gathered in their mad chase across the water.

The results of this exposure may be seen in the effects of the winds of the past winter. The cold was not greater than it frequently is, but it was accompanied with a wind from the south-west so piercing as to render the cold tenfold more injurious to everything that had life. Fall wheat and clover, in fields and places exposed to its power, were frozen to death in the ground. Grape vines that had passed safely through winters in which the thermometer indicated a much lower temperature perished by those blasts, and all through the garden and orchard we find evidences of their deadly power, very frequently in the loss of fruit, and not seldom in the loss of plant and tree entire.

That it was the wind which caused the cold to be so destructive is clearly seen from the fact that in fields or parts of fields protected by woods, or from any other cause sheltered from the wind, the grain and clover were uninjured; Antwerp raspberries, usually considered tender, when protected by a hedge, bore abundantly; and fruit trees in sheltered places escaped injury. Rarely have we passed through a winter that has been so destructive to vegetable life as the past, nor one in which the evidences were more unmistakable to prove that to the high winds may be set down all this work of death. And what renders the matter more serious than the mere present loss, is the reflection that we can not solace ourselves with the thought that this is an exceptional case, one that is not likely to occur again in a life time. In the early history of the country such a winter would have been indeed exceptional. Nay more, at that time such a winter did not and could not occur. Within the memory of the writer crops of peaches were as uniform in the county of Lincoln as crops of apples. There was but one failure, and that not quite entire, within a period of twenty years. Now it is almost the opposite; a crop of peaches is the exception, and failure the rule. Some think that the climate of the country has changed, and that all we can do is patiently to wait until it changes back again. But there are causes that have been at work which have produced these changes. The increase of population, the erection of buildings and other internal improvements have made necessary more breadstuffs, more lumber, more fuel. To meet these demands the forest has been cut down, acre by acre, until now we have reached the point when there is not enough left to check the course of the winds as they come pouring across our lakes in full fury upon our orchards, gardens, and fields. To this cause we attribute the apparent changes in our climate, and if this view be correct, there remains but one way in which we can remedy the evil, and that is to restore to the country that natural barrier which we have taken away Nor is the work of restoration one that involves a return to the forest state, nor one that is by any means a long and hopeless task. Many of our native hardy trees are rapid growers, and some rapid growers that have been introduced from o her countries prove to be hardy. A belt of these trees of a few yards in width, planted on the west side of the farm, garden and orchard, would in a very few years become a great protection. The white ash, the basswood and the maple, the golden bark willow, silver poplar and Lombardy poplar, are deciduous trees of rapid growth which might be planted with the white pine, white cedar, balsam fir and Norway spruce, in such a mixture that as the evergreens needed the space the deciduous trees might be cut out and used for fuel.

That such a belt of trees will amply repay all the cost and labour involved seems hardly to admit of a doubt. The difference to the farmer between a yield of five or fifteen bushels of wheat to the acre is a very serious item, and there are parts of Canada that this year will not yield even five bushels to the acre, for the reason that the wheat was killed by the wind. The difference to the orchardist between a full and partial crop is equally great, and he is exposed to loss not only from the winds of winter, which kill the fruit in the bud, but to loss in autumn, when the high winds shake his trees and prematurely strip off his fruit. Many in Canada are now planting orchards, or preparing for planting, and the day is not far distant when the fruit-growing interests of Canada will be an important item of domestic industry. With a soil and a climate adapted to the growing of the apple in the highest perfection, and able to grow very many of the most choice and delicious pears, and lying, as we have been proven to be by a writer in one of our leading journals, in the very centre of the grape region, we shall not always pay a tax of half a million of dollars every year to our neighbours for fruit that can be as well, if not better, grown within our own borders. And now when we are planting our orchards and vineyards is the time to provide the requisite shelter, to plant the barriers that shall break the power of these cold and desolating winds, and lay the foundations of full and remunerating crops.

Yet, with all these facts and considerations before us, we are very slow to begin the work of planting trees for shelter. Our fathers took a great deal of pains to cut down and clear up. It cost them many a sturdy blow, and months and years of toil. They battled with the forest all their life, and the ring of the axe and the smoke of the clearing are yet in our eyes and ears. How can we undo their life work, and plant again the forest they toiled so hard to fell? It were too much to expect any such thing Within the whole range of the writer's observation and acquaintance there is but one person who has planted trees for the sake of shelter. Of the present generation, but a very few probably will plant for this purpose; they who do will no doubt reap a rich reward for their forethought and enterprise; all the rest will wait to see if it pays.

Fruit Orchard Experience.

In my judgment, fruit culture is destined to take a prominent place. Instead of being subordinate to everything else, receiving but little attention or none at all, crowded out or put off to a more convenient season, it should and will receive a large share of the attention now bestowed on other products, and assume an importance hitherto unknown, especially in those sections favourable to the perfect development of the fruit, and possessing good market communications.

It will pay to raise apples to feed stock, and better to raise them to sell. I know of no investment on a farm that will pay better for the trouble and expense incurred than an orchard. Let me say a few words respecting 150 apple trees I planted in the spring of 1859. They were selected from the nursery rows, most of them being three years from the bud. A few were older and larger, but are hardly equal to the others now. They were set at the distance of thirty feet each way, in a good loamy soil. The ground has been occupied with hoed crops every year since, now five years No particular attention has been paid the trees, except to wash the trunks with a solution of potash water every June, in order to keep them clean and smooth and keep off the borers, which it has done effectually, since I never could find any on them. They were also mulched four or five feet around the trunks the first few years. I consider this very important to young trees. It keeps the ground mellow and moist, and its decay furnishes food to the tree The roots and stumps of corn cut near the ground, are excellent for this purpose as they last several years, and mice don't live in them. The crops occupying the ground have been manured just as they would have been had there been no trees, and have grown as well as if they had the whole ground; but I think the trees will injure other crops now. Every tree has lived and flourished better than I expected. The average circumference two feet from the ground is over a foot, and the diameter of the head from six to twelve feet. Each succeeding year has given three times as many apples as the preceding one, and I expect an increase in that proportion for some years to come. I am satisfied that planting those trees was the most important work I did that year. Potatoes have to be planted every year; apple trees once in a century; and yet I expect when the orchard is ten years old, to receive an annual return from it as large as I should were the ground planted with potatoes, and with a small part of the outlay required by that crop. The apple is by far our most important fruit crop, and will be. My advice to every farmer is to plant an orchard, not in a meadow, but in a cultivated field, and keep cattle out of it, and take care of it, and you never will be sorry for it.—G., in *Rural New Yorker*.

The Chrysanthemum

This favourite autumn flower is one of the most desirable for every one who wishes to keep up in the parlour or conservatory the beauty and pleasure of summer. Nothing can bear transplanting better, and even after the buds are formed, it may be taken up out of the ground and placed in a pot, which can be plunged in the ground until hard frosts warn us of approaching winter. It should then be taken into the house, where it will bloom freely until New Years.

We give an engraving showing the form of the small-flowered variety, usually called Pompone, or Liliputian, to distinguish it from the large flowerings. The flowers of both varieties are very handsome and of different colours. Of the large flowering, we admire Atlanta, white, tinged with purple; Pallas, orange-salmon, with yellow centre; and Temple of Solomon, a bright yellow. Among the Pompones we would select Aurora Boreale, orange and salmon; Coquette, white, shaded with purplish rose, and Sacramento, orange-yellow.

Peach Trees at Norwich, Co. of Oxford.

Mr. J. Glover, of Norwich, writes to the *Country Gentleman* that by selecting elevated spots of ground which have a good natural drainage, he is enabled to secure good crops of peaches nearly every year. He attributes his success in a great degree to the fact that as the country there is somewhat rolling, the tops of the ridges are more exempt from frosts than the adjacent valleys.

Gathering and Keeping Fruit.

