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The Field.

Hints about Hay-making.

The season for making hay is close at hand, and a few hints on various topics connected with this part of farm work may not be unacceptable to our readers.

TIME OF CUTTING.

Many good reasons may be urged in favour of cutting grass early. By so doing, hay of more nutritious quality is obtained. Ripe hay, as it is called, is far less feeding in its nature than that cut sooner. Why is it that hay will not fatten stock as grass will? Because of the loss of the nutritious elements of the plant. But if the grass is cut and cured at the stage during which it contains fattening properties in the highest degree, these may to a very large extent be retained.

“Early in its growth, grass is watery; as it approaches blossoming, the amount of sweet nourishing juice increases; after blossoming, and as the seed ripens, the sugar diminishes, and the hard woody fibre increases. The best time, therefore, generally, is to cut within a few days after the principal portion of the crop has appeared in flower. For milch cows it should be cut a little earlier than for working oxen and horses. Hard stemmed grasses, as orchard grass and timothy, should be cut earlier than softer sorts.”

All who have had experience with well-cured, early-cut hay, testify to its superior value. The cows give more milk when fed on it, the young stock grow more rapidly, and the fat cattle require fewer turnips, and a smaller allowance of oil-cake. We are persuaded that many farmers commit a grand mistake in deferring their hay-making too long. Not only better hay, but more of it, may be obtained by early cutting. By not allowing the grass plants to mature their seed, the sward retains a larger share of its vitality. Maturing seed is an exhausting process, and when this is avoided, the sward, if the weather be favourable, and the land in good condition, will soon send up a fresh growth, from which a second cutting may be had late in the season. Especially is it needful for those to begin mowing early who have to depend on the now old-fashioned scythe. Failing to commence until the grass is mature, they are unable to get through until some of the crop is dead ripe, and then the hay is little better than straw.

EXPENSE OF MAKING HAY.

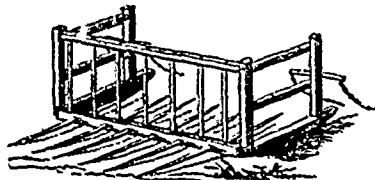
On this subject we find the following remarks in the *Country Gentleman*:—

“When meadows were cut by scythes, and raked by hand-rakes, the cost of securing a crop was computed to be one-half its value. Now, by the use of mowing machines, horse-rakes, horse-forks, &c., it need not be one-fourth, as the following estimate for cutting fifty acres will show:—

Interest on \$100, cost of Mowing Machine.	\$7.00
Wear and tear, annually, say.....	3.00
Team and man, 8 days, 6 acres per day (a	

low estimate),.....	\$10.00
Cost of cutting 50 acres.....	\$20.00
Raking, horse and man, 20 acres a day.....	5.00
Drawing, if 2 tons per acre, 2 men and 1 team; with horse-fork, 8 tons daily, \$3 per day, 12 days..	36.00
Contingencies, rain, &c., say.....	7.00

Cost of securing 100 tons.. \$78.00
Or, 78 cents per ton. It will be observed, however, that the team of the farmer stands idle much of the time in harvest, and that the actual cost, as compared with the old way, would therefore be really less.”



THE HAY SWEEP.

This is a labour-saving implement which any farmer may construct for himself, and although but little known, it is capable, under favourable circumstances of greatly lightening the toil of hay making. Where the hay is stacked in the fields, or put in a barn close to the meadow, the hay-sweep may be used to great advantage. It is estimated that used in connexion with the horse-fork, two or three men and a couple of boys, with the help of three horses, can draw and stow away thirty tons per day with ease. The accompanying cuts exhibit the construction and operation of this implement. The upper cut shows the sweep ready for use, the lower cut shows it in active business.



We extract the following description of this implement from *Tucker's Annual Register*:—

“It is essentially a large, stout, coarse rake, with teeth projecting both ways, like those of a common revolver; a horse is attached to each end, and a boy rides each horse. A horse passes along each side of the winrow, and they thus drag this rake after them scooping up the hay as they go. When 500 pounds or so are collected, they draw it at once to the stack or barn, and the horses turning about at each end,

causing the gates to make half a circle, draw the teeth backwards from the heap of hay, and go empty for another load—the teeth on opposite sides being thus used alternately. To pitch easily, the back of each load must be left so as to be pitched first.

“The dimensions should be about as follows:—Main scantling below, 4 by 5 inches, 10 feet long; the one above it, same length, 3 by 4 inches; these are three feet apart, connected by 7 upright bars, 1 by 2 inches, and 3 feet long. The teeth are flat 1½ by 4 inches, 5 feet long, or projecting 2½ feet each way—they are made tapering to the ends, so as to run easily under the winrow. A gate, swinging half way round on very stout hinges, is attached to each end of this rake, and to these gates the horses are attached. They consist each of two pieces of scantling, 3 inches square and 3 feet long, united by two bars of wood 1 by 2 inches, and a third at the bottom 3 inches square, and tapering upwards like a sled-runner—these runners project a few inches beyond the gate. The whiffletrees, are fastened a little above the middle of the gate, and should be raised or lowered so as to be exactly adjusted. It may be made for \$5.

“In using this machine, not a moment is lost in loading or unloading. No person is needed in attendance, except the two small boys that ride the horses. If the horses walk three miles an hour, and travel a quarter of a mile for each load, they will draw 12 loads, or three tons an hour, or 30 tons in 10 hours, leaving the men wholly occupied in raising the hay from the ground when deposited, by means of another horse with the pitchfork.

“It will be obvious that this rapid mode of securing hay will enable the farmer to elude showers and storms, which might otherwise prove a great damage.”

HAY CAPS.

These are laughed at by many as part and parcel of an effeminate parlour style of farming, but subjected to the test of experience, they commend themselves as well worthy of adoption by all judicious enterprising tillers of the soil. Some are incredulous about them and think they will get wet through like the cotton shirt on a labourer's back. On the contrary, they will shed rain like a cotton umbrella, or like the covering of a tent. It is said by those who have tried this expedient, that coarse clover will remain safe through a week's rain with such protection. And while preventing rain from coming in, cotton caps will permit the steam from the hay to go out. Mr. Emerson, an experienced New Hampshire farmer, says he has used hay caps for upwards of fifteen years, and recommends them to all his friends and neighbours. In reference to the time consumed by putting them on—an objection urged by many—he says they save time, inasmuch as they render less particularly needful in trimming and shaping the cocks. And while he has often had uncapped cocks of hay tipped over, or the tops blown off by gusts of wind, he never had such accidents occur when they were properly capped. Another

reliable American agriculturist, writing to the *New England Farmer*, says, "Hay-caps do pay, and no mistake, and, on the whole, a farmer of moderate means who cuts much coarse hay cannot afford to be without some thirty or forty of them." For the guidance of such as are disposed to give hay-caps a trial, we copy the following directions from the *Country Gentleman*:—"Take four yards of yard-wide cotton sheeting; sew it together so as to make two yards square, hem the rough edges; turn up each corner two or three inches and sew it strongly. Tie in a short strong twine to form a loop, and you have a hay-cap ready for use. Four sharp wooden pins of hard wood, half an inch in diameter, eighteen inches long, to be thrust upwards into the hay, at the bottom of the cock complete the preparation."

HOW TO SHARPEN A SCYTHE.

"Mower" writes to the *American Agriculturist*.—"To properly grind and whet a scythe requires some little practical skill, in the attainment of which the beginner may be assisted by a few hints. The cutting edge of a scythe or similar instrument, when examined by a microscope, shows numerous fine projecting points or a series of minute wedges which are to be driven into the substance operated on, to separate the adjoining parts. In order that they may enter the more readily, these points should incline in the direction of the stroke given with the blade of the instrument. In cutting with the scythe, the edge strikes the grass at an angle of about forty-five degrees, and hence the grinding should be done so as to have the points set in that direction to the blade. This is done by keeping the blade firmly upon the stone, with the point drawn toward the body of the holder, at the above mentioned angle with the edge of the stone. Commence to grind at the heel and move it steadily along as the work progresses, until the point is reached, then grind the other side in the same manner. Never rub the scythe back and forth upon the stone as though endeavouring to whet it. The revolution of the stone will wear away the steel much better than rubbing it in this manner, by which the edge is likely to be made rounded, and to be set irregularly. It is preferable to hold the scythe so that the stone will revolve toward the edge. In this way the holder can see when the edge is reached, and the particles ground off are carried away clean. In the opposite method of grinding there is danger of making a "feather" edge which will readily crumble off, and leave the scythe almost or quite as dull as before. The blade should be ground equally on both sides. In whetting the scythe, lay the rifle or whetstone flat against the side of the blade, and give a light quick stroke downward and forward in the direction of the edge, so that the scratches it makes shall keep the points set in the same direction as was given them by grinding. By following these simple suggestions, a scythe may be made to hold its edge twice as long as when the rifle or whetstone is drawn along the edge almost at random. A few strokes carefully taken will enable the workman to keep the proper direction and whet rapidly."

CUTTING AND CURING CLOVER. Clover should be cut immediately after blossoming and before the seed is formed. It should be cured in such a manner as to lose as little of its foliage as possible and therefore cannot be treated exactly as the natural grasses are. It should not be long exposed to the scorching sun, but after being wilted and partially dried, it should be forked up into cocks and left to cure in this position. The fourth or fifth day, when the weather is fair and warm, open and air it an hour or two, and it will then be fit to cart to the barn. Clover cured in this way without loss of its foliage, is better for milch cows and for sheep than any other hay. It may also be fed to horses that are not hard worked, or to young stock, but it is most valuable for cows in milk. For other farm stock it is worth from two thirds to three-fourths as much as the best hay.—*Manual of Agriculture.*

The Graminae or Grasses.

In point of order, value, and usefulness to man the natural order graminae, or grasses, stand first in the vegetable world—furnishing as they do the staff of life to the human race. The principle of these are wheat, barley, oats, rye, rice, maize, millet, &c. of which there are numerous species and varieties—the sources from which, in every quarter of the world, mankind derives his chief means of existence. It is, however, of the less noble order of grasses we now intend to treat. As wheat, oats, and barley are of the utmost importance as the food of man, so is the lesser order of grasses the principal maintenance of herbivorous animals. It is, then, of the greatest importance that the agriculturist should be made acquainted with the different species and varieties of grasses, whether natural to his pastures or introductions to the same, so that he may be able to choose and cultivate those which are most conducive to the well-being of the animals he is rearing for the food of his fellow-creatures. That our grass lands are as susceptible of improvements as our tillage land, by suitable management and careful selection of seeds, must, in these times of dear beef and mutton, be apparent to every reflecting mind.

In selecting the different species and varieties of grasses for laying down meadows and pastures, the first and most important object to be kept in mind is to obtain such as yield the greatest bulk of good hay, and to mix those which may be cut at the same time; for it must ever be remembered that a greater quantity of good food can be procured by a variety of grasses on a given space than can be procured by any one sort alone. But the great difficulty the grazing farmer has to contend with is the deterioration of his meadows and pastures. This takes place from the better and more tender grasses dying out, and giving place to those of a coarser nature. This, in very many instances with which we are acquainted, is greatly produced by neglecting to keep the land well drained. The finer and most nutritious grasses thrive best in moist rather than wet soils; hence it is of the utmost importance to keep the land free from surface water by sufficient drains; and in many cases it is advisable on flat surfaces to lay the land in ridges at right angles with the drains. All meadows and pastures should be harrowed annually in autumn, to destroy the various species of mosses and other weeds; and harrowing also covers the seeds that may have fallen, or those which may have been sown. They should also be annually top-dressed in autumn with a mixture of well-decomposed cow-dung, soil, and lime; and in spring should have a sowing of guano, or the liquid manure from the yard, and be well bush-harrowed, and then rolled. This mode of procedure upon our meadows and pastures is as necessary as to manure for turnips, potatoes, &c. When the means above described fail to produce a good crop of hay or pasture, it is then high time to set the plough at work, and have a course of green crops, and then the field may be relaid.

There is a diversity of opinion existing relative to the proper time of sowing grass seeds. Some prefer autumn and some spring. But autumn appears the most proper season for this operation. Nature teaches us this lesson—she commits all her seeds to the earth as soon as ripe. Therefore, we advise all grass seeds to be sown in August or September when necessary, and especially on strong, wet, and heavy soils, and well tilled in spring when the land is in good order; for should a dry spring set in, the young plants will suffer much from droughts and winds. Among the many uses to which the roller can be applied, none is more valuable than to roll all grass land, after it has been well bush-harrowed in spring, as the plants are liable to suffer from various causes in this our uncertain climate. Premature decay or death is thus brought on, which the yearly use of the roller at this season would in a great measure prevent.

To manage pasture lands advantageously, they should be well fenced in small fields—i.e., according to the size of the farm and the quantity of stock kept. It is folly to turn in all sorts of cattle promiscuously. Milch cows, fattening beasts, and oxen should have the first feeding; sheep and horses afterwards. When the field is fed off, it should be shut up, and the dung which has been dropped should be scattered, and bush-harrowed and rolled. All coarse herbage which has been rejected by the various animals should previously be mown and carried off; but this operation will not be necessary where the fields have been properly laid down. The second and third fields should be treated in the same manner. There is a considerable saving by allowing all grazing animals to take their turn, as all the herbage produced will be consumed, much of which would otherwise be trodden under foot.

The Pea-vine and Other Varieties of Clover.

The pea-vine or northern clover is a different variety from what is here known as western clover, and the more diminutive or southern variety.

A few years since I procured from a brother of mine, residing in Illinois, a bushel of the real Simon-pure pea-vine clover seed, a part of which I sowed, and the balance was distributed among a few other farmers. My seed was sown in the spring—a part with spring wheat and a part with oats. The next season I had a prodigious growth of forage—estimated at three tons per acre. It was mown when in the blossom, cured in cock, and was freely eaten by horses, cattle and sheep. They, however, if kept upon it for several days in succession, would reject the large stem, causing some waste. To make the most of such coarse forage it should be run through the hay cutter. This variety of clover, tree-like, sends off from each stem numerous branches or limbs, each producing one or more heads, which I think is not the case with other kinds of clover. It ripens some weeks later than the western, and may be safely left till timothy or herd-grass is fit to cut. There was not much diminution in the amount of clover the third season it was cut. It retains its hold in the ground much longer than any of the other varieties cultivated here. It has a much longer and larger root than the western, giving a much larger yield of forage; therefore it is probably the better kind "for ploughing under as a grass crop to enrich the land than the smaller kinds of clover." The only difficulty would be in turning under such a crop as mine was. I saved samples which were over five feet in length, and now have some over four and a half feet high tied to a willow stick. I send you a few inches of one of the big stalks, by which you can judge something of its rankness of growth.

The variety of clover preferred by our farmers is known as western. This, on good land, grows sufficiently large for forage and in favourable seasons gives two good crops—the first for fodder, the second for fodder or seed. The large variety gives but a small after-growth; therefore if seed is wanted, it must be obtained from the first crop.

The southern variety of clover is short and fine, being a capital winter fodder for sheep, milch cows and young cattle; but the yield is light, and our farmers will not sow it, unless they get cheated into it, as is sometimes the case when they buy it, supposing it to be the western. The next season, however, tells the true story, by the short clover and tall scolding of the humbugged farmer.

I have experimented somewhat with the Luzerne or French clover, but it takes some three years before the plants get their full growth, and during the time the June and other tough-rooted grasses overpower the Luzerne and it becomes nearly exterminated. The only way it can be successfully grown here is to sow it on land that has been fallowed long enough to cause all seeds of grasses, &c., to be destroyed, and then sow the Luzerne seed and manure with super-phosphate, guano, or other manures containing no weed or grass seeds. For soiling and winter fodder it would prove of the best kinds of plants, if it could be grown entirely separate from other plants that have a tendency to over-run the Luzerne.

I have also experimented with the Alsike or Swedish clover. This seems to be a hybrid, between the common red and white clover or honeysuckle.—Several years ago I sowed a few rods of land with this kind of seed. I sowed it too thin, thereby giving room for the growth of other grasses. However, for about three years it did well, but eventually the other grasses nearly rooted it out. The stems are small, yielding a large amount of branches, leaves and blossoms, producing a large amount of honey for bees; and for winter feed for sheep, I think no better forage plant can be grown. This kind of clover has been largely grown by some Canadian farmers, and highly spoken of by them.

I have also grown a yellow variety of clover, quite different from any of the foregoing, but not in quantity sufficient to judge correctly of its merits.—L. V. BARTLETT, in *Genesee Farmer*.

NO WEEDS TO PULL.—Stir the ground often, and they will never get big enough to pull. A loose top-soil can be stirred up a half-dozen times with a hoe in the time required to go over it once in the pulling process. The growth of all plants will be greatly promoted by stirring the soil often.

Buckwheat as a Renovator of the Soil.

To the Editor of THE CANADA FARMER

SIR,—An amusing controversy has been waging in THE CANADA FARMER almost since its commencement, on the merits of buckwheat straw as an article of fodder, which has been very barren of practical results. And why? Simply because no animal will eat buckwheat straw except by dint of sheer starvation; and that any sheep, ox or horse confined to it will starve, I am well convinced, because there is *nothing in it!* The discussion brings a broad grin on the face of every experienced farmer who reads it, and they are many; for THE FARMER is growing in favour with us every day. But my present object lies another way, as I think the true merits of buckwheat have not been touched in this controversy.

A legal gentleman of high standing in the profession, who lives out West here, read THE FARMER, and was seized with the agricultural mania on the spot. I heard him in the office of the Clerk of the Peace making most anxious enquiries respecting the relative merits of buckwheat and clover as fertilizers of over-cropped or unproductive lands, bemuddling the brains of the aforesaid functionary, the deputy sheriff, and a bailiff thereby. Well, with your permission, Mr. Editor, I would like to give the learned barrister the benefit of my experience in the matter, trusting that he will reciprocate the courtesy with the farmers when occasion requires.

In the first place, the one cannot be considered as a substitute for the other, their actions on the soil being so entirely different. Clover, like buckwheat, being a broad-leaved, strong-lunged plant (for plants have lungs), derives a great part of its sustenance from the atmosphere, but unlike buckwheat, its roots perforate the soil in every direction, penetrating to a great depth in search of ingredients that have become exhausted in the upper soil, forming a system of underdrainage on a small scale, and bringing about a change in the structure of the soil which is well understood by practical farmers. But it is often very difficult to get clover to "take" on over-cropped or on bare, stiff clay soils, where the vegetable mould has become absorbed. Here buckwheat may be introduced with the best results. Plough deep, cultivate well, and sow pretty thick; and when just beginning to fill, plough down for fall wheat. Seed down with clover in the spring, when the last shower of snow is on the ground. But the great merit of buckwheat lies in its adaptability for "bringing in" rough, unproductive land, which, on account of stumps, or for some other reason, cannot be summer fallowed. Many farms have patches beset with wire grass, Indian grass, blue grass, and a score of others, matting and felting the sod so that nothing else will grow. You may plough it down, but it grows that way as well as before, perhaps better. Sow such a field with buckwheat, and if the season be favourable—that is, moist,—every vegetable, every root and fibre, will be as completely killed as if the whole had been laid under water, and thus all vegetable matter will be in a proper state to become nutriment for another crop. In thus exhibiting the advantages resulting from an occasional crop of buckwheat, I have said nothing of the grain, which is considered by many as a wholesome article of food for human beings, and fully equal to barley for horses.

BEN. BARECOLT.

Plympton, June 13, 1864.

Vitality of Certain Seeds.

To the Editor of THE CANADA FARMER:

SIR,—I wish to offer one or two observations on the vitality of certain seeds, which will be found to clash somewhat with the views expressed in an article which appears in a recent issue of your paper, headed "Seeds and how to sow them." It is there stated that "beans, peas, carrots and parsnips lose vitality after one year." Now, I agree with the writer in the main, but I will give you my experience in regard to *beans and peas*: These I have frequently sown three and four years old, and found them to vegetate with scarcely any loss. But I will relate to you one instance, although it may appear almost incredible, in which I planted peas and beans three times that age and which proved to have lost but little of their vegetative powers.

Some 15 or 16 years ago, I ordered from the Messrs. Lyman, of Montreal, some small parcels of garden peas, containing about half a pint each, embracing several varieties, for the purpose of retailing in my shop. My order was intended for one dozen of those parcels, but owing possibly to the order not being sufficiently explicit, they sent me 12 dozen. In the locality where I then resided there was not at that time much demand for garden seeds, and a large proportion of these remained on hand for two or three years, and after this lapse of time were considered useless, and were stowed away in an old lumber room over my shop. Eleven years after I procured them, when removing to Lindsay, I came across the box with these parcels, and took out some six or seven, all of different varieties, and sowed them in my garden here, as also about half a pint of round speckled beans, labelled "Agricultural beans," and which I had from the same house, and which were 8 years old. The result was, that nearly every pea and bean vegetated and produced an excellent yield, with the exception of one variety of peas, the dwarf blue imperial, of which not a single one came up. The names of the other varieties of peas that did so well I do not recollect sufficiently to particularize.

Yours truly,

JOHN KNOWLSON.

Lindsay.
P.S.—I may remark, that those peas were put up in strong brown paper bags of fine close texture, and pasted so as to exclude the air, which possibly had something to do with the preservation of their vitality.

Canada Thistles and Root Crops, &c.

To the Editor of THE CANADA FARMER.

SIR—In your last number, "A Practical Farmer" wants to know how Canada thistles, as he calls them, can be kept down by cultivating root crops. Let him cultivate his root crops properly, and keep them clean, and not allow thistles to grow on any part of his farm, and induce his neighbours to do the same, so as not to allow their thistle-seed to blow over his farm and deposit on his clean, well-cultivated root crops, and in a few years he will not have cause to complain much of thistles. It is well known that thistle-seed will travel for many miles with a high wind, and is sure to drop on a clean, well-cultivated field. The consequence is, that the next year there will be an abundant crop.

Thistles should be cut in July, before they go to seed. At that time the stem is hollow, and may easily be destroyed.

My mode of cultivating root crops, Indian corn and pease, in drills—30 inches between the drills—is to drill on the top of the ridge. In a short time, when any weeds begin to make their appearance, I take a Wilkes' half-moon iron harrow, which covers two rows; it will clean out the young weeds. When the crop is further advanced I use the cultivator. I then take a subsoiler with three feet, and a pair of horses, and stir the ground from 12 to 14 inches deep.

To eradicate couch, use Coleman's patent English cultivator to bring the couch to the surface; then take Cambridge's chain harrow, it will rub out the earth and collect the couch in heaps, so that it can be burnt. A few times will clean the seed.

ANOTHER PRACTICAL FARMER.

THE POTATO DISEASE.—M. Pousard, President of the Agricultural Society of Chalons, has addressed a paper to that body, in which he states that he has discovered a remedy for the potato disease. The secret consists in planting them after the first of June, instead of in April. By this plan, they escape the frosts of April, and the leaf is not exposed to the hot sun of July. M. Pousard is of opinion that the alternate frost and heat corrupt the root by their opposing influence. It appears that he has continued his experiments for several years, and that his potatoes are of a fine size and perfectly sound. M. Pousard is able likewise by this plan to grow two crops on the same ground within the year.

DWARF BROOM CORN.—"I raise annually enough to make 50 to 100 brooms. A few years ago I got a package of dwarf broom corn seed, and since then I have raised both kinds, but think more of the dwarf every year. I do not intend to raise the tall kind any more, for the dwarf makes much the best brooms. The brush is about three inches longer on an average; is much firmer; there are no crooked heads and it yields more on the ground. It does best to pull off the suckers just before it heads out. If left on they will grow a foot or more higher than the main stalk; their heads are poor, and they detract from and injure the main brush."—D. R., in *Rural American*.

TO MAKE A FIELD ROLLER.—I constructed a roller in the following way:—Four feet and four inches in diameter; drew a circle of four feet on a smooth floor; drew a line through the centre one way and crossed it by another directly perpendicular to it; laid a piece of half-inch board a foot wide on the circle, one-quarter of it, and cut out of it a pattern to make the roller, which was cut from two-inch plank, made double at each end, and firmly pinned together; arms were framed to those heads for the gudgeons of the centre. I covered it with spruce-plank three inches wide, two inches thick, and five and one-half feet long, spiked to the heads; it was then hooped with stout old tierce hoops, made to its size. The gudgeons were iron pins passing through the centre of the arms with a head outside, and fastened in with keys through the inside. The side pieces were three by four inch joist, about five feet long. Immediately in front of the roller, a deep piece was framed into these sides, and on the under side, four inches in front of that was pinned another cross piece, and on the top of them, another cross piece a foot or more from the first mentioned, this forming a place into which any old sled spear and roll could be inserted and taken out with a moment's labor, making the roller occupy much less room when stowed away. A roller made of hard wood would be harder and better than if made of soft wood.—*Cor. N. H. Journal of Agriculture.*

RYE.—The importance of this crop seems to be but little understood by many farmers. We think if its value as a crop was better known, its cultivation would be general—that every farmer would have his rye field just as much as his field of wheat, corn, oats or potatoes. It is valuable as food, both for man and beast. It makes excellent feed for stock, and is second to wheat only (and scarcely that) in its bread-making qualities. Von Thier says: This substance seems to facilitate digestion, and has a singularly strengthening, refreshing, and beneficial effect on the animal frame." Rye is subject to fewer casualties than any other crop, though it is sometimes affected by rust. The straw is bright and strong, which renders it better than wheat straw, both for feeding out in the winter and litter for horses and cattle. On farms stocked with cattle and sheep—especially the latter—the great value of this crop does not lie in the grain and straw, so much as in the great amount of pasturage it affords at a season of the year when all other kinds of pasturage fail. It makes excellent feed in the fall, long after grass becomes entirely worthless; again in the spring, so soon as the snow is off the ground, it makes good pasturage, and may be used as such until the grass is large enough to make good feed; nor does this fall and spring feeding injure the crop for grain. Rye is usually ready to cut before winter wheat; hence, out of the way before the hurrying season of harvest. The soil best adapted to rye is a rich sandy loam though no one of the cereal grains will adapt itself to a greater variety of soils. It will do well on a rich loamy soil—not at all suited to wheat—its stronger stem enabling it to sustain itself under a luxuriant growth. Then again, it will make a better return on a light sandy soil than corn, or any other crop.—*É.*

BARN-YARD MANURE.—The general practice of farmers throughout the country, of pitching the manure from their stables and cow sheds into the open barnyard, exposed to the rains, which wash more or less of its soluble inorganic constituents away, besides subjecting it to the rays of the sun, causing an immense loss by evaporation, and also allowing the organic gases, carbonic acid, ammonia, etc., which are generated during decomposition, or fermentation, to escape, is a most negligent and careless way of doing things, and opposed to all true economy, for he loses the most valuable part of his manures. Near my friend's barn is a long shed, constructed of common boards. The manure from the stable and cow-sheds is removed to this shed every morning. When five or six inches in thickness, a layer of pond mud or muck is added to the mass. This prevents the escape of any gases that may be liberated during decomposition, by absorbing and retaining them. The whole heap consists of alternate layers of barnyard manure and pond mud. The stalls are so constructed that the liquid drainage passes into a deep recess made on purpose, along side of the manure heap, and from there it is thrown over the compost once, and sometimes twice a week. In case the liquids from the stable and sheds are insufficient, the requisite quantity is added from large cistern near the shed. The liquid prevents all fire-fanging or burning of the manure, causing the labour of forking over to be entirely dispensed with; this alone is quite an item saved. During my visit in the spring, I had a chance to witness the appearance of the manure as it was carted out from the shed, and it looked to me more like rotten cheese than barn-yard manure. Every particle seemed to have thoroughly rotted, and not a vestige of straw could be discerned in the entire heap.—*Country Gentleman.*

Hall's Agricultural Implement Factory,

It is with a very faithful and spirited engraving of an establishment in which many of them have come to feel considerable interest, from their purchase and use of implements manufactured at it. Having recently visited this establishment for ourselves, we propose to give a brief account of our observations and impressions. We confess to some surprise at finding in the quiet, unpretending town of Oshawa so large a concern, knowing, as we did, that all over the country there are factories of like description some of which do a large amount of business. It gives one an exalted and encouraging idea of the agricultural growth and resources of Canada to find, in addition to the numerous smaller shops of the same kind, a mammoth establishment like this, which, though constantly enlarging its dimensions, is always too strait for the work requisite to supply the ever-increasing demand. Here are a machine shop, three stories high in front, and two and a half stories in the rear, measuring 266 feet in length by 40 feet in width; a foundry 110 by 40 feet; a smithy 60 by 30 feet,

containing 12 forges; together with office, warehouses, sheds, and last but not least, a spacious lumber kiln. Most of these structures are built of white brick, and present a very neat and respectable appearance.

If the exterior of these works is fitted to excite surprise, the interior is still more calculated to do so. We give up in despair the attempt to describe the varied and beautiful machinery by which almost every manufacturing process is brought about. Suffice it to say, that in the iron-fishing department, planing, turning, stamping, cutting and boring machines work with a precision that tempts you to suspect them of being endowed with intelligence;

while in the wood finishing department, in like manner, the rough sawing or plank is smoothed, shaped, bored, morticed, tenoned with the most marvellous rapidity and unerring accuracy. The heap of rough castings, and the pile of rough lumber, are quickly transformed as if by magic into implements of such beauty and finish, that they seem to invite the workman to release them from inactivity and give their capabilities full scope. Something more than an attractive appearance, however, is necessary in the farmer's weapons of war, and nothing gratified us more than the evident pains taken to have every thing

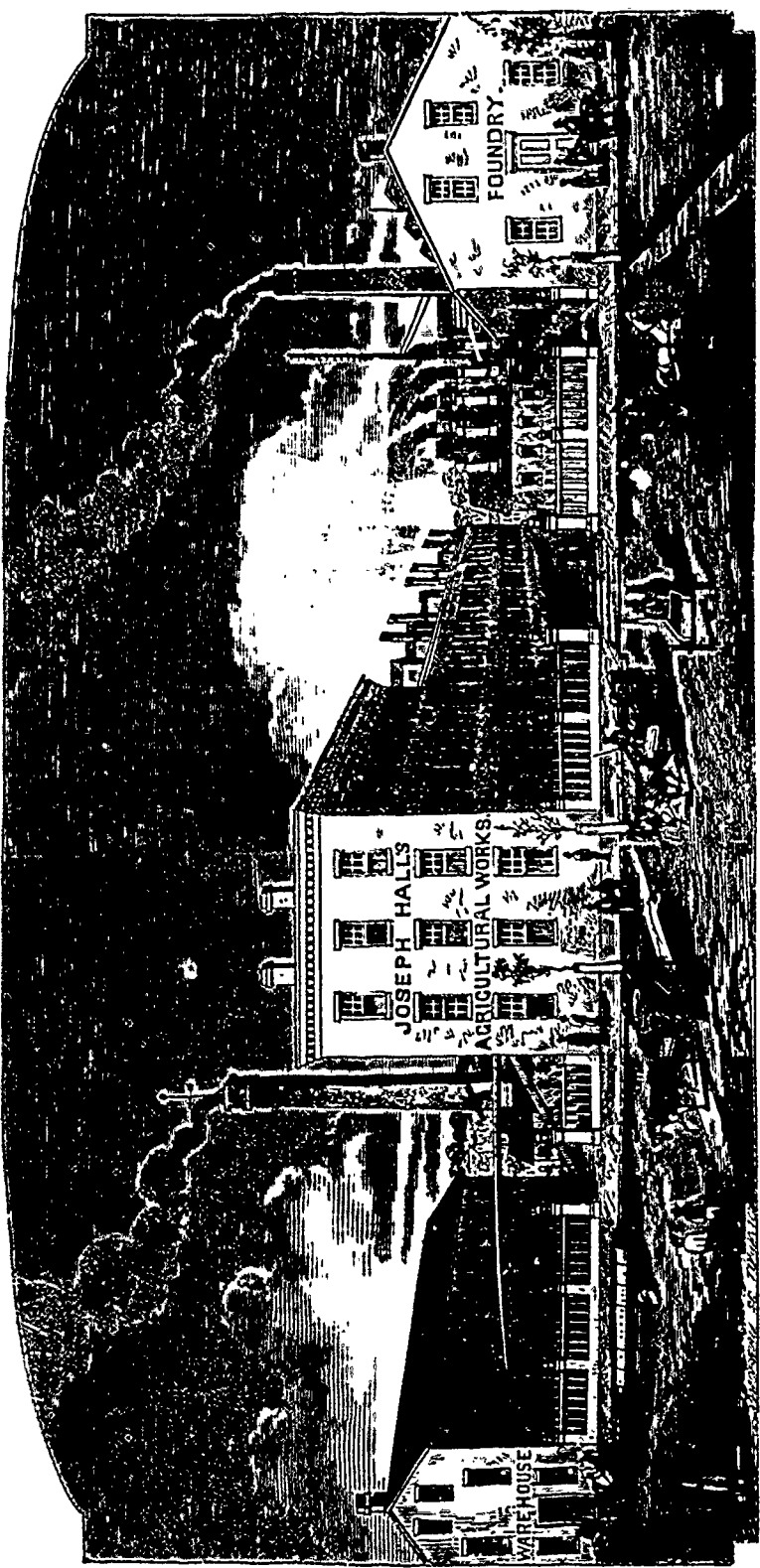
imprinted for the threshing machine teeth, and the steel for mould-boards, cutter bars, &c., is made expressly for this establishment in Sheffield. The white ash used in the wooden parts of the various implements in which a high degree of toughness is needed, is brought from Morpeth, in the county of Kent, and it would be difficult to find ash of better fibre. The utmost care is taken to have all the lumber thoroughly seasoned. After long exposure to sun and air, it is all passed through the kiln above-mentioned, and subjected to a kind and degree of heat such as renders further shrinkage absolutely impossible.