It is becoming a well understood principle that pears are improved by being gathered before fully ripe. Some should approach nearer maturity than others. But early apples should be fully ripe, as a general rule, before gathering. Late fall and early winter apples should not be eatable when picked, and all the late winter varieties should be gathered when too hard to yield to the pressure of the thumb, and always before heavy fall frosts. A dry time should be selected, if possible. There will be a few specimens not yet mature, but you can afford to throw them out to save the best and the main crop. When a good keeping variety begins to drop freely from the tree, as is sometimes the case, secure the balance of the crop that remains on the tree as soon as possible; but they should not be mixed with those on the ground—not one should be saved with those picked. Windfalls will not keep, for in addition to the injury sustained from the fall, they become heated by lying upon the ground exposed to the sun and hot air, and the ripening process already commenced is hastening it to a rapid decay.

No matter how hot the weather is, an apple is always cool while upon the tree, and in that condition should be taken care of, if we would have it keep in its most perfect condition for the full development of all the delicious juices with which it is so abundantly supplied. How to obtain it in that condition will be my purpose now to show. We have seen that it must be carefully gathered before it is too ripe, as it is commonly termed; but I say before it is ripe, for when it is ripe it is fit to eat, and that should not be the case with winter apples when gathered.

We have also seen that heat hastens the ripening process, and that cold retards it. Apples should therefore be kept cool, barely so as not to freeze. A minimum temperature of thirty-four degrees is probably about right, with as little fluctuation as possible. It is not for the purpose of assuming to know more than the most of you about the best method of keeping apples, that I give the subject so large a space in this address, but it is to give it more prominence in our deliberations than it has heretofore had. I regard it as one of the points very much overlooked in all meetings of this kind.

Whether we regard the ripening process as a vital or a chemical action, it is quite sure that it should go on gradual and unchecked until all the good qualities are fully developed, and when the highest point of excellence is attained, then the fruit should be used. It is never so good as when just fully ripe; but is frequently eatable for a long time. Some varieties become dry and mealy, others tough and leathery. Others, by being kept very cool, will frequently remain in a very good condition for a very long time, or by the use of artificial means may be kept for an almost indefinite period.

I hold that the ripening process once commenced, goes on, no matter how cold, if frost is not present, slowly, perhaps but uninterruptedly, until full maturity Hence the importance of a cool cellar, which should always be dry and dark. It should be frequently aired, when the outside temperature will allow of it. Some varieties are much more sensitive to their treatment than others. The Winesap, for instance, which has a thick skin, may be abused a great deal in handling and but indifferently cared for in the cellar, and yet it will keep pretty well; that is it will rot but little; but, if kept close and warm, it is subject to a fungus that renders it scarcely tolerable to eat. But if it is kept cool and dry, all its best qualities are retained. It is also one of the varieties that do best to keep on open shelves The Belmont, on the other hand, which I regard as one of the best and most profitable apples, is very impatient of bad treatment. Its skin is smooth and thin, and flesh of a delicate texture. If roughly handled and kept in a warm room it soon decays. If carefully handled and kept in a cool place, it keeps, with very little waste, till April or May. Indeed, it is, with me, one of the very best of keepers.—*Trans. Indiana Hort. Society*.

Hollyhock Seed.—Double hollyhocks give plenty of seed; and the plants raised from well-saved seed come pretty true to the parent. Take off the pods when ripe, and hang them in bunches in a dry room till March, then rub them out, and sow in shallow pans in a gentle heat. Cut down the stems as soon as you have got as much seed as you require, and apply no mulching till spring; for damp at the collar often causes the destruction of hollyhocks in winter.

Dwarf Pear Trees, &c.

To the Editor of The Canada Farmer :

Sir,—Your correspondent, "A Farmer," gives in your issue of August 1st his experience with the "*dwarf pear*," as he terms it, which correspondence is likely further to impress many people with the erroneous idea that there is but one variety of dwarf pear. Very few persons seem to understand that the pear is dwarfed by growing it on a quince root, and that many varieties may be thus treated, not all, however, with the same measure of success ; some sorts, such as Duchesse d'Angouleme, Louise Bonne de Jersey, Beune Diel, Vicar of Virtefield, and Glout Morceau, are infinitely better when grown on quince than they are on pear ; indeed, on the latter stock they are not worth growing, while on the former they are all magnificent. Again, some other sorts, as Bartlett, Seckel and Lawrence, though growing on the quince, yet are not improved by it, being early bearers and rather dwarf growers, are better and longer lived on the pear. Others, such as Flemish Beauty, Beune Bose, and Sheldon, refuse positively to grow on the quince, and have to be cultivated as standards.

In all probability the cause of a "A Farmer's" oft-repeated failures was that the trees were either unhealthy, or the variety not a suitable one for dwarfing. He does not state what sort is now doing so well with him. The success that has at last crowned his efforts should stimulate others who have been unfortunate to another trial, when it is to be hoped they will be gratified, like him, by the sight of thrifty trees laden with fruit. With pears—and particularly dwarfs—recourse must always be had to pruning, which must be judiciously performed with a view to the end to be obtained,whether to check or encourage growth, or to promote fruitfulness.

Your correspondent is rather hard upon nurserymen, but I think they are not to blame half as much as the buyers. If unhealthy stuff, and that which is not true to name, finds purchasers, there are always plenty of unprincipled men ready to palm it off. It is not because these agents do not understand their business that such stock is sold them, for they seek it out or they buy it cheap, and sell, of course, to more profit. If the Canadian farmers and fruit growers would buy their trees *at home*, they would in all probability be better suited, as it is to the interest of nurserymen carrying on their business in Canada to deal honestly in order to keep up their good name. Foreign nurserymen have no such incentive, and will not be so particular. In addition to this, home enterprise should be encouraged.

Dwarf pears have suffered here in just the same way as the editor describes in the No. of The Farmer referred to above. An orchard adjoining us has been terribly affected, more than one-half the trees are dead, and others still going. The soil is sandy loam. They made a fine growth last year. Our own orchard of 1,000 trees, planted on a clay soil, came out unscathed by the winter frosts, and up to a few days since were looking splendidly, but I am sorry to say the grasshoppers have stripped nearly every leaf, and the buds are just bursting into growth again. These new shoots must be pinched back in order to give the wood a chance to ripen.

Grantham, 24th August, 1864. W. T. G.

Double-Flowered Balsams.

The following directions for growing these beautiful flowers, so that they will be constantly improving with every year's cultivation, we find in substance in the *Genesee Farmer* :—

The plants should be started so early in the season that they will give a second bloom, for the reason that the first and best blooms of very double balsams seldom bear seed. The seed should be saved from the *centre shoots only*, and as low down on the stalk as possible. It is recommended to cut off all the branches or side shoots, so as to throw all the strength into the centre shoot. Seed should *never* be taken from side shoots, nor from the top of the centre stalk. By planting the best double-rose balsams in close proximity to the others, they will be hybridized by the bees, thereby rendering the others more double next year, and imparting to them a double colour.

The soil can not be too rich, but the manure should be well rotted and thoroughly mixed with the soil. If the seed is sown thinly in the hotbed, and the plants allowed to stand until they show for bloom, they can then be removed with a ball of earth and receive less check than if transplanting when quite small.

Miscellaneous.

Cheap Ice-Houses.