Steel is used in various parts of the implements, such as the cutter bars, pitman rods, &c.; in short, wherever iron might, by bending, throw things out of order. Particular attention is paid to all bearing surfaces, so as to protect the machinery and lessen friction as much as possible. Journals are made to play in double boxes which are lined with Rabbit metal, an amalgam of tin and antimony, nearly equal to brass for smoothness and durability. We examined many of these details with the utmost care, and in view of the established axiom that the strength of a whole is just that of its several parts, we cannot

but think that before purchasing costly tools, farmers would do well to satisfy themselves that in quality of material, precautions against weakness and injury, and like matters, as well as in style of finish, the article they are buying has been conscientiously and faithfully made. So far as we could judge, it seems to be an established principle with Mr. Hall to do this. There are manufactured at these works reapers and mowers of various patterns, horse-powers of several kinds of threshing machines, clover m'ls and steel mould-board ploughs. Besides these, all kinds of mill and job castings and machinery are made to order. A large amount of business of this description is done constantly. At the time of our visit, the main shaft and other requisites for a flour mill, besides a number of miscellaneous orders, were being prepared for delivery.

It is time now to speak a little more particularly in reference to some of the implements turned out by this establishment. Our space will not admit of our fully noticing all; we must therefore make a selection. In the first place, a few words as to the reapers and mowers. After a thorough testing of the various styles of reapers and mowers, single and combined, Mr. Hall unhesitatingly pronounced "Hall's, Ohio Mower and Reaper

Combined" as decidedly the best machine of its class, and accordingly manufactures more of these by far than of any other kind. Out of 700 machines which he is turning out the present season, upwards of 500 are Hall's Ohio. The remainder are Hubbard's, Brinkhoff's, and the Cayuga Chief. Hall's Ohio is a combined machine, and while it is excelled by none as a mower, it stands unrivalled as a reaper. Most of the combined machines have proved unsatisfactory either as reapers or mowers. But this is equally effective in the meadow and in the grain-field. This is chiefly owing to the fact that the mowing and



used in these shops of the very best material possible. Mr. Hall, we understand, has the reputation in Montreal of being the most particular buyer of stock in that market. Nothing could be more creditable to him as a manufacturer than such a fact as this. What avails perfection of mechanism and beauty of finish, if, after all, the raw material is of inferior quality? We were glad to find that such brands of wrought iron as "Glasgow," "Elephant," "Banks' and Bagwell's," and in cast iron, the "Three Rivers," pig and car wheels, "Saulsbury," "Hemite," &c., are used: while the celebrated "Law Moor" iron is

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reaping attachments are entirely independent of each other. Notwithstanding this, the change from the reaper to the mower, or vice versa, is effected in a few minutes, it being only necessary to loosen a few bolts, and substitute the one attachment for the other. One great peculiarity of this machine is the position of the Cutter-bar, or Finger-bar. It is hung at the hind end of the frame, back at the centre of the drive-wheels about twenty-two inches. The advantages of this position Mr. Hall thus sets forth:—

1st. It gives the driver the fullest opportunity to see obstructions before the guards or knives strike them.

2nd. It avoids the danger of a fractious or frightened horse backing his heels against the guards or knives.

3rd. By reason of the upward direction of the draft and the sled-shaped bottom of the drag bar, it rises better out of deep furrows, ditches, and over any hills and logs.

4th. It avoids the necessity of a little truck wheel to carry it, which does not run so steady, nor goes over the cut grass so well as a slide, nor turn a short corner so well.

5th. It does not draw down upon the horses' necks at all, but is carried by the drive-wheels when its weight is used for power.

6th. It is the only position to make a good reaper.

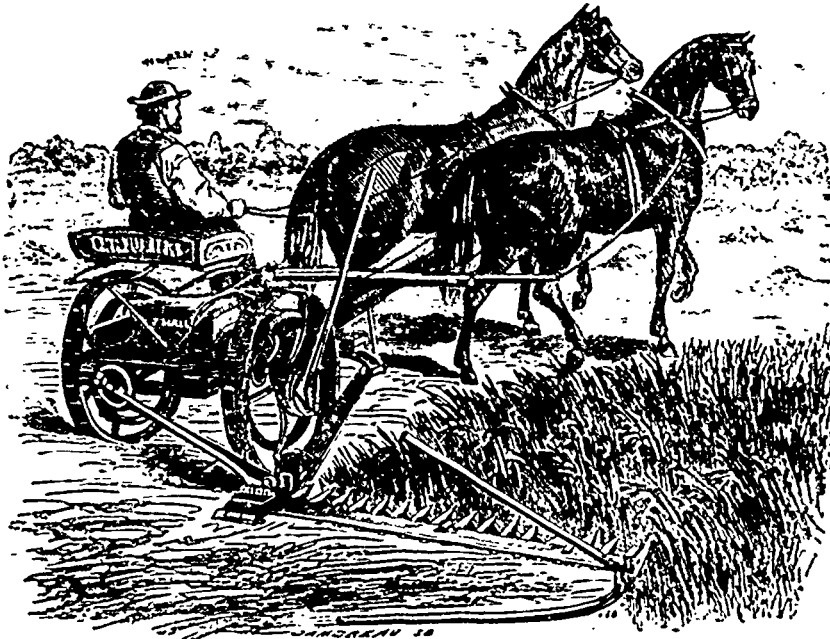
The cutter-bar in this machine is so attached to the frame by hinge-joints, that it is perfectly controlled by a lever in the hand of the driver when in his seat, so that he can raise it over stones, stumps, sticks, or other obstructions, while in motion. He can also set it by a screw to cut high or low, and can easily fold it up to pass through narrow gates, or travel upon the road. By referring to the cut accompanying Mr.

full-sized mower. To those who, for any reason, require or prefer a mower alone, we would strongly recommend the "Ohio Junior," also manufactured at these works. It strikes us as a model of simplicity, lightness and cheapness. We present herewith a cut of this beautiful little machine. Its draught is only 170 lbs., and its cash price is \$85. It will do nearly as much work in a day as the full-sized mow-

and separate clover seed clean for market, direct from the straw, by once going through.

In conclusion, we must add a word or two respecting Mr. Hall's Threshing Machines. They have more than once been adverted to in these columns, by correspondents who have tried them, and who give them the highest praise. Some valuable improvements have been introduced this season, of which the manufacturer speaks in the following manner, in his illustrated catalogue, which all who desire further information about any of these implements can obtain on application

"They consist in giving greater length to the extra belt, thereby preventing the possibility of an grain being thrown over even with the utmost crowding. A deck is also added to the machine, so that the dust is confined until it leaves the barn thus adding much to the comfort of threshing, as well as protecting the machine when exposed to a storm. I have also enlarged the size of my fanning mill and shoe giving the machine greatly increased separating capacity, and enabling it to separate the grain thoroughly as fast as it can be passed through the cylinder. As an evidence of the capacity of my improved machines, I would mention that the purchaser of the only one of this style manufactured by me last season, and upon which I received the first premium

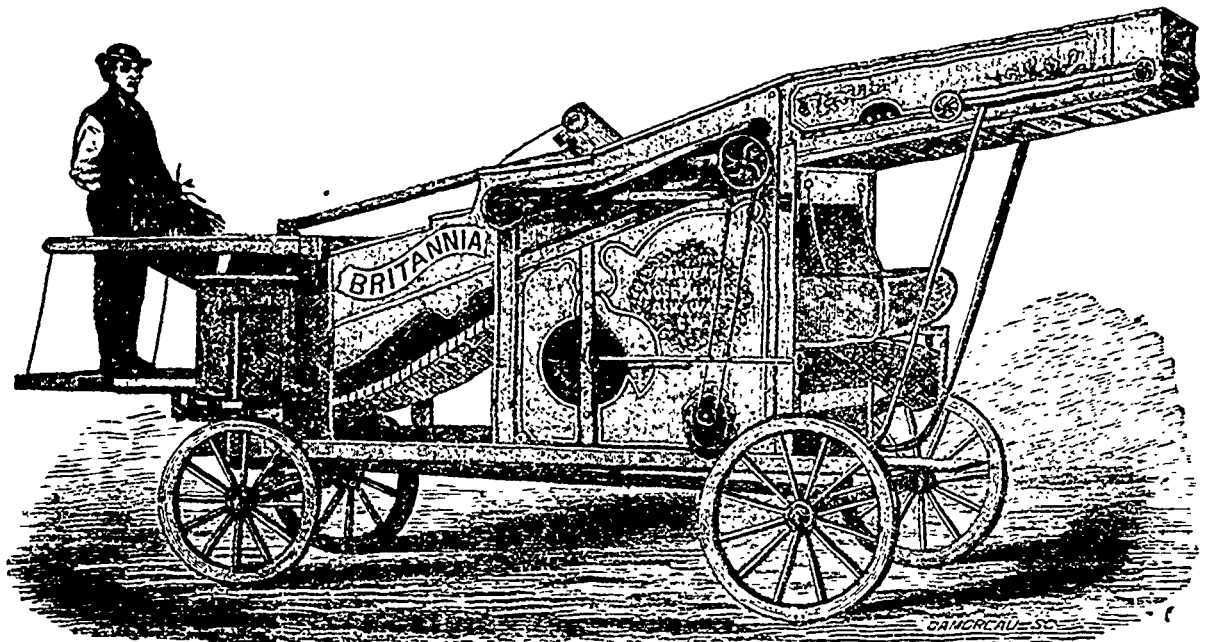


ers, from its lightness and the speed at which it may be wrought. Though made for two horses, it is quite capable of being worked by one able horse.

In reference to horse-powers, it may be stated that Mr. Hall manufactures five—the "Improved Pitts," "Planet," "Pelton," "Hall," and "Woodbury" powers. He considers the "Improved Pitts" the best, as it is strong, durable, simple, not liable to get

at the Provincial Exhibition held at Kingston, recently informed me that he had threshed three hundred bushels of spring wheat with it in three consecutive hours."

The subjoined cut exhibits the Improved Separator, and it would seem to be the *ne plus ultra* of threshing machines. We cannot close this notice of an establishment which is alike creditable to the proprietor and to Canada, without advertising to the

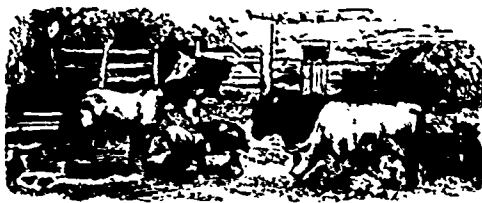


Hall's advertisement, on the last page of No. 9 of this journal, our readers can form a pretty good idea of the appearance of this machine as a mower.

It must be obvious that a combined machine which is equally effective as a reaper and mower, has a decided advantage in respect both to cheapness and convenience. The cash price of Ball's Ohio Reaper and Mower Combined is \$140, very little more than a

out of order, or break, and when a breakage does occur, it is not often of a serious character. The clover mill made at these works is "Birdsell's Combined Clover Thresher, Huller and Cleaner." This mill has taken first prizes at all Fairs where it has been exhibited, both in Canada and the United States. It was awarded the first prize at each of the last two Provincial Exhibitions. It will thresh out

order and clock-work regularity with which every thing is managed, as well as the thorough business like energy of the gentleman in charge, Mr. F. W. Glen, who, aided by his brother, and by competent foremen in every department, have made it indeed a model concern. We advise all our readers who can do so, to visit these works, and assure them that they will receive a cordial welcome, and most polite attentions.



The Breeder and Grazier.

Prize Essay on the Rearing of Calves.

The subjoined Essay contains many suggestions which will be found valuable by the farmers of Canada. It is copied from the Journal of the Royal Agricultural Society of England; vol 22 part 1. 1871 Its author is Thomas Bowick, Stoneleigh Abbey Farm, Kenilworth, Warwickshire.

Owing to the increasing consumption of meat, and the comparatively early age at which ripe beasts are brought to the shambles, "the rearing of calves becomes more and more a subject of importance, and worthy of the attention of the leading agricultural society of the kingdom. Not that there is any need to enlarge on the getting up of stock for the July meeting, or for the stalls in Bingley Hall or Baker Street; that is a different branch of the subject, which, however interesting or valuable in itself, hardly concerns one out of every ten rent-paying farmers. "Master Butterfly" may have his painful of milk morning and night until the days of calf-hood are long gone by; or "Duchess 317th" may pull at the teats of her nurse till a pair of incisors push out the like number of milk-teeth; and still there will be no proof that such can ever be called a desirable general practice. The question before us is, how to rear the best lot of calves, and the largest number of them, at the least expense.

THE CALF HOUSE.

And, as it is of no use to have the bird without a cage to put it in, so, the first point to be attended to is to have the calf house in decent order and of good construction. We do not say of the best construction, for the question has yet to be settled what that really is; and, even when that is done, the majority may be unable to avail themselves of the decision. Still, about most farm premises a spare hovel can be allotted, and, if need be, modified or amended, for this purpose. Believing, as we do, that calves are best tied up for the first couple of months, that they are more manageable in getting their milk from the pail, and that the least outlay is thus involved in house-room, we may simply describe the arrangement of such a building as is referred to. Take any convenient shed or house that comes to your hand; say 18 feet by 15 feet, well lighted and aired, but without draught, and the walls 7 feet high. Leaving one side unoccupied, as the tall of the back floor (1 inch to the yard) should be from the other three sides, converging in that direction, where a grated cesspool should be ready for taking off the urine, you may divide the remaining walls into ten standings. These divisions need not be expensive. Wicker hurdles, costing 1s. each, and measuring 5 feet by 3 feet, will answer every purpose. One end requires to be firmly secured to the wall, and the bottom fixed to the floor with a couple of holdfasts. Of course, in an arrangement such as the one spoken of, there is ample room for the display of any amount of taste or expense in fitting up, but we have named the cheapest plan which we have found fairly to answer the purpose. The hurdles have this advantage, that they are easily removable for getting the floors flushed, and the walls cleaned and whitewashed. A small beam, 4 inches by 3 inches, runs along the wall at a height of 4 feet from the floor, and into this the ropes are drawn, through which the halter-ropes are allowed to play. The small hods, or troughs, holding about 12 gallons each, are likewise fixed immediately under it. At the height of 32 feet is the hayrack, one of the common iron semicircular fashion is probably the cleanest and best, one answering for each pair of calves, so much for the calf house.

DRYING UP THE COW.

But there is yet another point worthy of attention before coming to deal with the young animal itself. The health and condition of the cow before calving greatly influences a subsequent result. A late-milked lean, raking, ill-cared for beast has oftentimes an easier parturition than those that are better furnished in these respects. But her after-milking has a tale to

tell of neglect somewhere; and the scraggy, "set" condition of the calf throughout its after course, often arises more from this cause than from any other. Hence, we would say, dry the cow a fair time before calving, and see that she has something better than barley straw to live on, else the calf and its owner will assuredly lose by it. But what is regarded as a fair amount of time for being dry? If a cow brings her first calf when from two to three years old—which the majority probably do, though all will admit that it is too early—we should not care to milk her more than five or six months after calving. By this means she will grow and increase in size and value before her second calf. But a cow from the fourth to the eighth year, if in good condition, need not be dry more than six weeks or two months before calving; i.e., if fed with a thoroughly liberal hand throughout the year. If more sparingly fed, or if the cow exceeds the latter age, then we should prefer her being dry three months before calving. But, of course, there are exceptions to be met with, which cannot come under any general rule, such as the case of those animals whose flow of milk is so strong as to continue almost up to the time when the new lacteal secretion commences. It saves occasional trouble and annoyance, and is more satisfactory in every way, to have a clearly made out list of the dates of calving and other particulars hung up in the cow-house, and accessible to the cowman as well as to the owner. The following form will meet the majority of cases:

No	NAME	AGE	BREED	No. in private Herd Book.	SERVED BY.	WILL CALVE.
1	Strawberry	7	Short horn	84	Sr Colm.	January 21
2	Myrtle	5	Ditto	109	Ditto	March 4
3	Duchess	12	Ditto	29	Ditto	Feb 17
4	Verlona	4	Cross	29	Vanguard	Nov 4
5	Snowdrop	6	Alderney	29	Ditto	Dec 11

BEST TIME FOR CALVING.

A great deal has been said, by writers on the subject, about the season of the year when young calves should begin to arrive. No doubt it is better, as a general rule, to have the calves well forward and ready for early grass, by which means they are so strong as to require considerably less attention the following winter. But near a town, where a winter dairy is an object, or on the establishment of a nobleman or gentleman, where a supply of milk is as indispensable in winter as at any other time, the period of calving will, of course, be greatly modified; or, more correctly speaking, there will be a sort of duplicate calving time, extending from October till June. And we know of no reason why good calves should not come under the same law which the Cheshire farmer laid down for the application of dung to the grass-land. "Put it on all the year round," said he; and we would say "Rear calves whenever you have them; i.e., if they are worth rearing. If you do not consider them worth rearing, better to sell them at once at a nominal price; even such an one as we met with in Renfrewshire last year, where a contract was made by a dairyman to deliver 100 bull-calves, at 6s. 9d. per head, the buyer removing them on the day of their birth. Not that we think taking the calf so early from the cow is by any means a humane practice; nor yet that we should prefer cutlets from such veal, although retailed by local butchers and grocers at the low rate of 2d. per pound. From the circumstances named, an Ayrshire steer is unknown.

SUCKING VERSUS FEEDING.

We do not intend collating the pros and cons as to whether suckling from the cow, or feeding from the pail, is most desirable in the generality of cases. After a pretty full trial both ways (although our predilections were in favour of the former, as most natural and most manageable), we have been forced to the belief that the latter is the preferable course for the farmer, and for the country at large. In the first place, you can, by an ample allowance, make quite as precocious a development, if that is the object, as by allowing the calf to suck the best cow that can be met with. Then you have the satisfaction of knowing exactly what quantity of milk is consumed, when you give a stated allowance for the pail. You can also the sooner reduce the quality of the rations, by addition or substitution of other food, so as to increase the number of stock; and, in a general way, the calf learns the sooner to shift for itself. It is certainly a matter of occasional convenience to let a pair of calves run with a cow which is intended for a barren, and, after weaning, then to fatten the nurse. But, if done as a general practice, it so far retards the bullings of the cows as to defeat the annual arrangement for a certain number of calves at a particular season. Where suckling from the cow is the rule five calves may be moderately well brought up by an average cow; two and two in succession, and a single calf to finish off with. But, under any circumstances, we consider it desirable to

allow the calf to remain with its dam for the first three or four days after calving. It is undoubtedly the most natural way, and there are several advantages connected with it. Youatt expresses himself very truthfully when he says, "It is a cruel thing to separate the mother from the young so soon; the cow will pine, and will be deprived of that medicine which nature designed for her, in that moisture which hangs about the calf, and even in the placenta itself; and the calf will lose that gentle friction and motion which helps to give it the immediate use of all its limbs, and which, in the language of Mr. Berry, 'increases the languid circulation of the blood, and produces a genial warmth in the half-exhausted and chilled little animal.'" He further says, and we are glad to quote from so high an authority, "In whatever manner the calf is afterwards to be reared, it should remain with the mother for a few days after it is dropped, and until the milk can be used in the dairy. The little animal will thus derive the benefit of the first milk, that to which nature has given an aperient property, in order that the black and glutinous fœces which had been accumulating in the intestines during the later months of the foetal state might be carried off." Moreover, the cow's udder becomes more soft and pliant than it would otherwise be, by the calf being allowed to suck for a time. In the case of young cows especially—the udders of which are generally hard—it is often advisable to allow the calf to suck for a couple of weeks. The whole of the milk need not be consumed by the calf, but a portion drawn into the pail before it is allowed the teat. Thus a double purpose is served; the calf gets the richest (the last) of the milk, and the udder is softened the more by its efforts to obtain what it requires. Not much trouble is generally experienced in getting the calf to take the pail. We find it better to miss the evening's meal, and next morning a very little attention induces the majority of them to partake of what is set before them. At most, the guidance of the fingers may be wanted for the first meal or two.

(To be continued.)

Points of a Good Horse.

MR. BARTHOLOMEW, in a discussion on the breeding and management of horses, at a recent meeting of the Framingham farmers' club (England,) gave the following as his idea of a good "hunter":

The most valuable horses are those that can carry the most weight; and although it does not always follow that the 16-hand horse can beat one of 15 hands, yet most men like to be on a horse high enough to enable them to see what is on the other side of a fence as they come to it; I therefore think the hunter brood mare should not be less than 15½ hands. It is sometimes said, "A horse does not go on his head," and that it is not an important feature; but I think a good head is a great setting off to a horse. I would have it well proportioned to the size of the horse, and care not so much for a "pretty head" as a good intelligent looking one—no matter if it is rather long, provided it is lean, with a kindly expression of eye, nicely hung on the neck, clear between the jaws, to admit of the tracheæ, or windpipe, having full play, and free from all thickening of any kind; the neck should be light, yet running gradually to strong well-laid shoulders; the back should be of moderate length, with ribs springing well from the chine, a well-arched loin, two long hind quarters; the tail "on the top of his back," as it is called, is pretty enough to look at, but I believe the horse with rather drooping hind quarters will be found the fastest. The thighs should be full and muscular, running down into clean, big hocks, flat hind legs, good fetlock joints and feet. It is important that the mare has deep, as well as good springing ribs, muscular, not fleshy shoulders, good deep brisket with plenty of room for the lungs to play, arms well developed, and standing square on good flat fore legs, the sinews of which should be free from all appearance of fleshiness, but hard and wiry feeling, and running into strong fetlock and pastern joints, with feet free from all appearance of contraction or flatness. This description of the essential points of a horse is perhaps a very imperfect one, but I know not what more to say about it, further than, above all things, secure good oblique shoulders, and strong thighs and hocks. Nice, straight fore legs are doubtless very desirable, but I would rather put up with a horse with arched fore legs, and that was a little cross-ankled, provided his shoulders and hind legs were good, than have the best formed fore legs ever seen, with upright short shoulders; remember, however, that it is not every horse with high withers that is desirable, but the shoulders should be long and well laid into the back. The chief points of excellence that I have enumerated in the mare are in all respects the same in the stallion, with perhaps the exception that his form

* Flake hurdles, or lamb hurdles, as they are variously styled.

should be more compact, his joints more firmly knit, and his general appearance denoting the possession of great power in comparatively small compass, and he must be thorough-bred.

What, then, has been said as to the shape of the hunter and riding horse applies equally to the cart horse with the exception of the shoulders, for whilst you cannot well have the shoulders of a riding horse too oblique, those of the cart horse ought to be more or less upright, so as to allow him to throw his weight into the collar. It is equally important with cart horses as with owners, that attention should be paid to their breed, selecting those that are remarkable not only for their form, but for the hardness of their constitution, and for their activity.

Our Native Cattle.

To the Editor of THE CANADA FARMER :

Sir.—As I scarcely ever see anything in THE CANADA FARMER about our common native cattle, but a great deal of blowing about the Durhams, Galloways, &c., I will give you my opinion about them. It is well enough for men that have warm and commodious cow-stables, root-houses, &c., and that raise plenty of roots to feed through the winter, to keep these choice breeds of cattle, but for the majority of farmers throughout Canada, including myself, who let their cattle run out in the barn-yard, through our long Canadian winter, and feed nothing but different kinds of straw and chaff, with a little hay through the spring, the native cattle are best. I believe the Galloway breed of cattle to be hardy, and better suited to Canada than the Durhams. A cross between them and our common cattle does well. I have wintered some half and three-quarter bred Durhams, in the yard with our common cattle, they had just the same chance, shelter, food, &c., and when spring came they were nearly a-lifting, when the others were quite strong. Now, Mr Editor, I think if people would pay a little more attention to the management of our common cattle, raise their bulls from select cows, and cross them well, it would improve them very much, and that we would have a breed of cattle hardy, good milkers, &c., that would come up to any of the improved breeds of cattle in the country.

Some farmers when they go to our provincial fair and see the sleek thorough-bred cattle of different breeds, the large year-olds and two year-olds, become prejudiced against their own cattle. I advise them to take it coolly, as they could easily blot some of their own up to as great a size, though perhaps not so perfect a form, if they would give them two cows' milk, from the time they are two weeks old, until weaned, and then stick to them with ground grain, good pasture, roots, &c., but they generally think it is all in the breed, and would rather give from fifty to a hundred dollars, for a yearling bull to improve their stock, than pay a little attention to raising one of their own, and as for our provincial fair, in the cattle department, I would call it a fair of fat cattle, as they are all "beef to the ankles like Brown's cows." I see that the Board of Agriculture will give power to the judges this fall, to reject over-fed cattle. I consider this perfectly right, as I have seen cattle at our exhibitions, so fat, that though panting and with their tongues hanging out, they could not walk a snail's march. Yet they were shown for breeding cattle. G. W. D.

York Town-ship.

NOTE BY ED. C. F.—No doubt our native cattle are capable of being greatly improved, not only by more care in breeding, but more care in wintering them. What hinders our correspondent from furnishing shelter, roots, &c., even for his common cattle? Raining in the open barn-yard, with no feed but straw and chaff, until towards spring, is not giving them a fair chance of competing with improved breeds. Though it is not "all in the breed," some of the secret of raising first-rate stock is in the breed, and \$50 or \$100 for a choice young bull is not a bad investment by any means.

DURHAM CATTLE IN FRANCE.—M. Jemet thus gives the position of the Shorthorns in the opinion of the French :

"I witnessed the sale with great satisfaction, in consequence of the high price at which Durhams were sold, and which showed how they are now appreciated in France. Some twenty years since, it was possible to impose on the French public, by erroneously criticising the Durham breed, and 'breeders of the cabinet' treated the predilection of the supporters of this splendid race as a ridiculous infatuation. But now impartial men admit that what was once styled an infatuation, and which has increasingly gained ground during a quarter of a century, is in reality a just appreciation of the high value of Shorthorns."



The Dairy.

On Churning.

A talented Frenchman once wrote a pamphlet upon the proper manner of blowing out a candle; and I suppose the reader will consider his book and the heading of this article to be paralled cases, and exclaim, "Why, everybody knows how to churn." But I think a careful examination will show that everybody does not know how to churn, or rather how to produce butter from cream, or we should have less growling from the "guidewife" because the butter would not "come." All who have had any experience in the matter know the apparently perverse nature of butter; at times it will come (that is, separate from the buttermilk) in a few minutes, and sometimes will not come at all. This and many other curious facts may be made clear by a little careful investigation in the matter, which, with thy permission, friend editor, I propose to make.

The butter exists in the cream in the form of minute globules surrounded by a thin film of casein, and to obtain the butter we must first break the film. This may be done in two ways, either by agitating it or by heating it. There are several conditions which influence the time required for separating the butter by churning; and if these are thoroughly understood and complied with, there will be little or no trouble in getting butter to come. The main and most important condition is the temperature of the cream when it enters the churn; there seems to be a certain medium established, and it seems to make but little difference whether the temperature of the cream is above or below it, there will still be the same trouble in breaking the casein which envelopes the globules of butter. The cream when poured into the churn should not have a higher temperature than 55° nor lower than 53°; when put in this temperature, it will rise from 5° to 10° during the operation of churning.

Another important condition which does much to influence the time required for separating the butter, is the state of the cream when it is put into the churn; if sweet, it will require much longer than if sour, and it is an established fact that before butter can be made the cream must be sour, and if it does not reach this state before it goes into the churn, it must and will afterward, or no butter will be obtained. Some of those who always take the premium at our county fairs, always churn sweet cream to obtain it, and I have often had this thrown in my teeth when advocating the above doctrine, but that does not controvert my argument, for before the butter separates it does get sour.

A thermometer hanging in the room where the cream is kept will indicate the temperature of the cream at the time, and this may be either raised or lowered to about 54° or 55°; it goes into the churn, by adding cold or hot water, as the case may require, while the churn is in motion.

The time occupied in churning has a great effect upon butter, and also upon the temperature of the cream in the churn; if the cream is at 55° when put into the churn, very fast churning will raise it too high, and soft, light coloured butter will be the result, especially in warm weather; in cold weather the motion should be faster, in order to keep up the proper temperature. I have known entire churnings to be thrown into the hog-tub because one or two of these necessary conditions were not complied with. Even when the churn fails to separate the butter, we have one unfailing agent left in the form of heat, which never fails to burst the film of casein, but will not produce an article fit to be called butter—but it can be put to uses known to every good house-keeper.

Some are in the practice of churning the whole milk; in this case it should have a temperature of at least 65° before going to the churn.—DAIRYMAN, in *Germantown Telegraph*.

How Philadelphia Butter is Made.

THE PROCESS.—After the milk is drawn from the cows it should be strained into pans properly arranged on a bench for the purpose, with a small quantity of fresh sour milk in each one to prevent raising of the cream, which should on all occasions be taken off from thirty to thirty-six hours after being milked, it being found that by standing longer in a large dairy, more is lost by deteriorating the quality of the butter than is gained in quantity. When the cream is skimmed off the milk into a large cream-pot, it should be put in the butter-hole in the spring, and let stand one day, and then skimmed off, so as to remove any sour milk that may have settled from it to the bottom of the pot, and should be subsequently stirred every day until churned, to prevent rancidity from taking place on the top of the cream by too long standing, which is the main cause of all the stinking butter that is made. The cream should be churned twice in the week during the summer months, and all the year where there is a sufficient quantity to warrant it. The temperature of the cream and churn should be about sixty-two degrees, so as to ensure the butter to come right, and in the proper length of time, which should be about thirty minutes. There is as much danger in having the butter come soft by over-churning as by the atmosphere being too hot. In order to regulate the temperature of the cream in the fall, winter, and spring, it should be set in a tub of hot water until it comes to the temperature above designated—the butter broken in the churn to the size of peas and chestnuts. The buttermilk should be drawn off through a fine hair sieve from the vent of the churn, which should be about an inch hole. A sufficient quantity of spring water should then be put in, and a few revolutions of the churn, when it should be drawn off, and then another quantity of spring water put in, and tumbled in the churn until gathered into a mass. The water should all then be drawn off, and the butter cut into cracks, as it lies in the churn, to receive the salt, which should be a pint for fifty pounds, regulating below that, or above that, according to the quantity churned. The butter should then be tumbled in the churn until the salt is mixed with it, and it will then do to take out in 10 or 15 pounds, and lump into pounds, ready for sponging, which should be done by having a sponge of proper size enclosed in a linen cloth and passed over the lump, by pressure, to absorb the brine and moisture it contains, which should then be weighed and printed as intended for the market. The sponge should be frequently squeezed out of cold water as dry as possible, during the sponging and weighing of fifty or one hundred pounds.

REMARKS.—The butter maker will see the advantage of this mode of salting and working butter over any other mode, and particularly of the lever or worker as it is called, from the fact that less of it is exposed to a warm atmosphere at a time, as it must necessarily be where fifty or one hundred pounds are operated upon a broad surface, making the butter soft and oily, which is detrimental to its quality, however carefully attended to, from the time the milk is taken from the cows. The above plan was perfected by experiment by me, and carried out for a succession of years, as thou knowest, with a success as to quality and sale of my butter not surpassed by any one at the time I was operating.—H. EAMES, in *Local Advertiser*.

GOOD COWS.—Mr. Eliza White, of Hallowell, writes us he has a cow seven years old, which produced in 11 months—from May, 1863, to April, 1864—257 lbs. of butter. We have also before us an account of the product of two cows owned by Mr. John Given, of Newport. One was eight, and the other five years old. The two produced in the year 1863, 351½ lbs. of butter, and also ten new milk cheese. The cows calved in May, and had no extra feed. During one week in June, the milk of the old cow was set by itself and produced twelve pounds of butter.—*Main Farmer*.

THE QUANTITY OF BUTTER INCREASED BY WATER. A New York dairyman furnishes the following advice for the *Genesee Farmer* :

"There has a great deal been said about butter-making, but I thought, as I had had a little experience I might offer a few hints that may be of use to some of your many readers. When cows are feeding on dry feed, the milk is thicker or richer than when feeding on juicy grasses; then add warm water, when setting the milk, in quantities sufficient to make it as the milk from ordinary cows in May or June. The milk from some cows in the spring and summer months is very thick or rich; then add cold water, if the weather be hot. I have practiced the above, and it has increased the quantity from one to three pounds per cow, each week."

Sheep husbandry.

Scours and Grub in the Head.

A CORRESPONDENT of the *Country Gentleman* sends a communication to that paper on the above subjects, from which we make the following extracts.—

"I used to have a medicine chest, and consulted a celebrated sheep doctor, but my success was usually so poor, that I soon dispensed with everything but good keeping. The scouring of lambs is in some measure owing to the character of the season. The best remedy that I have found is to commence feeding them with oats or bran as soon as they are weaned. Continue it until winter. I have found by long practice, the clover field to be the best place to wean lambs. I have sustained considerable loss from grubs in the head, and have tried various remedies for this disease. I have injected with a syringe strong tobacco juice up the nostrils but am not certain that I ever effected any cure by it. For the last ten years I have lost none by the grub until this fall and winter, and up to this time I think we have lost somewhere between thirty and forty. This grub in the head seems peculiar to young sheep. I think by good keeping early in the fall I have measurably kept clear of them for the last ten years. Last fall I was absent and my young sheep were somewhat neglected. When the grub is fairly located in the head, I doubt if there is any remedy. In the fore part of the winter I noticed some of my lambs suling. I picked out seven or eight, put them in a place by themselves, fed them with oats a morning and evening and set them dropped off one after another until all went by the board; some of them continued six weeks, and then died. If a person in the sheep business is determined on success, he must keep them in first-rate order from the time they are weaned until the spring they are two years old. So says my experience, which is of fifty one year's standing."