For the information of a correspondent, whose letter on ice-houses making and asking suggestions, appeared in our last issue, we publish herewith some illustrations and directions, which we think good, and hope may prove of service. We find them in that excellent Annual the *Illustrated Register of Rural Affairs*. "Cheap ice-houses may be quickly constructed, in the form of strong board shanties, (fig 1,) with a good but not tight floor. Place a few inches of sawdust on the floor, pile up the ice compactly in square blocks, leaving a space of 8 to 12 inches all around, next to the boards, to be filled with sawdust, trodden in, as the structure of ice is built upwards. Cover the whole with 8 or 10 inches of sawdust, and let plenty of fresh air blow through the shanty over the top. Ice will keep in this way as well as in the most costly and elaborate building. Chaff or finely cut straw may be substituted for the sawdust; but being less perfect non-conductors, should be in thicker layers. Ice-houses built of boards, with double walls, (fig. 2,) filled in with sawdust, although they do not keep ice better than those just described, save some labor by obviating the removal of the sawdust every time they are filled with ice. But even these should have a thin stratum of sawdust, say three or four inches, between the walls and the ice, which should be filled in and pressed hard as each layer is laid. The accompanying plans and views show the construction of these buildings. It will be seen in the view of the double walled house, that a large ventilating window is placed in each end at the top; these windows should always be open. There are two double doors at one end in large building, and one in small one—these are for filling and taking the ice out at different heights. Care should be taken that all the sawdust be pressed solid, and no cavities left. An ice-house with one apartment, 8 by 10 feet, and 6 feet high, (including a foot of sawdust all around,) will keep ice enough for a moderate family."

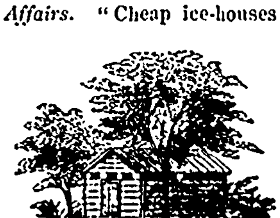


Fig. 1.—Rough or Shanty Ice-House, left open under the eaves for ventilation.

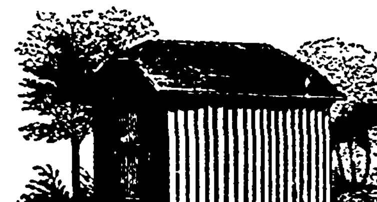


Fig. 2.—Ice-House above Ground. One Door is enough for common sized Houses.

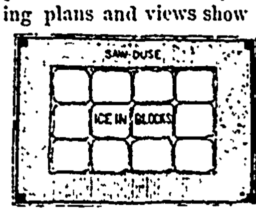


Fig. 3.—Plan of Single-Wall or Board Ice-House.

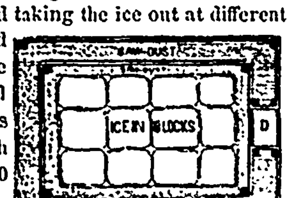


Fig. 4.—Plan of Double-Wall Board Ice House.

Cotton has made the fortune of Dundee. Jute is now its staple manufacture, with great profit. It is a good substitute for cotton in many articles. A gentleman in that city has succeeded in bleaching and dying it so perfectly that it can be used in place of silk for many articles.

Weather and Crops.

"H. D." writes from Moore, Aug. 17, 1864, a brief communication, which ought to have appeared in our last issue :—"This western section of Canada is still suffering severely from extreme heat and drouth. The thermometer has ranged a great part of the time during this harvest from 75° at midnight to 95 and 100° at noon. As we have not had one of those old fashioned showers which we used to enjoy at intervals in years gone by, since the middle of May, you can imagine the burnt up appearance vegetation has under such circumstances. Farmers here are getting nearly through with the harvest, such as it is. Fall wheat will not average ½ of an ordinary crop, owing to the winter and the fly. Oats and spring wheat are better than any one could expect, and will average from ½ to a ¾ crop. In this county (Lambton) where we have a uniform subsoil of strong blue clay, it is no wonder that water is particularly scarce, as there are almost no springs in the south western townships of this county. Many farmers are almost in despair for water ; many having to drive their cattle from 4 to 8 miles to the St. Clair ; others drawing it that distance for their use, which comes to be a serious matter in harvest time."

"C. P. Treadwell" writes from L'Orignal, 20th August, 1864 :—

"In sending you a few remarks on the state of the crops in this section of Canada this season, I would beg to remark that last year was one of unexampled productiveness with us, and this and a favourable fall encouraged our farmers to plough twice as much as was done ordinarily. This induced me (but too late to make the necessary arrangements) to recommend the sowing of four thousand acres of flax in the valley of the Ottawa, which, in my opinion, would here produce a thousand tons of flax, and fifty thousand bushels of seed, as Mr. Sills, of Vonkluck Hill, had produced the largest yield on an acre of any person in Canada ; and we have a large extent of rich clay and black loam ground that produces the best of flax and hemp, without weeds, and our farmers have this season sowed six times the ordinary quantity, I am informed, between this and Montreal, and many have sown rye seed, so that there may be no difficulty next year if the ground is prepared this fall and mills erected, and Coe's superphosphate of lime liberally applied will exceed in those limits even more than a thousand tons—the coarser for our own manufacture, and the finer for export.

"In reference to the crops this season, it is most fortunate that there was a great breadth of land ploughed last fall, for the extreme wet early in the spring, the general want of under-draining and the drouth that followed, has been of much injury to the farmer ; still the early-sown wheat, the Indian corn, the peas and buckwheat, are the best we have ever had, but the straw is very short, oats and barley below an average crop, as well as potatoes, but Swedes, mangolds, carrots, sugar beets and parsnips good except from bad seed. On these roots, and on onions, tomatoes and grasses, the superphosphate of lime has done great good. The sorghum seed has been distributed to nearly two hundred persons, and very little ever made its appearance, the seed being, I think, too old. It is certain that in the clay lands of Lower Canada, as well as on the lower section of Upper Canada, that a more thorough system of under-draining, deep ploughing, a five year rotation of crops, first flax, then roots, then wheat or barley, then timothy and clover two years, and the application of superphosphate liberally would bring 25 or 30 bushels of wheat per acre."

"R. R. F." writes from Compton, C. E., August 25 1864 :—"As you have invited communications upon the the weather and crops, I thought that an account of them from the Eastern Townships might be acceptable. Owing to the constitution of our soil in the E. T., neither wet weather nor long drouth, has the same effect upon us as they have in some other parts of the Province. Our soil is light and porous; it absorbs the rain in wet weather, and never bakes or hardens in dry, consequently the wet weather in spring did not retard our work, therefore, our crops were well along when the drouth began, so that it did not affect them so injuriously as it was elsewhere. Our hay is a little short, especially on uplands, but on the whole, it has yielded beyond expectations. The wheat crop (now don't look incredulous, because we do raise wheat in the townships,) is excellent, and will yield about 25 bushels per acre. Oats are short in the straw, but heavy in the head; peas are good; beans are excellent; barley and buckwheat are average; rye is a pretty light yield; corn promises well; potatoes look better than they have for a number of years, owing as I think, to the absence of rust, of which I have only seen a few instances this year. Turnips are pretty nigh a complete failure, on account of the dry seed time. Altogether the townships congratulate themselves on an excellent crop of every thing, even including *skedaddlers*, of which there has been a most plentiful supply for the last six months, especially since Uncle Abraham's last call for "500,000 more."

"A Newbeginner" writes from Aldborough, Sept. 2nd, 1864, as follows: "We have had so very little change of weather since I last wrote, that I thought it not worth while writing until the close of August. July was a very dry month; on the 6th we had a small shower, scarcely enough to settle the dust. It was very dry and scorching weather on to the first of August. On the first we had a fine thunder shower; in a few days the ground was as dry as ever. We could hear the cattle bawling in all directions for the want of water; we also hear of wells going dry that were never dry before. About the 16th it was very smoky and there were some signs of rain, but it did not come; the 20th brought us a fine copious rain from the east: the 25th brought another fine shower in the morning; the 26th we had some thunder accompanied with a very heavy shower of rain, the 28th a small shower again, very catching weather and cold nights. Our spring crops are very light; the potatoes have heavy tops and light roots."

☞ An exchange paper says:—"The backbone of the drouth has been irreparably broken. Rain is quite abundant all over the country just now.—Farmers are in ecstacies; the fall pasturage promises to be very fine; corn and late potatoes have picked up wonderfully."

Poor Harvest.—A correspondent writing to the Guelph *Advertiser* from Erin village says:—I am sorry to say that there are scores of farmers in the township who have not a sheaf in the barn, the weather having proved so very unfavourable for harvesting. The crops, however, are very good all around here.