THE Greenfield (Mass.) Gazette estimates the loss of sheep in that country the past winter at from 4000 to 5,000.

FOUR LAMBS AT A BIRTH.—We are informed that a Cotswold ewe belonging to H. M. Chaffin, of Worcester dropped four lambs on the 15th inst. whose aggregate weight was 34 lbs. All are said to be doing well.—*Cultivator*.

EXTRAORDINARY FECUNDITY OF A SHEEP.—A half-bred Leicester ewe, belonging to Mr. Edw. D. Blackman, of Thornyslack, has this year yeaned three lambs all of which are doing well, and, what is most remarkable, this same ewe has now yeaned three lambs for five years in succession, and the progeny in every case has been successfully reared. *Westmoreland Gazette*.

WOOL SAMPLES.—Messrs. J. E. & S. C. Benedict, of North Broadalbin, have left us samples of two fleeces sheared this spring one of them weighing 17 lbs. from a yearling lamb which weighed itself 59 lbs. after shearing, and the other weighing 16 lbs. from a two year old, from Sprague's flock, the weight of which was 76 lbs. They had been tagged twice during the winter, while suffering from scours which is to be taken into the account.—*Country Gentleman*.

GOON WOOL.—The first requisite for good wool is fineness, which is governed by and produced under the laws of stock-raising, as the breed or variety, climate, the summer and winter food of the sheep and their management.

The second requisite is softness. This depends on the character of the yolk or oily secretion which fills the tube of the hair or fibre. This yolk crystallizes in the fibre after shearing, and renders it brittle and harsh, or soft and silky according as its character is formed by those matters which govern its growth.

The last requisite is the length of the wool or of the fibres composing it, and this is governed by climatic changes and the condition of the animal.

SHEEP SHEARING IN OHIO.—A public sheep shearing took place on the 25th ult., at Hartford, Licking Co., on the show grounds of the Hartford Central Association. Eighty-eight sheep yielded 1,069 pounds of wool, or an average of about 12 pounds and 2 ounce of wool per head; of this number 20 were bucks, the remainder ewes, some suckling lambs and some yearlings. The sheep were unwashed, but free from dirt and other foul matter except the natural oil of the wool; and owing to the cold and wet weather this spring, the oil had not started as much as is usual for the time of year. The *Ohio Farmer* and *Prairie Farmer* both contain reports, from which we glean the above statements.—*Country Gentleman*.

Correspondence.

Notes and Queries.

"J. C.," of Orillia, writes on several topics, which, for convenience of reply, we number.

1. I wish to give my experience as to the qualities of buckwheat. The winter before last I fed one acre, and last winter two acres of buckwheat straw to a small flock of sheep, and lost neither ewes nor lambs, except by accident. So much for the straw; and as for the grain, John Johnson, of N. Y., feeds it to his sheep with satisfactory results.

2. Do you know anything of the following disease in pigs? Late last fall a young Berkshire sow became unable to open her mouth. She had to suck in her food instead of eating it, and was unable to squeal after the custom of pigs. She continued in this state through most of the winter, and did not thrive well, but has now quite recovered.

3. The following cases are well authenticated, and I think worthy of publication. A ewe of Mr. C. Harvey produced a dead lamb. She pined and continued dull for two weeks, when she dropped two more lambs, which she is rearing. A ewe of Mr. J. Leigh's was sick for some days in spring, and afterwards recovered. Having, as her owner supposed, failed to breed, Mr. L. killed her fat in the fall, and was surprised to discover the remains of a lamb considerably wasted away, but still quite distinct. Mr. Thomas Dunn has a lamb which weighed 15 pounds on the second day. I had this spring a jet black South Down, pure breed.

4. The American papers are advertising cuttings of *Salix alba* for hedges. Is the large English willow so common about Toronto and along Yonge street, *Salix alba*, or what?

5. Some American writers assert that sulphur and salt is a remedy for ticks in sheep. I have given half a pound of sulphur to a flock of eighteen in a week, and find the vermin as numerous and as lively as before.

ANS. 2.—We have no knowledge of the disease described, but perhaps some of our readers may be able to furnish information about it.

4. The willow so common in the neighbourhood of Toronto is not *Salix alba*. We are not positive as to its botanical name, but think it is either *S. vitellina* or *S. fragilis*.

Reply to queries about Drain Tiles in our next.

LONGEVITY OF A CAT.—A correspondent, in the County of Kent, says he has a cat which is now 26 years old and seems "likely to live a number of years yet."

HEDGE PLANTS: SWERT BRIAR.—"Briar," of County of Carlton, says—"I have not seen anything in Canada equal to the Briar for Hedges, as far as hardiness and thickness of growth are concerned. The only objection I can see to it, is keeping it within due bounds."

SEED CLEANSER.—"J. B." is informed that we are unable more particularly to describe the mill for cleaning and separating seed grains. No doubt it works, as our correspondent supposes, by means of fans and sieves, but we have no minute description of it in our possession.

TRIAL OF REAPING AND MOWING MACHINES.—The Secretary of the West Durham Agricultural Society requests us to announce that a trial of reapers and mowers will take place, under the auspices of that Society during the approaching hay and harvest time. Due notice of time and place will be given.

STUMPING MACHINE.—"J. W.," of Beachburg, Co. Renfrew, wishes to know where he can get "the best and the cheapest stumping machine," and adds:—"I am told you know where to get a useful one, not very high in price." We are sorry to say we do not possess the information our correspondent wishes to obtain. Perhaps some of our readers can furnish it.

IMPROVED STOCK FOR NEW BRUNSWICK.—Mr. John Snell, of Edmonton, sends us the following item of information. "I am pleased to be able to inform you that the farmers in the Province of New Brunswick are making a move in the introduction of improved stock. I have this day sold to Charles Burpee, Esq., agent for the Agricultural Society of the County of Sanbury, N. B., a choice lot of sheep, consisting of six Leicester ewes, three Leicester rams, and three Cotswold ewes."

ADVERTISING LAND FOR SALE.—In reply to the communication of a "Stock Farmer," which appeared in a recent number of THE CANADA FARMER, a correspondent writes:—"I have three thousand acres for sale in _____, five township, land of the very best quality, near _____ R. R., well timbered, &c., &c., at \$12 per acre, one-fifth down, &c. For further particulars, address _____, &c.," all of which, with the blanks filled up, and as much more as the writer wishes, we shall be happy to insert in our advertising columns at the usual charge.

VENTILATION FOR A ROOT HOUSE.—"W. D.," of Stratford, writes.—"I saw in your last issue that 'W. W.' intends to build a root-house to hold turnips, and desires suggestions. I think if he would take some small logs and bore a hole through them, or make some small troughs long enough to project out through each side or end of the root-house, laying them horizontally about three feet above the floor, any quantity could be kept good through the winter. If the current of air should be too much at any time, it is easy to stop one end of the troughs or pipe."

SMALL FRUITS.—In reply to "Adam Graham," of Whitchurch, we may state, that the cranberries have been selected from among those found growing wild, and by cultivation have been, in some degree improved. The nurserymen can, no doubt, furnish the plants, and also the New Rochelle, or Lawton blackberry, and the Antwerp raspberry plants. They are about equally hardy, and will both be the better for being protected in winter. You can plant strawberries in rows two feet apart, and six inches apart in the row. Keep free from weeds, and in winter cover lightly with leaves.

PRUNING APPLE TREES.—"C." asks: "Will any of the readers of the CANADA FARMER tell us the best time of the year to prune apple trees?"

ANS.—This depends entirely upon the object for which you prune. If to check the growth, prune in midsummer; if merely to thin out the top, prune in April.

MANURE FOR CABBAGES, &c.—"Thomas Farrow," of Blue Vale, asks:—"Will you, Mr. Editor, or some of your kind correspondents, tell the different kinds of manures suitable for the proper growth of cabbages, carrots, in short, for the garden production in general?"

ANS.—We know of nothing better than plenty of well rotted barn-yard manure. If any one can tell of a better, we shall be glad to hear from him.

RANDALL'S WEATHER INDICATOR.—A subscriber at Hamilton wishes to know if this instrument is "what it is represented to be, what is its price, and whether it can be sent by mail?"

ANS.—It is highly recommended by many very competent judges who have tested it thoroughly. Professors Croft, Hincks and Hind all testify that it indicates changes in the weather with accuracy. Prof. Buckland, after several months' trial, pronounces it "of great practical use." Its price is \$2.50 with thermometer, and \$2 without. The proprietor, P. R. Randall, Masonic Hall, Toronto, will send it by mail, free of charge, on receipt of the above prices.

"WARNING TO SMOKERS."—Under the above heading, "A Subscriber" at Lochiel sends the following statement of a recent accident resulting from the use of the pipe:—

"John W. McMillan, one of the most thriving and industrious farmers of our township, lost two first-rate barns, shed and stables, with \$200 worth of farming implements, through one spark from a pipe. This is another warning to people not to allow servants or others to smoke their pipes about barns or stables."

APPLE ORCHARDS IN THE CO. OF CARLETON.—"Briar" writes: I am afraid we have the same difficulties to contend with in apple growing in this County, on the bank of the Ottawa, that your Ormstown correspondent complains of in the County of Chateaugay, for I do not know an orchard in this neighbourhood that is in a satisfactory state, but I know of several that a few years since were in fine bearing that have dwindled to nothing. Under such circumstances, would there be any probability of success in attempting the open air culture of the hardiest kinds of grapes?

ANS.—You can make the experiment with a few vines, and send the result for publication in THE CANADA FARMER. Then we shall know.

PROTECTION AGAINST WIND.—A correspondent asks:—"What kind of an evergreen will make the best wind-brake and be a protection for an apple orchard, some of the trees of which will be 300 feet off? How far apart should they be planted, and how trimmed?"

ANS.—We know of nothing better than a double row of Norway Spruce, planted six feet apart each way, set in such a manner that the trees, in one row, shall stand opposite the spaces in the other, and never trimmed at all.

SKIRVING'S AND LAING'S TURNIPS.—"Freelton" writes:—"The farmers in this neighbourhood are now about sowing their turnips. Much perplexity exists among them as to what kind of turnips they are sowing by the names of the different kinds of the seed given by the vendors here. We have two descriptions of Swedish turnips. One is a large sized one with a long leaf, said by some to be Skirving's. The other is a small sized turnip, said to be Laing's Improved," with leaf extending down the stalk from the tip to the "bulb." The different kinds are confounded with each other. Will you give a description of each in your next issue?"

ANS.—Our correspondent has given a pretty good description of the two kinds of turnip he names, and we cannot add much to it. The purple-top Swede varieties are not always distinguished by seedsmen as accurately as is desirable. "Skirving's" turnip belongs to the tankard class, and is prone in this country to grow long and very much out of the ground. "Laing's" is a good firm round turnip, but we have heard the complaint that as a field crop it does not yield so largely as some others. The common Improved Purple-Top is probably as good as the best.

GRAFTING TREES.—In reference to this subject, we have received replies to the inquiry of J. A. P., from Mr. Henry Bell, and Mr. Jos. N. Doan. They both recommend that the grafts intended for use be taken from the trees in the spring, when there is no frost in the limbs, and kept in damp moss in a cellar. The object is to keep the scions from becoming dry and shrivelled, and any means that will accomplish this, will answer the purpose. The time to begin grafting they place from the middle of April to the first of May, and it may be continued until June. Mr. Doan gives as a recipe for grafting wax, 3 lbs. of rosin, $\frac{1}{2}$ lb. of bees-wax, $\frac{1}{2}$ pint of linseed oil. Mr. Bell uses three parts rosin, two parts bees-wax, and two parts tallow. This wax is used to cover all the cuts and wounds made in grafting. Mr. Doan says, "cut the scions with a regular and equal slant on each side, but leaving the outer edge a trifle the thicker. Check the stump through the centre, opening it by means of a wedge, sufficiently to admit the scion, which insert in such a manner as to bring its bark in contact with the bark of the limb, take out the wedge and cover with wax. When the limbs are large I insert a pine wedge, on removing the hard-wood wedge with which I have split the stump, and when I have properly adjusted the scion, I slacken the pine wedge until the scion is held firmly, but not pressed enough to injure the bark. I then break the wedge off, leaving the remainder in the limb."

SCRATCHES OR GREASE IN HORSES.—"J. K. S." of Kilzlyth, writes:—"I have a horse very bad with the scratches, you would oblige me if you would let me know through the columns of THE CANADA FARMER, what would cure him."

ANS.—This disease like most of those to which horseflesh is heir to, is the result of neglect. It may be easily prevented, and speedily cured in its first stages, but is very inveterate and hard to get rid of, if of long standing. It begins with inflammation of the oil glands of the skin about the hind feet. These vessels, named sebaceous glands, supply a fluid to soften the skin, and prevent its cracking. They are liable to inflammation from sudden cold, as when a horse after exercise over wet roads is allowed to stand in the stable without cleaning and drying the hair about the feet. Leaving mud to dry on the legs and feet is another fruitful cause of the disease. Or it may result from a filthy stable—the wet straw and excrements tending to produce cold, and irritate the skin. The parts at first become hot, then assume a swollen appearance, soon the hair drops off, the skin has a glazed look, becomes covered with pustules, and at length emits an unctuous discharge which becomes very offensive. If suffered to grow worse the leg half way to the hock is crusted over with thick, horny scabs, divided by deep cracks, when the affection is hardly curable. Prevention consists in clean

stables, and thorough drying and rubbing of the legs after work. Should the disease appear, the affected parts should be thoroughly washed with castile soap. A flannel bandage moistened with warm water, and suffered to dry on the part is also good. To soften the skin apply an ointment of one drachm of sugar of lead in an ounce of lard. When there are cracks, wash them with a solution of four ounces of alum in a pint of water. The beast should be fed on bran mash, carrots and green food. This treatment will be found effectual in all but the worst forms of the disease. For these a dose of four or five drachms of aloes at intervals of two days—a poultice of boiled and smashed carrots put on pretty hot, and an ointment of one part rosin, three of lard, and one of calamine powder, are recommended.

COTTONIZING FLAX.—In reply to the enquiry of a Kingston correspondent about the process used to cottonize flax, we cannot do better than give a brief digest of the report of a joint committee of the Rhode Island Society for the encouragement of domestic industry, and the New York Agricultural Society, who inspected very carefully the process employed by the Lockport Flax Cotton Company, and thus describe it.—1. Breaking, by passing through revolving fluted rollers; 2. Dusting, by passing through a machine similar to the "willow" of the cotton manufacturers; 3. Scutching; 4. Combing, by a process like that for preparing worsted yarn; 5. Dusting again; 6. Steeping the fibre twenty-four hours in tepid water; 7. Boiling in soap and soda ash (three pounds of the latter per one hundred pounds of fibre) for eight to twelve hours; 8. Immersing in chlorine for two hours or more, as necessary for bleaching; 9. Immersing in sulphuric acid for two hours, (of one degree of strength); 10. Dipping in a solution of alum, borax and salt; 11. Washing in distilled water with a little sal soda; 12. Drying by heat from steam pipes; 13. The fibre is passed through a lapper; 14. Carded on machines similar to wool cards; 15. Passed through a railway head with rotary gills; 16. Passed through a drawing frame. The loss in passing through the breaker is estimated at thirty per cent.; through the duster, thirty per cent. more; in scutching, five per cent. The entire loss, from straw to cottonized flax, seventy-five per cent.

The Canada Farmer.

TORONTO, UPPER CANADA, JULY 1, 1864.

Canada as a Field for the Capitalist Farmer.

A communication, signed "A Stock Farmer," appeared in our issue of June 1st, having been transferred to our columns from the *Canadian News* of a late date. The writer enquires whether Canada offers any inducements to farmers with capital, which may be sufficiently tempting to induce agriculturists in Britain to emigrate. We deem it of the highest importance that the enquiry should be answered by those who have entered largely into agricultural pursuits here, so that proper information, as to our resources, may be furnished and placed in the hands of farmers in Britain possessed of capital, and who may be tempted to transfer their operations to this country. We therefore invite communications on this subject from all who may feel an interest in it. We will publish such of the communications as may be likely to be of special use, and we will collate from all a general synopsis of information obtained, and put in such a form as will be most likely to attract attention.

The subject naturally divides itself into two heads, *first*, the purchase and clearing up of large tracts of wild forest land; and, *secondly*, the obtaining large tracts of improved property, which would be suitable for stock raising and feeding operations, on a large scale. It is a matter of great interest to our young country, and one that cannot be quickly responded to; nevertheless, the following observations will, in the meantime, we trust be found useful to such persons as may intend to make Canada their future home, with the idea of entering largely into stock raising and feeding.

First, as to purchasing and clearing up large tracts of wild forest land. We have now under survey many new townships in the government lands, which are open to purchase and occupation. These lands can be purchased for cash at 5s. per acre, and in all the townships tracts of from 1000 to 5000 acres can be selected of excellent quality—there is no doubt that in the new townships there is a great deal of bad land, but these inferior tracts are interspersed with some of the finest land in the world. The townships on the several new government emigration roads, are generally more or less rocky, the surface is uneven, the land on the elevations is of course inferior, but in the valleys it is of the most fertile description. There is a great deal of valuable merchantable timber, and no part of Canada is so well watered with lakes and streams. The situation of the largest portions of these lands is far from the navigable waters, but that is of little consequence to stock farmers, whose produce will of course come to market on foot.

The clearing up of wild land in Canada is a substantial sum—do as you will, it will cost about a certain sum per acre. We have several methods of clearing up wild land, but one or all they come to the same thing in the end—the cheapest methods take most time, the most expensive is to the capitalist really the cheapest, as he not only gets the use of the land sooner, but the first results in potash and merchantable timber, come to hand more readily, and afford some return for the outlay. Wild land, such as we speak of, will cost to clear by the hundred or thousand acres from \$11 to \$16 per acre—the time occupied is governed by the number of hands employed, but it may always be considered that before a crop can be put in, 12 months must elapse. A capitalist commencing such a job, would get together a number of hands, say in the first place from 10 to 15 in number; these are most easily procured in gangs, in Lower Canada, as the population of that part of the province is used to lumbering operations, and to face the bush far from the requirements of civilized life. These people, under a proper foreman, and provided with sufficient provisions, pork in barrels, flour and tea and sugar, would proceed to the location in September; their first work is to provide shanties for themselves and their stores, which are soon erected. If the employer attends in person, he will require a separate establishment for himself, but it is believed that an old countryman can be equally well served by his foreman, and at much less inconvenience to himself, until matters have progressed farther than the first steps. All requisite house accommodation having been raised and made good against the weather, which is by no means a long job—the men proceed with underbrushing, that is they cut down all bushes, saplings and small trees, to the diameter of 4 inches, and pile them in heaps, at the same time cutting up all fallen and dead logs and timber that may be lying on the ground. These and the brush heaps are piled together in the most convenient places, and as soon as the party has underbrushed as much as will be likely to be chopped during the ensuing winter, they proceed to chopping. Chopping is cutting down all the larger trees,—each tree is felled by itself, leaving the stumps about three feet high,—the heads of the trees are thrown together as much as possible, into what is called jam-heaps; as each tree is thrown with its head of brush on the heaps, the choppers cut down the branches (or as they say, "nick them down,") so as to make everything lie compactly, then other trees are felled in a similar manner, until all within the reach of the heap have been cut. Meantime the stem of each tree is cut up into such lengths that a yoke of oxen can haul them, or rather haul one end of them round—the larger ones are selected to form the middle of the log heaps, and a little time is expended in the chopping as is compatible with the power of moving the logs in the future part of the operation. The chopping continues

in this manner during the whole winter, the snow forms no obstruction to the men's work, or rather is not allowed to be an obstruction. When any merchantable timber is found it is cut into lengths suitable for its future market, and it remains on the ground amongst the other cut timber, but is not burned.

These operations are continued until the spring is advanced, and the proper time comes for burning. Fire is then set to the brush, and if a good time is selected, (and more judgment is required here than in any other part of the operation), the entire brush will be burned, together with all dead leaves, twigs, and the whole surface of the soil, the large bodies of the trees being alone left. Now commences the logging; there must be a thoroughly good yoke of cattle to each five men; these must be fed with grain and sufficient hay: all of which must be brought to the work during the winter, and which forms one of the largest items of the outlay. Each yoke of cattle is driven by one man, and the other four are the log rollers. The logs are now rolled into heaps and burned as fast as the work proceeds. Before the logging commences, however, all hands set to work to get the ashes of the log heaps together in such manner that they may not be injured by the wet, and these ashes are protected either in small shanties or some other manner until wanted for potash. As fast as the log heaps are burned, the ashes are collected and stored in a similar manner. All such timber as is calculated for fence rails is left unburned, to be split up for fencing purposes afterwards. As soon as sufficient of the land is cleared, the first object ought to be to sow a sufficiency of timothy and clover seed to form grazing for the cattle, and for hay purposes. This should never be neglected. Potatoes sufficient for the present and next seasons use should also be planted, and also Indian corn. These two articles are fit for use in three months after planting, and save much future expense both as feed for men and cattle. By the end of August a large piece will be cleared, and all this may be sown to fall wheat. If the settler is far enough into the forest to be secure from the inroads of cattle, but little or no fences are required until the following spring. If there are cattle in the woods, the fencing must proceed with the sowing. If the land for fall wheat is properly selected and the seed got in in time, a crop may be relied on, and the results have always been considered to equal the outlay in clearing the land. Meantime, the potash-making will have progressed, and the results will be ready to take to market the next winter, so that during the second winter the first return from the land (which is the results of the potash) will be had. The potash may be reckoned on to produce from \$2 to \$3 per acre, according to the quality of the timber, and often far more, if care and skill have been used. The next winter's operations will be similar, and in this way the future estate is cleared up.

We will now see what possibility there is of the agricultural capitalist settling himself on improved land in an improved, well settled, and civilized district. In Canada, as in every other colonial place where land is more plentiful than money, there are always opportunities offering themselves for the purchase of land and improved farms at less than they are intrinsically worth, and at less than the outlay which has been made on them. But as our surveys are mostly in 200 acre or 100-acre lots, the property thus sacrificed will usually be found to consist of either 100 or 200 acres, and seldom of more. Opportunities are continually occurring whereby other lands can be purchased at a cheap rate, and near to those first acquired. It is believed, however, that considerable difficulties would occur in the acquiring of 1,000 acres (in any one place at one time) of land considerably improved. In a place like Canada, where the tendency of all capital is to fall into and become invested in real estate, there is little difficulty, provided that time and patience are used, in purchasing almost any amount of property, and at reasonable prices, but decided bargains in large blocks of improved land are seldom to be had. We believe, however, that except in the very best settlements 1,000 acres of land, with from one-half to two-thirds cleared, might be acquired at \$30 per acre, including all buildings and improvements. In making such a purchase as this, the capitalist would be able to commence farming at once. No doubt the fences and buildings would require considerable re-arranging, and the land would require a good deal of ready for manure, and bringing it into a reasonably good state of tillage, but the returns of the farm would be immediate, and the business would be such as the capitalist would understand, and would be under his own control. By deep ploughing, good surface draining, and judicious cropping, such a property would become a remunerative one in a very little time, but it would not increase in value in anything like the ratio of wild land bought well and at a low rate. Such land would be let at from 15s. to 21s. (\$3 to \$4) per acre, and we may therefore safely

say that the annual yield in the hands of the owner would be from three to four pounds per acre a year. In making this calculation, the portion of the land still uncleared must be deducted, as the rent on such farms is only charged on the cleared land; the wood land would remain unproductive, and if cleared would be subject to the usual charges of clearing and improving such property. The clearing of land in an old settlement is always, however, a much less expensive job than in a new country. Labour is more easily to be had, and there are many (such as farmers' sons) who will take a job of clearing land, when they would not go out to service. The timber and firewood to be removed is also generally worth something more than it would yield as potash. The ashes can be sold without converting them into potash, and the job of improvement is much lighter than clearing up the forest far from settlement. The produce of the farm also becomes in this way convertible to a considerable and profitable extent, all of which facts speak well for the acquirement of improved land.

It is almost impossible to state what the probable yield of such an improved farm would be for the first few years, so much will depend on the judgment used in purchasing, and the state it is in; but as a matter of personal comfort to a person who has been used to the old country, there can be no doubt of the preference lying with improved land in a settlement, over wild land in the wilderness. But, on the other hand, the man who first strikes into the wilderness and carves therefrom an estate, is, and always remains, the first man in his neighbourhood—municipal and civil honours are necessarily forced upon him; he becomes, as a matter of course, the head of his township, from that to the representative of his county in Provincial Parliament, or even of the district in the Legislative Council is not by any means beyond his reach. It is thus that all the leading farmers in the Province have (who were unconnected with the professions) commenced their career. The head of the family usually commences with the farm. In his selection of property, he will naturally choose land with a good water power on it; his expenditure causes a settlement around him, and the requirements of that settlement call for a mill, saw and flouring mills, and bring in their train the merchant's shop, tavern, and other similar trades, and a village, so that by the time the family is grown up, there is very often a place and business for each as he may show himself adapted for it. These advantages are not to be had by the man who purchases improved land; as he commences so he must go on; he has (politically) equal talent to struggle against, without the prestige and advantage of being the head of the settlement, his means are equalled by others who are his neighbours, and township and county honours become dear at the price he is obliged to pay for them. Against this, however, he has personal comfort, the local advantages of schools, churches, villages and towns, an immediate market, and generally good society. The fact, however, that the agricultural capitalist can do well in Canada, either as a pioneer in the wilderness or as a settler and improver in the front townships, cannot be gainsaid.

Stock-raising and feeding have always done well, but have hitherto been but little followed as a separate branch of business, owing to the more tempting returns (at a less outlay of capital) offered by the growth of wheat. The advent of the midge, however, and the other ills that have lately come upon the wheat-growing community, have caused every one to look more to stock; and our increasing population, and the constant demand in the neighbouring republic, have at length convinced our farmers that if they mean to keep pace with the times they must adopt a more generous system towards the land, and, by better farming and stock-raising, secure better general returns from the farm in cattle and stock, which will naturally be accompanied by larger and better yields of seed grain crops as they may be able to raise them in future rotations.

Entomological Society of Canada.

The second annual meeting of the above Society was held in the Council Chamber of the Canadian Institute, on Tuesday, June 14th, at 3 o'clock, p.m., the President, Prof. Croft, in the chair. After the minutes and some other routine business had been disposed of, the Secretary's report was read, which showed a considerable accession of members and a very prosperous state of the Society generally.

The Committee on Lepidoptera reported the publication of a catalogue of all the known Canadian Butterflies and Sphinxes. Copies of this catalogue will be forwarded to members immediately.

The Committee on Coleoptera reported that consi-

derable progress had been made in the determination of species, etc., though not sufficient to warrant the publication of a catalogue as yet.

The Curator reported that the resolution passed at a former meeting relative to the apparatus required in collecting and preserving insects had been acted upon, and that spec. cork, entomological pins, etc., can now be had through the Society at cost prices.

The following donations were received, and the thanks of the Society tendered to the donors:—A valuable box of Coleoptera and Lepidoptera from the Entomological Society of Philadelphia, numbering 210 specimens; from the Quebec Branch, 77; from the Curator, Mr. J. Hubbert, 328; from Dr. Cowdry, York Mills, 140; from Mr. W. Saunders, London, 25; from Rev. W. F. Clarke, 29, including some very valuable Chinese specimens; from Mr. F. Turton, London, 18. Committees were appointed on each of the orders of insects, with instructions to pay special attention to those species destructive to vegetation, and report progress at the next annual meeting or earlier if required. A Committee was also appointed to obtain information relative to the silk-producing moths of Canada. The following officers were elected for the ensuing year:—President, W. Saunders, Esq., London; Vice-President, Rev. Prof. Hincks, F.L.S.; Secretary and Treasurer, Rev. Chas. J. S. Bethune, M.A., Cobourg; Curator, J. Hubbert, Esq., M.A. Prof. Croft called the attention of the meeting to the unusual abundance of *Clytus flavosus* about Toronto during the past two seasons, and stated that the larva of this beetle had proved most destructive to the acacias in and about the city. Specimens of rare insects were exhibited and commented upon by Dr. Morris, Prof. Croft and Mr. Saunders. Attention was called to THE CANADA FARMER as a suitable medium for communications of a practical nature, especially in reference to insects destructive to vegetation. The hope was expressed that the members of the Society would aid in filling the entomological department of the FARMER, with information as to the insect tribes injurious or beneficial to man.

Papers were presented from Professor Croft on *Gastropacha vellata*; from Mr. Hubbert, on the geographical distribution of the Dipterous faunas of Europe and America; and from Mr. Saunders, on the Diurnal Lepidoptera of Canada. The Society then adjourned until half past nine next day, when the members took an insect-collecting excursion on the Humber plains. For an account of this excursion, we refer our readers to a communication kindly furnished by one of the party, which will appear in our next issue.

THE WEATHER AND CROPS.—“A Canadian Farmer thus writes from Derby, June 10, 1861:—“The spring here was, as in other places, rather late and backward for getting in crops, and a considerable portion of them were put in in rather indifferent condition, but notwithstanding all this, they came up strong and healthy-looking in the blade, and during the fortnight of warm weather in May made very rapid progress. Since then the weather has been cool and dry, with very severe frost almost every night. It is as yet difficult to state with any degree of certainty the amount of damage done, but it is no doubt considerable. The wheat on new land is in many spots entirely cut down, which at this late season of the year must very materially injure the crop, although it should again sprout from the root. The barley appears to have suffered to some extent; on ploughed land the top blades only are affected. The timothy, on meadows that were “seeded down” with the first crop and not ploughed, I, alas, I think, suffered severely, although the blade looks green. Upon examination, the heart of the stem and newly-formed head are found to be quite black, and will therefore never shoot out, as was the case the year before last, and also some five or six years ago. This must necessarily reduce the yield of hay in this part of the country very materially. Clover meadows look dark and healthy, although rather late, and the probability is that they will be rather under than over an average crop, but in this Canada of ours a copious shower of rain, followed by warm weather, works such wonders, that I think there is still reason to hope that the crops, as a whole, may realize reasonable expectations.”

The Guelph Advertiser learns that the hay crop promises to be rather light.

The Brampton Times states that the midge is committing serious depredations in Beeswing.

AGRICULTURAL MUSEUM.—The Secretary of the Board of Agriculture requests us to acknowledge, on his behalf, the receipt some few weeks back, of a box containing a beautiful specimen of white gypsum rock in its native state, together with some interesting and curious statistics. He has not yet been informed, however, to whom the thanks of the Board are due for these contributions to the museum.

THE FRUIT GROWERS' ASSOCIATION OF UPPER CANADA.—We have had frequent occasion to refer to the valuable report published by this Association. It contains information from nearly every county concerning the various kinds of fruits that are usually cultivated, and should be in the hands of every farmer who wishes to grow fruit of any description. A copy will be sent by the Secretary, Mr. D. W. Beadle, of St. Catharines, to any one sending him a ten cent postage stamp, together with the address to which he wishes the report sent.

WHITE WILLOW FOR HEDGING.—We would call the attention of our readers to the advertisement of E. S. Pike, of Painesville, Ohio, in reference to the White Willow, which will be found in another column. This hedge plant is coming into use in various parts of the Northern States, and is thought to be equally adapted to Canada. From the strong recommendations of it which have come under our notice, we entertain the hope that it may prove the thing that is wanted to supply a long-felt want. It is our intention to embrace an early opportunity of inspecting some of the White Willow hedges across the lines, when our readers shall have the benefit of our observations. Meantime, we trust some of our enterprising farmers may be induced to give this hedge plant a trial.

TORONTO SWIMMING BATHS.—We advise our country friends when they visit this city, as many of them often do, to take a walk to the new and elegant Bath House, just erected, on Adelaide street, a little west of Yonge street. The enterprising proprietors of this establishment, Dr. Agnew and Mr. Wardell, have had it fitted up in the most commodious and comfortable manner, and have adopted a scale of charges such as brings this healthful and agreeable recreation within everybody's reach. Hot, cold, shower and swimming baths can be taken at pleasure. The arrangements are most complete, both for ladies and gentlemen. The charges are 12½ cents for a single bath, and \$1 for 10 tickets. Season tickets are sold at \$4 for a single ticket, \$6 for a gentleman and lady, and \$8 for a family. Visitors to the city can hardly treat themselves or one another to a greater luxury than that of a good bathe, especially during this excessively hot weather.

TRIAL OF MOWING AND REAPING MACHINES.—We beg leave to direct attention to an advertisement in another column, in reference to a public trial of mowing and reaping machines, to take place in the neighbourhood of Dundas, during the present month, under the auspices of the Provincial Agricultural Association. A number of the manufacturers of such implements have expressed a desire, during several years past, to be afforded the opportunity of such a public competition. They allege, no doubt rightly, that great improvements have taken place in the construction of mowing and reaping machines since a similar trial took place, near Toronto, a few years ago, and that the mere inspection of the different machines on the show ground at the Provincial Exhibition, does not enable the public to form a correct opinion as to the working capabilities of each. The Board of Agriculture, therefore, having made arrangements for practically testing the machines in this way, we trust the meeting will be well attended, both by manufacturers and visitors. It should be understood by manufacturers that this is to be the examination of mowing and reaping machines in connection with the Provincial Exhibition of this autumn, and that no such machines will be admitted to exhibition on that occasion, except those which take part in the approaching trial.