The Wheat Crop.—The Cincinnati *Gazette* gives the "summing up of the wheat harvest," as follows: Minnesota, an increase of 2,800,000 bushels; Wisconsin, one-third of an average crop; Iowa, a deficiency of about 1,400,000 bushels; Illinois two thirds of an average crop, or a deficiency of 6,000,000 bushels, and in Indiana a surplus of over 1,000,000 bushels.

The Crops in the Eastern Townships.—The *Journal de Quebec* speaks in favourable terms of the grain harvest throughout the townships. At Somerset particular, our contemporary remarks, grain is excellent with the exception of wheat, which, notwithstanding a fine appearance, will not be a good crop. There, as in fact everywhere else, the hay crop has been very poor, and much apprehension is being felt by farmers generally on the subject of the necessary supply during next winter.

Galt Seed Fair. This market for the sale and exchange of fall wheat, was held in Galt on Tuesday, last, when there was a more than usual attendance of farmers from the vicinity. The market place and adjoining streets were quite crowded, and a great deal of business was briskly transacted. For seed wheat the average price obtained was $1 per bushel, and for wheat for mill purposes 87½c. A good deal of grain, as usual, was exchanged, and the market closed satisfactorily for all parties, considering the nature of this autumn's crop.

Hop Field.—There is, says the Waterloo *Chronicle*, a fine a hop field in Preston, about twenty acres in extent, as can be found anywhere. Two Americans rented the ground in the spring and planted it, and have now the satisfaction of reaping the benefit of their enterprise in a splendid crop of hops. These gentlemen are also erecting a large building for the curing of the hops, on the same field, which appears to be very complete. It is their intention to plant out twenty more acres when the proper time arrives, which, we hope, will turn out as successfully as their first effort.

At the recent sitting of the French Academie, an anecdote was told of a man who recently poisoned himself by wrapping leaves of tobacco round his body so as to escape paying the duty.

Tenant-Farming in Canada.

To the Editor of The Canada Farmer:

Sir,—In one of the first numbers of The Canada Farmer I was pleased to see it stated that the chief object of that paper would be to benefit that class of farmers who, with a constant and increasing up-hill work, were being discouraged, and had well nigh resolved to abandon the pursuit entirely. So far it has kept its promise. While the old and well-established farmer has been told how to apply his accumulating wealth to the best advantage in the improvement of his farm and the selection of his stock, the new-beginner has had no lack of well-devised and well-defined schemes to aid him in every difficulty. Now, in this township (Vaughan), for the last two years—'63 and '64—no farmer has borne the burden and heat of the day with a less reward for his toil than he who works under a landlord. Ever since, and, I may say, as an indirect consequence upon the Crimean war, the rent of land has been held at a very high figure. "Four dollars an acre" no matter whether the land was good or bad, improved or unimproved, fruitful or unfruitful—four dollars an acre must be paid, and so long as the good crops and the high prices lasted, no one could meet his demands more promptly or live more comfortably than the tenant-farmer; but when that insect army of destroyers attacked the fall wheat—the main dependence of every farmer—no one felt the bitter result more keenly than he. Last year the entire produce of some of the best 100-acre farms did not realize more than $350, or thereabouts. Freeholders, after paying their usual bills and balancing their accounts, found that they could allow no rent for their farms that year. How, then, was it with tenant-farmers? Sure enough, with many of them it was a dead lock. The harvest of this year, here, is now at its close, and what is its result as compared with last year? While the average yield of fall wheat cannot possibly be greater than it was last year, that of the entire spring crop must be less; moreover, thelong period of drouth has so affected the pasture-land that the amounts realized for all kinds of live stock, dairy products &c., must fall far short of their corresponding ones last year.

If, then, as we have seen, it was with great difficulty that many of the farmers referred to struggled through last year, what will be their condition next year? How will they pay $4 an acre for land the crops of which, if sold, would not bring that amount? In fine, how will they hold their land at all? Only by the extreme leniency and forbearance of every landlord who knows that his tenant or tenants, after doing their duty, will be unable to meet his demand. Distraining an honest hard-working tenant for rent is the last thing that any rational landowner would attempt, and I am glad to see that the very few who did so last year have the pleasure and profit (and not much of the last-mentioned gratification) of working the land themselves this year, and determining from the proceeds of the crop whether or no they could meet the full demand of the unsparing landlord in whose capacity they had acted the year before.

Those who rent land now will, of course, be guided by the times, and will, it is to be hoped, never need a reduction of rent. But those who have a lease of five years, three of which are expired, may surely lay claim to some of that generosity which has so long maintained good feeling between landlord and tenant in Canada. With the influence, and that vastly increasing, which The Canada Farmer possesses, I think that a few lines in the next number, devoted to this subject, would be read with interest and profit by very many subscribers. REUBEN LEE.

Thanesville Aug 20, 1864.

Note by Ed. C. F.—Our correspondent has stated the case of the tenant-farmer so clearly that there is little need for us to add anything to his well-written letter. The special reasons urged for leniency just now, on the part of the landlords, will, we trust, have their due effect, and we will only take occasion to say that, in our view, tenant-farming in this country greatly needs to be put on a better footing. Leased farms are usually in poor condition, and are rented on very short terms, the landlord being afraid his land will get hopelessly impoverished, and the tenant being afraid he cannot make things pay except by wheat crops, for which he is unable or unwilling properly to manure. The true remedy for the existing state of things is for landlords to take means to get their lands into good condition, and then to bind lessees by legal instruments to be improving tenants. For land in a high state of culture four dollars an acre can very well be paid, while it is too much for exhausted farms If it be said improving conditions are often imposed but cannot be enforced, we reply that they are often only stipulated for in verbal agreements, and that if stated in proper leases there is no difficulty in having them observed. Better land, longer leases, proper manuring, rotation of crops, and good, conscientious farming, would alter the relations of landlord and tenant, render both more contented, and make tenant-farming more profitable than it can be in the loose, unsatisfactory state of things which so largely prevails at present.

To Keep Mice out of Houses.

To the Editor of The Canada Farmer:

Sir,—As mice are a very general domestic pest, I have thought fit to write you a few lines, setting forth a precaution for abridging the liberties of these creatures which suggested itself to my mind last winter, and which I have since acted upon. Carpenters do not usually lay floors in stone or brick houses so close to the wall as to prevent mice from passing up and down from one story to another. Then the wall being ribbed or strapped, the space between the lath and the wall allows these vermin easy access to the space between floors and ceilings where they can enjoy almost unbounded privileges without molestation. Now, my precaution is this: After the floor is laid down, straps up, and the base-boards laid down, *fill the space between the wall and the base-boards with mortar*. As I am not aware of this having been done by any one, and as I know of many who have left it undone, I have thought that your subscribers who contemplate, or are engaged, in building, should have the benefit of this suggestion, if they choose to act upon it.

ROBT. BROWN.

Douglas, Garafraxa.

Life on the Farm.—There is no egg so fresh as that from the farm. There is no milk so rich as the farmer's. No water so pure as from the spring or well where no city streets foul it. No health so good as the farmer's—no life so free from offence. How he sleeps! how he enjoys his meals! what an air he breathes! What an independent life he lives, giving bread to the world?

Prizes for Implements.—The *London Agricultural Gazette* thinks that there is nothing gained by offering prizes for implements at Agricultural Fairs—that it is no benefit to the seller or purchaser, and states that fully as many implements and machines are shown when no prizes are offered—the advantages being that the fairs are good places for the manufacturers to exhibit their wares, and for farmers to examine into the respective merits of the same. The reason given for this is that the awards are not truthful; and with the kind of tests which are applied can not be so. There is too much opportunity for jockeying.

The Agricultural Exhibitions.—The Agricultural Exhibitions this fall promise to be spirited and will be successful if encouraged as they deserve. We write this to urge farmers to sustain them, not merely because the officers in charge deserve this appreciation of their labours—often preplexing, severe, and wholly unrequited—but for the sake of the farmers' own interest. Improvement in breeds of stock, variety of produce, implements, and other agricultural matters are brought directly under the observation of those most interested, by means of these annual gatherings. A visit of an hour, properly improved, may result in more pecuniary profit to a farmer, than months of hard labour. For example, a gentleman at such an exhibition, a few years since, noticed a sample of what appeared to be a superior variety of rye. He procured a small quantity of seed, and from its produce, realized hundreds of dollars of clear profit, by selling it for seed to eager purchasers in his own neighbourhood. The inventive and mechanical world are wide awake, and the farmer must be so too if he would avail himself of the aid they are bringing within his reach. A single improved implement may save the cost of one or two hired men in a season. Illustrations might be multiplied, from every department of agricultural industry. Let work and business be arranged for attending the "Fair," with the understanding that it is one of the *indispensable* appointments of the year—as much as a call from the Provost-marshal. Uncle Sam needs skillful men in the field of culture as well as the field of battle; turn out then on review days.—*American Agriculturist*

The Household.

Cooking Meats.—Every wife and mother owes it to herself, her husband, and her children, as well as to society at large, to prevent waste in every department of the household, whether provisions are cheap or dear, whether the husband is rich or poor; for waste is a crime against humanity, an insult to the bounteous Hand which "giveth us all things, richly to enjoy." On the other hand, a true economy is one of the wisest, the best, and ennobling of domestic virtues. A hundred careful experiments were made in England in reference to roasting and boiling meat in order to ascertain the respective losses. Roasted chickens lost 15 per cent.; beef ribs and sirloins 19 per cent.; geese, 19 per cent.; boiled mutton legs. 10 per cent.; boiled beef, 15 per cent.; boiled shoulder of mutton, 28 per cent.; turkeys lost 20 per cent.; mutton legs and shoulders, 24 per cent.; ducks, 27 per cent. Boiling beef saves more than 4 per cent. over roasting. If a leg of mutton is boiled it loses 10 per cent.; if roasted, 25 per cent.!" The fatter meat is, the greater the loss; it should be moderately fat, to make it tender; but there is an unprofitable fatness. Eleven pounds of roast beef rib lose 2 lbs., and the bones 1 lb., so that of 11 lbs. bought only 7 lbs. come to the table. Hence if roast rib pieces cost in New York, in April, 1864, 20 cents a pound at the butcher's stall, it is more than 31 cents a pound on the dinner-table. It is philosophically true that 1 lb. of clear roast beef is more concentrated than 1 lb. of boiled beef, has less water in it, and hence may contain more nourishment; but the more concentrated food is, the more unwholesome it is, not only because it requires a greater digestive power to convert it into pure blood, but the sense of sufficiency at meals is induced to a considerable extent by the bulk of what is taken, and if we eat concentrated food until there is bulk enough to remove the feeling of hunger, there is so much nutriment in it that nature can't extract it all in a perfect manner; hence there is not only too much nutriment for the wants of the system, but all of it is imperfectly prepared, and we really get less of the strength and less pure blood out of it, than if much less had been eaten, or it had been taken in a more bulky, or, if you please, in a more watery condition. This is the reason why dyspeptics and others eat a great deal, but they do not get strong. But if there is too much bulk, there is not enough nutriment, although a great deal is taken into the stomach. Porter and beer, for example, fill up the stomach, and seem to make persons fleshy, but there is little nutriment and great bulk: great beer-drinkers are never strong, but are puffy. *Hall's Journal of Health.*

The Best Soup.—Liebeg, in his *Researches on Food*, says:—"When one pound of lean beef, free from fat, in the finely chopped state in which it is used for beef sausages or mince-meat, is uniformly mixed with its own weight of cold water, slowly heated to boiling, and the liquid, after boiling briskly for a minute or two, is strained through a towel from the coagulated albumen and the fibrine, now become hard and horny, we obtain an equal weight of the most aromatic soup, of such strength as cannot be obtained, even by boiling for hours, from a piece of flesh. When mixed with salt and the other usual additions by which soup is usually seasoned, and tinged somewhat darker by means of roasted onions or burnt sugar, it forms the very best soup which can in any way be prepared from one pound of flesh."

Family Steak Pie.—Cut two pounds of beef into slices; take two pounds of potatoes, quarter of a pound of onions; season with three teaspoonfuls of salt, and one of pepper; mix well together; put the meat and potatoes into the pie-dish in alternate layers, add half a pint of water, cover over with paste, and bake one hour and a half.

Lemon Dumplings.—Chop the rind of one lemon fine, and add it to the juice; chop up half a pound of suet; mix with half a pound of bread crumbs one egg, enough milk or water to make a stiff paste; add the lemon, sweeten to taste, divide it into five equal parts, and boil in separate cloths for three-quarters of an hour; serve with butter and sugar, or a little honey.

Poultry Yard.

Poultry and Poultry House.

My plan for a poultry house is a plan which will be the most fitted for the easy management of fowls, as well as being the least expensive. For a hen-house, it may be built on one side of the barn, or if you have no building suitable, get four posts and hew two sides; let them be, for the high side, say 9 feet: for the low side, say 6 or 7 feet, which will be enough pitch of roof, provided the house is not more than nine feet wide. Twelve feet by nine will be large enough for 20 hens. Plant your posts firmly in the earth, so as to keep your house firm and steady; get second quality pine or hemlock boards; nail them on lengthwise. If you do not choose to get plates, so as to have the boards run up and down, a shingle roof will be the best, though a good board or slab roof will do well enough, the slabs to cover the cracks between the boards. The house must have a window, with lath nailed across, to let in air and sunshine. The roosts or perches should be placed in the highest side, so as to leave space enough for the convenient placing of the nests, which ought to be in the warmest part. Fit a tight door on with good hinges and a good lock, and you will have as nice a hen-house as you could wish for. The cost will not be more than eight dollars, with lumber at two cents per foot. A good feed or water trough is made out of a chesnut log, something of the shape of a hog-trough. The best breed of fowls in my estimation is the Poland or top-knot; they are excellent layers, and are of profit until five or six years old. There are no better hens than the Poland to raise with. As a good, hardy breed, the English pheasants have no equal; they are good layers and are excellent for the table. Description: They are of middle size, with blue legs and double combs; the males are in colour red, intermixed with black. A good feed for fowl is a mixture of corn, wheat screenings, oats or any grain you can get, mixed together. Fresh meat is very good, but I would not feed on it altogether. To have hens lay through the winter they must not be affected by sudden changes of the weather. Hens that lay steadily through the summer do not lay in winter. Pure water is indispensable in poultry breeding.

Roup and Lice on Fowls.—We have had enquiries as to the best means of driving lice away from fowls: the following prescription has been found successful in many instances:—

To prevent or cure roup and drive lice from fowls, feed them on flour of sulphur, best kind.

To a gallon of boiling water add two large spoonfuls of flour of sulphur, and then thicken with cornmeal, or corn and oats ground together. May be fed warm or cold, but *not hot*. *Feed once a week*. Keep the hen-house clean, sweet, and well ventilated, especially in summer and autumn. Have plenty of dry lime always in the house, and daily throw over the droppings a few shovelfuls—it absorbs the ammonia at once, and keeps the house sweet. Never use coal or wood ashes; their use separates the uric acid, and fills the house with an offensive odour.

In the fall and early winter they are the most liable to roup, then give sulphur more frequently.

If any are sick, separate them, clean their mouths, feed them with soft food and sulphur. When their mouths are sore they can't eat, and die of starvation, unless some food is forced down their throats.

Sick fowls should be kept warm, and have plenty of water.—*Country Gentleman.*

Successful Poultry Keeping.—I see many of your correspondents are complaining of want of success in chicken-rearing this season. I give the following as my experience:—

COCHIN.

January 15th.—11	Hatched........................	7	Reared.
April 16th.— 9	"	9	"
" 18th.— 9	"	8	"
" 24th.—11	"	8	"
May 4th.— 6	"	5	"
" 13th.— 9	"	9	"
64	"	46	"

SPANISH.