The Woodstock Times states that Mr. Cottle is about to establish a mill for the manufacture of oil and oil cake in the vicinity of that town.



The Apiary.

The Swarming of Bees.

The period of incubation by the Queen commences early in the spring. It is rapidly generative, and when the honey season approaches, the cells are well stocked with eggs, larvæ, &c. At this time the working bees sally forth to labour day after day with untiring assiduity to stock their homes with a winter's supply of provender. During the busy season they intimate a negligence towards the royal blood by packing cell after cell with their wealth, and rapidly contracting the Queen's domains—the cells for her deposits. The breeding space of the hive thus becomes rapidly narrowed, and finally the Queen, having no empty cells, locates in some remote place, generally on or near the edge of a comb, and continues her deposits. The latter, on the edge of the comb, are eaten by the working bees. Thus situated the royal influence of the Queen is limited, and unexerted. The wealth of the community has unsettled the kingdom. The entire swarm seem to be disloyal. It presents the condition of a nation which has lost its sovereign. The working bees, powerful in wealth, construct royal residences, or "Queen Cells," in which they rear Queens; and to be certain lest the royal blood should become extinct. The royal family consists of many Queens, heirs expectant, and when these youthful Queens are hatched the old Queen, jealous of her regal honours, undertakes to destroy her rival Queens. Unable to succeed, as an army of workers surround and defend the young Queens, the old Queen abdicates her throne, and sallies forth from her late dominions, accompanied by her loyal subjects, old and young, whirling and buzzing in dire confusion. After all the disaffected have left the hive they settle with the Queen upon a shrub or a bush. This is what constitutes "swarming."

In swarming, it is believed that a regular and permanent organization is not entirely effected until after the departure of the swarm from the parent hive to cluster in a body, not unlike a mass convention. Immediately on swarming, the greatest tumult and confusion ensues throughout their ranks, at the same time manifesting a disposition to alight sufficiently far from their late abode, so as not to be interrupted or annoyed while completing their organization, and arrangements for their prospective home. Here we notice a striking peculiarity. All the bees that are capable of taking wing, young, middle-aged and aged, (except those that are employed in nursing the young larvæ, brooding over the chrysalis, or are out in the fields,) accompany the swarm to seek their new habitation.

Here is wisdom and order created out of disorder and rebellion. The Author of all things has "most wisely" fixed their dispositions so as to prevent the overthrow of the old colony. A large number of bees are absent in the fields, amassing honey at the time when the swarming takes place. These, no doubt, amid the unsettled condition of home affairs, would join the new colony and leave the parent home unprotected and defenceless. The combs would become despoiled and ravaged by the irruption of those little barbarians—the moth family; the infant Queens would die from want of careful nursing; the germ of a new colony—the larvæ and chrysalis—would be lost in the general wreck, without the protection afforded by these absentees, who, when they return, offer the necessary care to preserve the household with its interests.

When a new colony leaves the hive and goes off without alighting on a shrub or bush, it is, as a general thing, those swarms which hang upon the outside of the hive. It is an unusual occurrence that swarms which hang upon the outside of the hive leave, until they have sent off ambassadors to select a suitable home for their future abode. Now, if bees are hived immediately after they have alighted, or before they have dispatched their agents to select a new tenement, they will not leave at all, if their new residence has been made agreeable, and clear of everything offensive to them, and sufficiently commodious. *Flanders' Nature's Bee Book.*

Bees and Grapes.

Mr. BUCHANAN, a well-known grape grower, addresses the following letter, on the above subject, to the President of the Cincinnati Horticultural Society.

"You have asked me to give, in writing, my experience of the depredations, if any, of the honey bee on the finer varieties of fruit, from bloom to full maturity." During the season of bloom these insects and others of similar habits were considered useful in distributing the pollen from flower to flower, thus assisting to perfect fertilization especially in some varieties of the strawberry. Certainly they do no injury at that period. But at and during the maturity of the finer varieties of thin-skinned fruits, they puncture and feed upon them, particularly the grape. My own and other vineyards suffer every year, more or less, from the honey bee, and I have known persons with small vineyards to be compelled to gather their grapes before they were well ripened, to save them from destruction by the bees.

"On the larger fruits, peaches, apricots, plums, and pears, the hornets, wasps and yellow jackets were the pioneers in puncturing, but the bees follow and perfect the mischief. On the grape they are original depredators. I have never observed cherries injured by them.

"Now, I have no desire to engage in a crusade against this, the most industrious and useful of all insects; but in growing grapes I do not wish to keep bees, nor to have them for near neighbours. I have observed their habits carefully in my own vineyard for the last eighteen years, and universally find them puncturing the perfectly-ripe grapes and extracting the juice. Some years I have estimated my loss from this cause at one hundred to two hundred gallons in my vineyard of seven acres.

"As a preventive, some persons have placed plates or pans with thin molasses in different parts of the vineyard, to feed the bees and keep them off the grapes. I have tried this, and thought it useful. An ingenious German friend of mine told me that to the molasses he added fresh yeast, which, he said, caused such a fermentation in their hives, that in repairing damages to the honeycomb, they had no time left to steal any more grapes that season. This being rather a cruel expedient, I have never tried it."

Italian Bees.

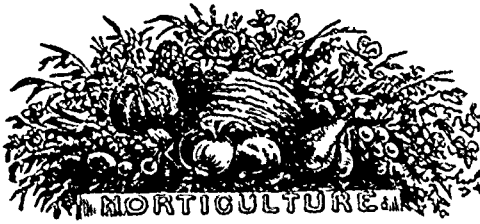
To the Editor of THE CANADA FARMER.

SIR, In answer to a correspondent in a recent number of THE CANADA FARMER, regarding Italian Bees, I would state they are all they are represented to be, and better adapted to our climate than the common kind, being less affected by severe cold. I have had them two years, and am well satisfied of their superiority in every respect over the common kind. They are beautifully marked, having two orange girths around the body. The queens are of a golden colour, and are really handsome, being admired by every one who sees them. Should the season prove favourable, I may have a few queens to spare that are not spoken for. Parties wishing to procure them next summer had better send their orders in this fall. Those received first will be first served.

H. HOLDEN.

NOTE BY ED. C. F.—Our correspondent will oblige us by stating somewhat more in detail the points of superiority of the Italian bees. Will he also give his post office address, so that parties desiring queens may know how to communicate with him?

HONEY BEES.—A writer in the *Country Gentleman* says.—"The following experiments have been tried with good success: A hive that is weak in numbers is made to change place with one that is strong and can spare bees without particular detriment. For instance, you have a stock in the spring that is weak in numbers but otherwise all right. Another stock has abundance of bees. When they are in flight, quietly change the hives to each other's stand. The bees will seek their marked location, and bees enough from the strong stock will enter and remain with the weak one, to reinforce it and make a good stock. In swarming time, if you have a small swarm come off, hive it and place it where you wish it to stand. Two or three days after hiving, change stands with another hive that has refused to swarm, but is "black with overhanging bees." The swarm will speedily become strong in numbers, and if the honey season continues good, will lay in a good supply for the winter. The old stock is not injured, as still enough bees remain to carry on their usual labours. Before changing stands, blow into each hive a little tobacco smoke, to make them fill themselves and mix peacefully. When they find they are away from their own location, and in a strange hive, they seem to take things kindly and make the best of the matter."



Horticulture.

Dicentra (Dielytra) Spectabilis, or the Bleeding Heart.

We present our readers with an engraving of this very beautiful flower, prepared by our artist from a photograph of a specimen grown in Canada. We only regret that it is not possible to show the peculiarly beautiful colouring, as well as the elegant form of this most graceful and pleasing of our hardy flowers; but we are persuaded that it will soon find its way to every garden in Canada, and become one of the cherished attractions of our rural homes. The foliage is of a light transparent green, the flowers bright rosy pink, having a pearl white corolla set with frosted silver, and they hang from graceful nodding sprays by hundreds upon a well-grown specimen.

This charming plant is a native of China, but proves to possess that hardihood which is so essential a quality in the plants that ornament the gardens of Canada, it being able to endure the cold of our severest winters, in any part of the country, without the slightest protection. It is an herbaceous perennial, the foliage dying off to the ground at the approach of winter. In April, or as soon as the frost is fully out, it comes up, and during the latter part of May and first of June it is covered with its hanging heart-shaped flowers. It requires a season of frost in order to its perfect development and those who wish to flower it in pots for in-door decoration, should place it in a cold frame where the weather can act upon it until the holidays, when it can be removed to the house. But the garden seems to be its appropriate place—there it flourishes in all its beauty—the flowers are of a deeper hue and the plant more robust and vigorous. If it be cut down to the ground as soon as the flowering season is over, it will grow up again and give a second bloom. It seems to flourish well in all well-drained soils, and is of such easy cultivation that no one can have any trouble in making it thrive. It can be procured of our nurserymen at prices so reasonable as to bring it within the reach of all.

"Apples in Chateaugay."

We have received an interesting letter from Geo. Young, Ormstown, in which, after remarking that very little attention has been given to the raising of fruit in that section, he says that a few enterprising individuals have planted orchards of choice apples, hoping that with care and attention, they will be able to succeed. "Many of the larger apple trees, in this section, were much injured by the extreme cold of the winter of 1860 and 1861. Exposure to raking winds, had probably much to do with this, for I have noticed some orchards of large trees on high and exposed places, which were almost entirely killed out. When the trees were partially protected by woods, the injury was not so great. Old farmers say that the winters are much more severe now than formerly.

May not this be accounted for, in the continued cutting away of the forests, thus exposing the whole face of the country to the blasts of winter? The Editor of the *American Agriculturist* gives it as his opinion, that the protection of a belt of evergreens to an exposed orchard, is equal to a removal of three or four degrees further south. "The soil," he says "is mostly a stiff clay, very retentive of water" and he believes that when it is not underdrained, the fruit trees sustain much injury from stagnant water. He has noticed that a young orchard invariably makes a vigorous, healthy growth, for four or five years, but when the roots reach the cold, wet subsoil, the trees become unhealthy and show very unmistakable signs of premature decay. The seedling trees he finds more hardy than the grafted, but not more than two fifths bear fruit worth having. The varieties most cultivated are the Fameuse, St. Lawrence, Pomme Grise, and Borassa, yet under the existing mode of culture, these are not hardy enough. He says, "I have high hopes that with under-draining, subsoiling and the protection of a belt of evergreens in the direction of prevailing winds, we will be able to succeed with any of



DICENTRA SPECTABILIS.

these. I have never seen nor heard of a dwarf apple tree in this country. Do you think they would be likely to prove hardier than the standard? There is good reason to hope that by protecting the trees with evergreens, and thoroughly draining the ground, such hardy varieties as those named, will be made to thrive. And inasmuch as the seedling trees prove more hardy, may there not be hope of raising up a race of hardy sorts, which will be able to endure the climate and likewise worth having, by a careful selection of such seedlings as are hardy and good, and propagating from them. The Dwarf apple on the Paradise stock may not be any hardier than the standard, but it is so low it would not be so much exposed to the winds, and the roots do not penetrate so deep into the subsoil; for these reasons we inquired whether they had been planted, thinking it possible they might be made to succeed on that account.

Grape Vines.

To the Editor of THE CANADA FARMER:

SIR, I have read with attention and interest an article in the number for March 15th, on the culture of the grape vine on the "single stem dwarf and renewal system," but unhappily failed to derive from it all the information which I feel to be desirable and necessary. It seems to me that, besides your "whole system in a nutshell," there must be something outside to secure continuance, or there can be no "rotation," and the whole process must speedily come to an end.

I can understand how ten vines may be made to produce fruit and ten wood, and what should subsequently be done with the latter ten. My difficulty is with the former. How am I to proceed with them when they have done with their fruiting, in order to secure a succession of "fresh and vigorous wood?" You say, "The method is simply to fruit the vines in alternate years on a single short cane, and with very short lateral branches, cutting down at the end of the season to two or three eyes, and the following year allowing the strongest one of these eyes to grow, expecting it to bear fruit the next year." Cutting down what? The "single short cane" that has been fruiting? Of that alone you are speaking. But where am I to find in it the two or three eyes to which it is to be cut down, and from one of which the fresh wood is to grow the following year, for fruit the next year? The cane that has just fruited is no longer a cane in the sense in which it was so before; it has eyes no longer; and, unless I am to depend on some twig pushing out at random from the old wood, there must, so far as these vines are concerned, be an end of the matter. And so will it be with the other ten in their season. Pardon me for suspecting that, in writing this sentence, you have inadvertently passed from one kind of timber to another, and thus taken hold of the wrong stick. If so, and if this is to be cut down to two or three eyes, whence is your fruit to grow in the coming season?

Your correspondent W. S. does not supply the deficiency. "Before planting," says he, "cut down the stem to two or three eyes. When the vines break, select the strongest, giving the preference to the one nearest the ground. Pinch off all the others." But what if the strongest, as is very likely to be the case, is not the one nearest the ground? There is in vines a tendency to produce their strongest new wood at an increasing distance from the root. It is desirable to learn how this tendency may be counteracted, and how, on any system, good canes may be constantly obtained not far from the ground. This, however, inpass. 3. "When the leaves fall," W. S. directs to "cut down every other cane, or every other row of canes, as may be determined upon, to within two eyes of the ground, and to cut back the canes intended to be fruited next year to the top of the stake or trellis," &c. He also gives directions under the head of "Fruiting." But when the fruiting is over, what is to be done with the vines which have so fruited? I find no information, and should be glad to have some. The canes have done their duty, and are now old wood. Whence is the new wood to sprig next season? For aught that appears, these vines are defunct. I should be glad, and so probably would your correspondent, J. K., to learn if there are, according to this system, any means, and what means, of resuscitation.

Possibly all the difficulty may arise from my being, as they express it in another land, rather "dull in the uptake." However this may be, I need some further instruction.

St. Andrews, C. E.

H.

NOTE BY ED. C. F.—Will "W. S." be kind enough to tell H. how to find the eyes he is looking for?

Entomology.

Currant Worms.

To the Editor of THE CANADA FARMER.

SIR,—The destruction of the currant and gooseberry bushes in this vicinity is astonishing. A green worm (known here as the "currant worm") in two or three days devours all the leaves. Now, this work of destruction continues because it is not generally known that there is a remedy. Yet such is the case. Obtain of any druggist some powdered hellebore, put it in a pepper-box, and dust it over the bushes, particularly those parts where the worms are located, and they will soon leave; and the best of it is, they will never return. In twenty-four hours after dusting the bushes, you will hardly find a worm. One ounce will do for ten or twelve hills of currant bushes, or double that number of gooseberry or currant trees, and will cost from eight to twelve cents. The hellebore is a powerful poison, and will never fail to kill the worms. No danger need be apprehended from its use, although it may make the person sneeze sometimes while using it. J. H. THOMAS.

Brooklin, C. W.

NOTE BY ED. C. F.—Can Mr. Thomas inform us whether this worm is the one known as the Gooseberry Saw-fly? Perhaps he can send us a minute description of it, accompanied with a drawing. If he has found a certain and cheap remedy for the Saw-fly, he has been able to do what the assembled wisdom of the fruit-growers of Western New York failed to accomplish.

Orchard Depredators.

To the Editor of THE CANADA FARMER:

SIR,—There are in my orchard, and also in some of my neighbours', worms of three different sizes, which are destroying the foliage, and, of course, killing the trees. The first I will mention are about an inch in length, when full grown, and make a home for themselves like a spider's web, going out through the day, and trimming off every green thing where they go. These we destroy by picking off and burning the nest when they are in. The others are not so easily got rid of; they both live in the buds, and, by eating the heart out, cause all the leaves to die. They are from a quarter to half an inch in length. The one is all green; the other is a dark brown, with a black, shining head. By their ravages, last year, they have caused the top twigs of my trees to die. I did not know the cause then, but see it now; therefore I apply to you and your correspondents, through THE FARMER, to get a preventive, because there is no cure, at least I have found no means of killing a large quantity without, at the same time, injuring the trees. I think they hatch from an egg laid by a fly or bug, when the buds are very tender.

The Meadows, G. W.

W. M. S.

NOTE.—Can you send specimens of the bud-eaters?