June 7th.— 9	Hatched........................	9	Reared.
" 14th.— 6	"	6	"
15	"	15	"

The first have been laying for just a month. The second and third average 4 lbs. 8 oz. each. Perhaps you will tell me if that is not an excellent weight? [Certainly.]

I feed my adult fowls early in the morning (at this season, 6 A. M.,) on wheat, and twice afterwards on a mixture of 1 cwt. coarse oatmeal, 2 bushels of bran, and 1 sack of fine barley-meal, and find them thrive and lay gloriously. They have also lettuce *ad libitum*. —A Country Poultry-keeper, in *Cottage Gardener.*

Poetry.

The Ripening Corn.

How sweet to walk through the wheatlands brown,
When the teaming fatness of Heaven drops down!
The waving crop with its bursting ears
A sea of gold on the earth appears;
No longer robed in a dress of green,
With tawny faces the fields are seen,
A sight more welcome and joyous far
Than a hundred blood-won victories are.

Beautiful custom was that of old,
When the Hebrew brought, with a joy untold,
The earliest ears of the ripening corn
And laid them down by the altar's horn;
When the priesthood waved them before the Lord,
While the Giver of harvest all hearts adored:
What gifts more suited could man impart
To express the flow of his grateful heart?

A crowd awaits 'neath the cottage eaves,
To cut the corn and to bind the sheaves;
At length is heard the expected sound—
Put in the sickle, the corn is browned;
And the reapers go forth with as blithe a soul
As those who joined the Olympia[illegible] goal:
And sorrowless hearts and voices come
To swell the shouts of the harvest home.

And there is a reaper on earth well known
Whose deeds are traced on the burial stone
He carries a sickle more deadly and keen
Than e'er on the harvest-field was seen;
He cuts down the earliest ears in spring,
As well as the ripest tha[illegible] time can bring;
The tares he gathers to flame are driven,
The wheat is laid in the garner of Heaven.

—*London Farmer's Magazine.*

Thoughts when Smoking.

Tobacco's but an Indian weed—
Grows green at morn—soon runs to seed
Shows our decay.
We are but clay!
Think of this when you smoke tobacco.

The pipe that is so lily white,
Wherein so many take delight,
Is broke with a touch—
Man's life is such;
Think of this when you smoke tobacco.

The pipe that is so foul within,
Shows how our life is stained with sin,
And then the fire
It doth require;
Think of this when you smoke tobacco.

The ashes that are left behind,
Do serve to put us all in mind
That unto dust
Return we must;
Think of this when you smoke tobacco.

The smoke that does so high ascend,
Shows us man's life must have an end;
The vapour's gone—
Man's life is done;
Think of this when you smoke tobacco.

Markets.

Toronto Markets.

"Canada Farmer" Office, Sept. 14, 1864.

Flour weak; superfine and fancy $4 25 per barrel; extra $4 40 to $4 75.

Fall Wheat dull at 85c to 88c per bushel, the latter for few samples.

Spring Wheat held at 75c to 78c per bushel.

Barley active at 82c to 86c per bushel

Oats unsteady at 40c to 42c for Canadian.

Pease 55c to 60c per bushel.

Rye 60c per bushel.

Hay in good supply and demand at $14 per ton for best

Straw active at $7 to $8 per ton.

Provisions—*Butter*—Fresh, wholesale, per lb., 13c to 15c; retail, per lb., 18c to 23c.

Eggs—Wholesale, per dozen, 10c to 12½c, retail, per dozen, 12½c to 15c.

Hams—Wholesale, per lb, 11½c to 11¾c; retail, per lb., 12½c.

Flitch Bacon—Wholesale, per lb, 8½c to 9c; retail per lb., 10c.

Cheese—Wholesale, per lb., 10c to 10½c; retail, per lb., 12½c to 14c

Lard—Wholesale 11c per lb; retail 12½c

Beef—Market well supplied; inferior—none offering; second quality, $4 to $4 50; extra, $4 60 to $5.

Sheep scarce, $4 to $4 60 by the car load.

Lambs each $2 to $2 25 for good.

Calves—Each $2 to $4

Hides (green) per 100 lbs., $4 to $5
Calfskins per lb., 18c to 20c.
Sheepskins 75c.
Lambskins 75c
Coal $7 to $8 per ton.
Wood $4 to $4 75 per cord.
Salt $1 25 to $1 50 per bbl.
Water Lime $1 to $1 50 per bbl.
Potatoes—New plentiful at 50c to $1.
Coal Oil at 30c to 40c for Canada, 45c to 50c and 60c for Pennsylvania
Peaches scarce at $2 to $3 per bushel.
Plums very scarce, held at $3 to $4 per bushel
Tomatoes sold at 85c to $1 per bushel
Chickens 40c to 60c per pair.
Ducks 50c to 70c per pair.
Figs 2c to 15c per lb.
Peanuts $3 to $3 50 per cwt
Almonds 12c to 15c per lb.
Filberts 9c to 10c per lb.

Montreal Wholesale Produce Prices, September 9 1864. Flour, per brl of 196 lbs.—*Superior Extra* $4 70 to $4 80, *Extra* $4 50 to $4 60, *Fancy* $4 35 to $4 45, *City Brands of Superfine* $4 26 to $4 30, *Superfine* from Canada Wheat $4 15 to $4 30, *Super* from Western Wheat $4 10 to $4 15, *Western States' Flour* $4 05 to $4 10, *Super No 2* $3 75 to $3 85, *Fine* $3 50 to $3 70, *Middlings* $3 10 to $3 30, *Pollards* $2 90 to $3, *Bag Flour* $2 50 per 112 lbs. The market has improved, and sales have been made at higher prices than those ruling for several days past. *Fancy* changed hands at $4 40 and $4 45. *Super* not in plentiful supply,—strong brands from Canada Wheat are inquired for, and bring 10c to 20c over prices quoted. About 2,000 barrels of *Super* from *Western Wheat* were sold,—a 1,000 barrel lot as it lies bringing $4 15, a 500 brl. lot, inspected and in shipping order, going at same price, some smaller lots of choice bringing exceptional rates. About 500 barrels of *Super, No. 2* were sold at $3 80 to $3 85,—and some strong *Bag Flour* at $2 50 per 112 lbs. *Oatmeal* per brl of 200 lbs.—Range for good $4 75 to $5. *Wheat*, per bu of 60 lbs.—No transactions. *Ashes*, per 100 lbs.—The price of first pots this forenoon was $5 65, same price for first pearls. *Lard*, per lb.—Kegs, 9¼c to 9½c, barrels and tierces 8c to 9c. *Butter*, per lb.—Sales of choice dairy at 20c. to 20½c, of medium dairy at 19¼c, and of good store packed at 18⅞c. *Cheese*, per lb.—Good dairy about 8¼c to 8½c. *Freights*.—No engagements.—*Witness*.

Guelph Markets, Sept. 8.—*Fall Wheat*, per bushel. 80c to 87½c. *Spring Wheat*, 70c to 78c. *Oats*, 25c to 30c. *Barley*, 60c to 70c. *Pease*, 50c to 62c. *Hay*, per ton, $8 to $12. *Straw* $2 to $2 50. *Wool*, 36c to 40c per lb. *Beef*, $3 50 to $5 60. *Pork* nominal, $5 to $6. *Pelts*, 10c to 20c. *Lambskins*, 37½c to 62½c.—*Advertiser*.

London Markets, Sept. 8.—With the sole exception of Saturday's, this has been a week of very small markets, and affords no matter for comment. *Fall Wheat* at 76c to 85c for ordinary, 90c to 95c for seed samples. *Spring Wheat* at 75c to 82c, according to condition. *Barley* held at 62½c to 70c. *Peas* at 50c to 56c. *Oats* in good supply at 25c to 30c. *Flax Straw* $8 to $10, with seed, $10 to $14 per ton. *Hay* offers in sufficient quantity and generally in prime order, at $10 to $13. *Dressed Hogs* occasionally offer and sell readily at $5 per 100 lbs. *Butter*—prime keg wanted at 15c to 17c per lb. *Potatoes* in good supply and fine quality at 50c to 62½c per bushel, by the load.—*Free Press*.

Galt Markets, Sept. 8.—*Fall Wheat*, per bushel, 80c to 87½c; spring do., per bushel, 80c to 85c. *Flour*, per 100 lbs., $2 to $2 25, *Oats*, per bushel, 30c to 40c. *Barley*, per bushel, 70c to 75c. *Peas* 50c to 55c. *Hides* per 100 lbs. $4 60. *Wool*, per lb 45c to 50c. *Pelts* 50c. *Lambskins*, 55c.—*Galt Reporter*.

Mount Forest Markets, Sept. 8.—*Spring Wheat*, per bushel, 70c to 75c. *Fall Wheat* 75c to 80c. *Oats* 30c. *Peas* 50c. *Potatoes* 60c. *Hay*, per ton, $8 to $9. *Hides* $3 50 to $4. *Wool* 35c to 37½c.—*Examiner*.

Newmarket Markets, Sept. 9.—*Fall Wheat* 75c to 82c. *Spring Wheat* 72c. *Flour* $4 to $5. *Barley* 70c to 72c. *Oats* 40c. *Peas* 50c.

Berlin Markets, Sept. 9.—Grain—*Fall Wheat* 90c to 95c. *Spring Wheat* 70c to 75c. *Flour*, per 100 lbs., $2 25 to $2 50. *Oats* 40c to 45c. *Barley* 70c to 75c. *Rye* 70c to 75c. *Peas* 50c to 55c. *Hay*, per 2,000 lbs. $8 to $9. *Straw*, per load, $1 50 to $2. *Timothy Seed* $1 25 to $2 50. *Clover Seed* $5 50 to $6. *Beef*, per 100 lbs., $5 to $6. *Pork* $5 to $6.

Stratford Markets, Sept. 8.—*Fall Wheat* 80c to 85c. *Spring Wheat* 75c to 80c. *Oats* 25c to 30c. *Potatoes* 37c. *Barley* 55c to 60c. *Peas* 40c to 45c. *Timothy Seed*, $1 to $1 50. *Flour*, per barrel, $4 75 to $5. *Wool*, per lb., 28c to 40c.—*Beacon*.

Kincardine Markets, Sept. 7.—Grain—*Fall Wheat* 75c to 80c. *Spring Wheat* 65c to 70c. *Oats* 30c to 37c. *Peas* 37c to 45c. *Potatoes* 45c to 50c. *Flour* $3 50 to $4 50. *Green Hides* $4 50 to $5.—*Bruce Review*.

Sarnia Markets, Sept 8th 1864.—Grain—Fall wheat 82c to 86c, spring do., 75c to 80c. *Flour* $2 25 to $2 50 per 100 lbs. *Barley* 70c to 75c. *Oats* 33c to 35c. *Peas* 48c to 50c. *Hides* $4 per 100 lbs.—*Observer*.

Albany Markets, Sept. 8th, 1864.—Grain—In *Wheat* nothing has transpired, though a fair supply was offering. *Rye* quiet and dull. *Corn* active and firmer, with an improved home and Eastern demand. Western mixed at $1 59½ to $1 60, in store. In *Barley* we have only to note a sale of 400 bushels Ontario county at $2 30, the highest price paid this season. *Oats* unchanged in value and in limited request; Western at 90c.—*Journal*.

New York Markets, Sept. 12.—*Flour* scarce, receipts, 19,515 bbls., market dull, heavy, and nominally lower; sales 6,500 barrels at $9 50 to $9 75 for superfine State; $9 75 to $9 90 for extra State, $10 to 10 15 for choice do., $9 50 to $9 80 for superfine Western, $9 90 to $10 50 for common to medium extra Western; $10 90 to $11 10 for common to good shipping brands extra round hoop Ohio. *Canadian Flour* dull and nominally lower, sales 300 bbls. at $9 80 to $10 10 for common; $10 15 to $11 80 for good to choice extra. *Rye Flour* lower, at $8 to $9 50. *Wheat*—receipts, 86,215 bushels, market dull and nominally 5c to 10c lower, sales 36,000 bushels, $2 25 to $2 30 for amber Michigan, closing at inside price, unsound dull at $2. *Rye* quiet and nominal. *Corn*—receipts 150,487 bushels, market heavy and decidedly lower at 89c to 99c for Western. *Pork* heavy, sales 50,000 barrels at $40 to $41 for mess, $42 25 to $43 for new do., $39 to $40 for prime. *Beef* dull.

Detroit Cattle Market, Sept. 9.—*Beeves*—1st quality per cwt $5 50 to $7, ordinary, $6 to $6 25, common, $4 50 to $5, inferior $3 to $3 50, scallawags, $2 25 to $2 75. *Sheep*—market more inactive and dull than it has been in a number of weeks, sheep not selling so well as they have. There is but little inquiry and few sales. Sales from $4 to $5 per cwt.

Detroit Markets, Sept. 9.—*Flour* superior $11 25 to $11 37½, high extra $10 50 to $10 87½, extra $10 12½ to $10 37½. *Wheat* No. 1 white $2 33; No. 2 do $2 18 to $2 19; No. 1 amber $2 18 to $2 19; No. 2 do $2 13. *Corn* $1 45. *Oats* 75c to 78c. *Barley* $3 to $3 50 per 100 lbs.

Chicago Live Stock Market, Sept. 8.—Beeves—Prime to choice $7 50 to $8 25, fair to good $6 50 to $7 25, common to medium $4 25 to $5 50, inferior $2 50 to $4. Good to extra *Hogs*, of 150 to 250 lbs averages, $10 50 to $12, common to medium of 125 to 175 lbs averages $6 to $10. *Sheep*—Prices were steady and unchanged, *Sheep* averaging 80 lbs, at $5 30, do 102 lbs, at $6 87½, do 91 lbs, at $6 50.

Advertisements.

NEW GRAPES.

THE following ten New Varieties of Hardy, Early and Excellent GRAPES, are now offered, for the first time in Canada, at the following price:—Rogers' Hybrids, Nos. 1, 3, 4, 15, 19, Cuyahoga, Allen, Maxataroney, Alvey and Perkins, $1 each—$7 for the ten varieties. Delaware, Hartford, Prolific, Northern Muscadine, Ontario, Rebecca, Diana, Concord, Canadian Chief, Louisa, and Millers' Burgundy, 60 cents each—$4 for the ten varieties, or $10 for the twenty varieties.

STRAWBERRY PLANTS.—Triumph de Gand, Wilson's Albany, Jenny Lind and Hooker, $1 per 100—$4 per 1,000, Russell's Prolific, 60c per dozen.

Apple Trees of all the leading varieties, from 5 to 7 years old, 6 to 9 feet high, $10 per 100. Other Nursery Stock at the same cheap rate, all warranted true to name, and delivered at the Railway Station or Express Office in Paris, free of charge. Address CHARLES ARNOLD, Paris Nurseries, Paris, C. W. 17-1t

BEES FOR SALE,

BY THE UNDERSIGNED, this Fall, **40 YOUNG BEE-HIVES**, of a superior kind, which swarmed since the 1st of June last. The price from **$4** to **$6** each Hive. Directions given, if required.

DANIEL McNAUGHTON,
Springdale, Onondaga P. O., Co. of Brant.
September 8th, 1864. 17-2t

HARDY FLOWERING BULBS,
FOR FALL OF 1864.

MY ILLUSTRATED ANNUAL CATALOGUE of Hardy Dutch and other Flowering Bulbs, and "GUIDE TO THE FLOWER GARDEN," is now ready to send out. It consists of full and plain descriptions of the best

Hyacinths, Tulips, Crocuses, Snow Drops, Crown Imperials, Anemones, Lilies, &c., &c.,

with ample directions for planting and culture. My Catalogue this season is beautifully illustrated, containing among other illustrations two full page engravings, and one beautiful colored plate of

THE JAPAN LILY.

It will be sent free of postage to all who apply, inclosing ten cents. Catalogues always sent to my customers of the previous year free, as soon as issued, without being ordered.

My importations from Holland the present year have never been equalled for extent, variety and excellence.

Address JAMES VICK,
17-1t Rochester, N. Y.

IMPORTED CLYDESDALE MARE, &c., FOR SALE.

"BARONESS OF LEYS," 4 years old, imported October, 1863, stinted to imported "Comet," will be on the grounds at Hamilton, and show in "Class 4, Sec. 11." Also, a very fine yearling Colt, "Suffolk Sovereign," 1st prize at the Northumberland County Fair, 1st at Hamilton Township, 2nd at Kingston. Several Leicester Rams (prize animals), and Bulls, Cows, Heifers and Calves, the best from my

PRIZE HERD OF AYRSHIRES.

I must do my best to sell (for various reasons), and will ask no fancy prices.

PATRICK R. WRIGHT,
17-1t Cobourg, C. W.

WANTED,

IN every household in the country—The **INDIA RUBBER GLOVE**, whether in Washing, Scrubbing, Gardening, or tending Bees, is indispensable. Acids do not affect them. They preserve the hands and keep them white. Short, $1 00, ½-Long, $1 25 per pair. Gent's do., suitable for driving, $1.50—will wear for years. Sent free on receipt of price. Send stamp for Circular. Agents wanted everywhere. All sorts of Rubber Goods made to order.

ROBERT ANDERSON, Toronto Rubber Company,
17-1t 34 West Nelson Street, Toronto, Box 304, P O.

WANTED,

CANVASSING AGENTS for "THE GLOBE" and "CANADA FARMER" in all parts of Upper Canada. Address The Publisher, Toronto.

Toronto, Sept. 12, 1864. 17-2t

IMPORTANT ANNOUNCEMENT
To Breeders, Farmers and Agricultural Societies!

MORETON LODGE, GUELPH, C. W.

MR W. S. G. KNOWLES begs to announce that he has received instructions from Frederick Wm. Stone, of Moreton Lodge, Guelph, C. W., to sell by Auction, on WEDNESDAY, the 12th day of OCTOBER next, about twenty head of very superior pure-bred **SHORT-HORNS**, consisting of Bulls, Cows and Heifers, that have been bred from animals of high repute, several of which have been awarded First Prizes in their classes, at the Provincial Exhibitions. Also, a few young **HEREFORD BULLS** of great promise.

About forty grand Cotswold Shearling and other Rams, fifteen superior South Down Rams, a few fine pure-bred Leicester Rams. Also several pairs each of pure bred Cotswold, South Down and Leicester Ewes. About fifty pure bred Berkshire Pigs (bred from first class imported animals), of various ages. Catalogues, with Pedigrees and other particulars, will be ready to issue by first of October and may be had on application to Mr. Knowles, or of Mr. F. W. Stone, Guelph, C. W.

Moreton Lodge, Guelph, 12th Sept., 1864. 17-2t

J. A. SIMMERS,
SEEDSMAN,
WEST MARKET PLACE, TORONTO, C. W.

BEGS to inform his friends and the public that his annual supply of HARDY DUTCH FLOWERING BULBS, for Fall planting, has just arrived in first-rate condition. The collection is larger than usual, and comprises everything of merit.

J. A. S. only imports *Bulbs of first quality*, and supplies them as reasonable as any house on this continent. Catalogues, giving description and prices, supplied gratis on application.

Toronto, Sept. 15, 1864. 17-2t

SALE OF
Thorough-Bred North Devon Cattle, Sussex and Hampshire Sheep, Essex Swine, &c.

MR. GEORGE MORLEY, will sell by Auction, on Thursday, the 13th of October, and following day, the entire Live and Dead Stock of Mr. Daniel Tye, of Nith Grove, Wilmot, near the Village of Haysville, Co. of Waterloo, (the Farm being sold.) The present Stock on the Farm, comprise about Forty head of the purest blooded North Devon Bulls, Cows, and Heifers, besides Steers, and a superior Yoke of Devon Oxen, upwards of 150 Down Ewes and Rams, 5 Horses, Essex Swine, &c.

THE IMPLEMENTS

Are such as a person might expect to find on a well cultivated Farm. The Proprietor will, as heretofore, be an Exhibitor at the the Provincial Exhibition, when it is likely some of the stock may be parted from. Every thing must be sold and cleared from the premises by Saturday, the 15th of October.

Twelve months credit may be had, by giving satisfactory endorsed notes.

September, 1864. 16-2t.

THE APPROACHING PROVINCIAL FAIR will afford the best opportunity of circulating information among the Farming community from all Sections of the Province, an opportunity which Manufacturers of Agricultural Implements, and all others interested in Farming Pursuits, should eagerly embrace, by having CARDS, CIRCULARS, and HAND-BILLS, descriptive of their Occupations and Manufactures broadcast throughout the immense throngs that will be present at Hamilton, on the 27th, 28th, 29th and 30th of this month, in view of which contingency, the Proprietor of the "Canada Farmer" and "Globe Steam Job Press," 25 King St. West, Toronto, has made arrangements to have his Establishment open at all hours, to execute every description of *Printing*, at the lowest prices and on the shortest notice. Orders by Mail punctually attended to.

September 1, 1864. 16-2t.

PERUVIAN GOVERNMENT GUANO.

THE undersigned have on hand a few tons of this valuable Manure, which they are anxious to introduce among Canadian Farmers and Horticulturists. They offer it for sale in small quantities, in order to give the Manure as wide a circulation as possible. Should sufficient encouragement be given, they have made arrangements to receive importations direct from the Chincha Islands, by which they will be able to offer the Guano at a price much below that of any other manure.

The following is one illustration of the comparative result of the application of different manures at a cost of 18s. for each, arrived at by experiments made upon several quarter-acre plots of land, by Mr. E. T. Beame, of Stover:—

Manure Applied.	Quantity.	Weight of hay cut per ¼ acre.	Cost of Manure.	Net Gain.
None	......	401 lbs.	......	......
Sup. of Lime	2¼ cwt.	616 "	18s.	215 lbs.
Nit. of Soda	1 "	706 "	18s.	305 "
Guano	1¼ "	1,210 "	18s.	809 "

Further statistics, and all other information, may be obtained from

DUNCAN, CLARK & SCOTT,
16 Ontario Hall, Church Street, Toronto.

HORSE HAY FORKS.
ON EXHIBITION AND FOR SALE.

AT the AGRICULTURAL HALL, Corner of Yonge and Queen Streets.

Toronto, Aug. 1, 1864. 14-2t

LANDS FOR SALE.

TWENTY THOUSAND ACRES OF LAND, both wild and improved, and at all prices, for sale in various townships throughout Upper Canada, cheap and on easy terms.

For lists and particulars, apply to the proprietor,

T. D. LEDYARD, *Barrister, &c.*,
South-west cor. of King and Yonge-sts., Toronto.

Toronto, March 15, 1864. 6-tf

The Canada Farmer is printed and published on the 1st and 15th of each month, by George Brown, Proprietor, at his Office, No. 25 King Street West, Toronto, U. C., where all communications for the paper must be addressed.

☞ Subscription Price $1 per annum, (Postage Free,) payable in advance. Each subscriber will receive the back numbers, which are always to be had. No subscriptions received for less than a year, and all commence with the first number, and end on 31st December, 1864.

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The Canada Farmer presents a first-class medium for Agricultural advertisements. Terms of advertising, 20 cents per line of space occupied—one inch space being equal to 12 lines. No advertisement charged less than $2, being ten lines of space.

Communications on Agricultural subjects are invited, addressed to "*The Editor of the Canada Farmer*," and all orders for the paper are to be sent to GEORGE BROWN,
Proprietor and Publisher.