AN INSECT SAMSON.—Every one that has taken the common beetle in his hand, knows that its limbs, if not remarkable for agility, are very powerful; but I was not prepared for so Samsonian a feat as that I have just witnessed. When the insect was brought to me, having no box immediately at hand, I was at a loss to know where to put it until I could kill it; a quart bottle full of milk being on the table, I placed the beetle for the present, under that, the hollow at the bottom allowing him room to stand upright. Presently, to my surprise, the bottle began to move slowly, and glide along the smooth table, propelled by the muscular power of the imprisoned insect, and continued for some time to perambulate the surface, to the astonishment of all who witnessed it. The weight of the bottle and its contents could not have been less than three pounds and a half, while that of the beetle was about half an ounce; so that it readily moved a weight of 112 times exceeding its own. A better notion than figures can convey will be obtained of this fact by supposing a lad of fifteen to be imprisoned under the great bell of St. Paul, which weighs 15,000 pounds, and to move to and fro upon a smooth pavement by pushing within.—Professor Goss.



Poultry Yard.

Bantams.

No one will dispute that for beauty, and animation, plumage and courage, the bantam is entitled to rank next to the game fowl. All are, or ought to be, of small size, but lively and vigorous, exhibiting in their movements both grace and stateliness. Above all is placed the celebrated and beautiful breed called "Sebrights." This breed, which Sir John Sebright brought to perfection, is very small, with unfeathered legs, and a rose comb and short hackles. The plumage is gold or silver spangled, every feather being of golden orange or of silver white, with a glossy jet black margin. The cocks have the tail folded like that of the hen, with the sickle feathers shortened straight or nearly so, and broader than usual. The term *hen-cock* is, in consequence, often applied to them; but although the sickle feathers are thus modified, no bird possesses higher courage, or more gallant carriage. The attitude of the cock is, in truth, singularly proud; and he is often seen to bear himself so laughingly, that his head, thrown back as if in disdain, nearly touches the two upper feathers—sickles they can scarcely be called—of his tail. Half-bred birds of this breed are not uncommon; but birds of the pure breed are not to be obtained without trouble and expense. Indeed, some time ago, it was almost impossible to procure either a fowl or an egg. There is also another beautiful variety—the game bantam. Gold and silver Sebrights should be of very small size, with perfectly clean legs, strutting carriage; head and tail thrown back till they almost touch; wing drooped, almost reaching the ground.

In an aviary at Christchurch, Hants, belonging to Mr. Hart, the naturalist and taxidermist, are three mule hybrids between the pheasant and bantam. Their plumage is very beautiful, partaking of both parents. The birds are quite tame.

GAPES IN CHICKENS.—This complaint is supposed to arise from a parasite worm in the windpipe of the fowl. The best remedy is to extract the worms, which may be done by taking a quill from a hen's wing, and trimming off the feathers to within half an inch of the centre, pointed at the bottom. Put this down the windpipe, twist it round two or three times, and when drawn out some of the worms will be found adhering to the quill. If necessary, repeat the operation, but usually once is enough, as the others becoming loose, are ejected generally by the fowl itself.

ROUP AND LICE ON FOWLS.—To prevent or cure roup, and drive lice from fowls, feed them flour of sulphur, best kind.

To a gallon of boiling water add two large spoonfuls of flour of sulphur, and then thicken with corn meal, or corn and oats ground together. May be fed warm or cold, but not hot. Feed once a week. Keep the hen house clean and sweet, well ventilated, especially in summer and fall, have plenty of dry lime always in the house, and daily throw over the droppings a few shovels full; 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 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.

FOOD AND TREATMENT FOR HENS.—Linsced meal is found to be a great promoter of egg laying. Mixed with scalded meal or shorts, or with sour milk, it is readily eaten, and is a good substitute for animal food and insects. Hens like Indian corn better than any other grain, and it is their cheapest food. For confining hens, a covered room with a dry earth floor,

is much better than an open yard, which the rain keeps in a filthy state most of the time. With sand to roll in, hens may be confined under cover the whole season. Half an hour before sunset they should be let out to range over the yard and garden. They will then be too busy picking grass, gravel, etc., to scratch and do mischief, being always in a hurry to return to the roost before twilight. Hens thus kept will more than twice pay for their keeping, if not too old to lay well. Two or three days imprisonment in a coop will break up Black Spanish hens from setting, and they soon commence laying again if properly fed. It is only profitable for a villager to raise a few early chickens to renew his laying stock, as chickens are great and increased feeders, eating when half grown much more than old fat hens.—Exchange.

Veterinary Department.

Shoulder-slip in Horses.

A VERY common disease of young farm horses is one known as shoulder-slip. This in many parts of Canada is called "Sweenie." This disease arises from a sprain of the muscles of the shoulder, especially those situated on the external surface of the scapula or blade bone. The muscles from being sprained gradually waste, until a hollow will be observed extending from the upper to the lower part of the shoulder. In other cases, when the sprain is severe, the shoulder joint appears at every step to slip outwards, and often leads to the belief that the shoulder joint is dislocated. Such, however, is not the case, but the slipping outward is caused by the external muscles being injured, incapable of performing their functions, and not able to counter-balance the contraction of the uninjured muscles situated upon the inner side of the blade bone. Shoulder-slip occurs most frequently in young horses and often results from their placing their feet awkwardly when first put to ploughing. Those horses are especially liable to it who work with energy, and whose frames are but imperfectly consolidated. At times the first symptoms observed is the gradual wasting of the muscles, which in many cases increases to such an extent that the ridge of the shoulder blade may be readily felt. In the majority of cases the shoulder will be observed stiff and slightly swollen. This symptom soon disappears and the muscles begin to waste. This spring we have observed a great many young farm horses affected with shoulder-slip, caused in a great measure by the horses being rashly put to hard work and when not in good condition to stand severe exertion. It is not uncommon for young horses to be kept constantly in the stable during the winter, and in a backward spring like the past, when every available hour is required to push forward the operations of the farm, they are at once put into the plough or harrow without any preparations to put them in anything like working condition, and forced to do as much work as an old and seasoned horse. The muscles are soft and flabby and consequently are liable to be sprained.

Shoulder-slip in general is easily treated, but necessarily requires a length of time to restore the parts. In order to a cure perfect rest must be allowed. In the first place hot fomentations are useful. In about two or three weeks a stimulating liniment or mild blister should be applied, and repeated at intervals of ten days or two weeks. The animal should be well fed, and after a time allowed gentle and gradually increasing exercise. Severe irritant dressings, such as are often had recourse to, are not needed, since mild applications are more efficacious and certainly more natural. It is not uncommon to observe blemishes on the shoulders of horses caused by the irritant dressings being too strongly applied for the cure of this disease. "Sweenie" is the name generally applied to this wasting of the muscles, and almost every horseman has a specific for its supposed cure. Many a poor animal is subjected to a species of torture by the application of these nostrums. In old horses the muscles of the shoulder sometimes waste from prolonged lameness in other parts of the leg and foot. This is a marked symptom of a common disease of the foot known as navicular disease, and arises from the animal in trying to save his foot as much as possible, failing to throw these muscles so forcibly into action, and as a consequence they atrophy. In such cases it is useless to direct treatment to the shoulder.



The Household.

Bread and Bread-Making.

We are indebted to Mr Geo. Longman, of the Toronto Mechanics' Institute, for the following article which he sends in reply to the enquiry made by "A Subscriber," in our last issue:—"Perhaps some of your correspondents could tell me how to make Brown (or Graham) bread?" This article is taken from the *Herald of Health*, published by Dr. Trall, New York, and was prepared for that paper by Mrs. Jones, Matron of the Hygienic Institute in that city.

As by common consent bread is the "Staff of Life," the question naturally arises, "What are the best materials of which it can be made, and the best methods of making it?" The common white flour, tormented bread, which is so universally used, is very far from being the best as an article of diet. The use of fine or bolted flour, has opened upon the community a perfect "Pandora's Box" of evils in the shape of constipation and the ten thousand ailments to which it gives rise. By the separation of the bran from the flour, not only a portion of the grain necessary to the proper distension of the stomach and bowels is removed, but it has been repeatedly proved by chemical analysis that the bran is as rich, or richer, in nutritious substances than the flour. These are not merely the "notions" of "hair-brained" "bran bread," "crazy fanatics" but facts which recommend themselves to the common sense of all who will investigate, which have been proved by the experience of thousands, and which have been demonstrated by the highest scientific authorities, a few of which we quote:—

Dr. Johnston, M.A., F.R.S., F.G.S., &c., in his *Chemistry of Common Life*, says:—"The bran or husk of wheat, which is separated from the fine flour in the mill, and is often condemned to humbler uses, is somewhat more nutritious than either the grain as a whole, or the whiter part of the flour. The nutritive quality of any variety of grain depends very much upon the proportion of gluten it contains; and the proportions of this in the whole grain, the bran and the fine flour respectively, of the same sample of wheat, are very nearly as follows."

Whole grain	12 11	ct.
Whole bran (bran and husk) ..	14 19	"
Fine flour	10	"

If the grain, as a whole, contains more than twelve per cent of gluten, the bran and the flour will also contain more than is above represented, and in like proportion. The whole meal obtained by simply grinding the grain is equally nutritious with the grain itself. By sifting out the bran we render the meal less nutritious, weight for weight, and when we consider that the bran is rarely less, and is sometimes considerably more, than one-fourth of the whole weight of the grain, we must see that the total separation of the covering of the grain causes much waste of wholesome human food. Bread made from the whole meal is, therefore, more nutritious; and as many persons find it a more salutary food than white bread, it ought to be more generally preferred and used."

Prof. Youmans, author of the standard works on *Chemistry, Household Science, Chemical Chart, &c.*, says:—"The grain of which bread is made consists mostly of starch, gluten, and sugar. The lignous husk of grain produces the bran, while the flour is formed by the interior white portions. The gluten is tougher and more difficult to grind than the starch, hence the finest and whitest flour, obtained by repeated siftings, contains a larger proportion of starch, the darker coloured flour being richer in gluten, and as the nutritive properties of flour are in proportion to the nitrogenized element (gluten,) the latter kind will make the most nutritious bread."

The *Delicate Recruit*, in an article entitled "Frauds in Food," says:—"Many of the most important elements of our blood, brain and bone, are found in the greatest abundance in the coloured, outer part of the wheat, which we deem fittest for pigs, so we fatten them and suffer ourselves. The difference in nourishing properties between whole meal flour and very finely dressed flour amounts in many cases, to fully one third."

Dr. Bennett says:—"Now, if there is a well established fact emanating from chemical analysis, it is this: that superfine or very finely bolted wheat flour will not alone sustain animal life. This fact has been repeatedly demonstrated by Magend, the greatest physiologist that ever lived. Having ascertained that the muscular and nervous tissues, including the whole brain or cerebral mass, was composed of nitrogenous matter, he readily concluded that starch, or the fecula of wheat, which not alone sustains animal life, for the reason that it contains, not a particle of nitrogenous matter. Consequently, he found by experiment, that animals fed exclusively on very finely dressed flour, died in a few weeks, whereas those fed on the unbolted thrived."

Dr. John Ellis, *Professor of the Principles and Practice of Medicine*, says:—"The worst case of scurvy I ever had to treat, occurred in a little girl, five or six years old, who lived entirely on toast made of superfine flour."

The second objection to the common method of bread making is the fermenting process to which it is subjected. Fermentation as all persons at all conversant with chemistry know, is, as described by Professor Johnson:—"The consequence of a peculiar action, which yeast exercises upon moist flour. It first changes a portion of the starch of the flour into sugar, and then converts this sugar into alcohol and carbonic acid, in the same way as it does when it is added to the worts of the brewer or the distiller. As the gas cannot escape from the glutinous dough, it collects within it in large bubbles, and makes it swell, till the heat of the oven kills the yeast plant, and causes the fermentation to cease."

Professor Youmans says:—"If the fermentation proceeds too far, the dough becomes sour; that is, the vinous passes into the acetous fermentation, the alcohol changes to vinegar."

Who would think of taking a half decayed apple or potatoe and subjecting it to the action of heat to stay the process of putrefaction, and then placing it before human beings as food? And yet this is precisely what is done by fermentation. Take a common bread "sponge," as it is called. Let it remain thirty-six hours longer than usual, and what is the result?—a sour almost putrid mass. This process of putrefaction commences the moment the yeast is added to moist flour, and is only checked by the action of heat. Baker's bread is often still more objectionable, from the fact that an inferior article of flour is used which is disguised by the introduction of alum and other chemicals. Soda and saleratus, in all their forms, are decidedly injurious, and when introduced into bread, biscuit and other articles of food, are a prolific source of disease.

Having demonstrated the effects of bad material and bad management of it we will consider what are the best materials and the best methods of preparing and cooking them. Bread, to be the most wholesome and palatable, should contain but two ingredients.—unbolted flour made from the best quality of wheat or other grain, and pure water. The following, so far as we know, are the preferable methods of making it arranged in the order of their respective merits:

UNLEAVENED BREAD.

No. 1.—**GENS.**—Stir together Graham flour and cold water to about the consistency of ordinary cupcake batter. Bake in a hot oven in small tin patty pans, two inches square and three-fourths of an inch deep.

NOTE.—This makes delicious bread. It may be improved by beating the batter in the same manner as eggs are beaten, for five, ten or fifteen minutes; the longer the better. No definite rule as to the proportions of flour and water can be given, owing to the difference in the absorbing power of various brands of flour.

Many persons have failed of success in making this bread from neglecting one very essential requisite—the size of the pans in which it is baked. If they are larger than the dimensions given, the bread will be heavy. If smaller, it will be dry and hard.

But made this size, and filled evenly full, if the batter is of the right consistency, and the oven hot, they will rise one half, and be almost as light and porous as sponge cake.

No. 2.—**DIAMONDS.**—Pour boiling water on Graham flour—stirring rapidly till all the flour is wet. Too much stirring makes it tough. It should be about as thick as can be stirred easily with a strong iron spoon. Place the dough with plenty of flour upon the moulding board and knead it for two or three minutes. Roll out one half an inch thick, and cut it in small cakes or rolls. If a large quantity is required, roll about three-fourths of an inch thick, and cut with a knife in diamond shape. Bake in a very hot oven forty-five minutes.

NOTE.—The names by which these two kinds of bread are known in our Institution are merely arbitrary. Years ago the guests of the house christened the 2 diamonds, from their shape. No 1 being of quite recent introduction, and, as many think, much superior, some facetious patient, on their first appearance suggested "Gems," as an appropriate name, and, accordingly, gems went the round of the tables till the roughest became freely attached to them.

No. 3.—**GRAHAM BISCUIT.**—Make Graham mush as for the table. When cool, mix with it Graham flour sufficient to roll well. Knead for a few minutes, roll three-fourths of an inch thick, cut with a common

biscuit cutter, and bake in a hot oven from thirty-five to forty-five minutes.

No. 4.—**GRAHAM BISCUIT**—(another form.)—Stir into cold water Graham flour enough for a rather soft dough; knead it for five or ten minutes, and bake the same as No. 3.

NOTE.—When these have become a little dry or hard, cut in small pieces, cover with cold water, soak till thoroughly soft, when the water should be all absorbed. Strain through a colander, mix Graham flour sufficient to roll, and bake in the same form as at first. This is even superior to the original bread.

No. 5.—**WHEAT MEAL CRISPS.**—Make a very stiff dough of Graham flour and cold water; knead thoroughly, roll as thin as possible and bake for twenty minutes in a hot oven.

No. 6.—**GRAHAM CRACKERS** are made by mixing cold water and Graham flour together, and kneading very thoroughly. They can only be well made by the machinery used in cracker bakeries.

RYE AND OATMEAL BREAD.

Unbolted rye or oatmeal, prepared after receipt No. 4, makes excellent and wholesome bread for those who like the peculiar flavour of these grains.

CORN CAKES.

Pour 1 quart boiling water on 1 quart corn meal, and stir quickly. Wet the hands and form into small round cakes one-half inch thick. The addition of a few raspberries, huckleberries, or any sub-acid fruit, is a decided improvement. Sweet apples, chopped fine, are also excellent.

CORN BREAD.

Stir thoroughly together 1 quart sweet milk, and 1 quart corn meal. This is also improved by beating. Bake in a deep platter, in a hot oven, about forty-five minutes. These proportions will not hold good in all cases owing to the difference in meal. A few trials, however, will enable any one to judge as to how much of each is required.

In the use of unbolted flour persons need not be restricted to the modes of preparing it given above; they may use yeast, soda, salt, saleratus or other compounds, and have bread proportionally better than fine flour bread mixed with the same ingredients. However, we are satisfied that, those who will give the pure unleavened bread a fair trial will have little inclination to return to the use of the former, as they will find the other more palatable, nutritious, wholesome, and economical.

Preparing Salted Meats.

To the Editor of THE CANADA FARMER:

Sir,—Herewith I give you my method of preparing salted meats for cooking:—Take your pork or beef from the brine, after rinsing it in clean cold water, place it in a large vessel—an earthen crock is preferable—then cover it with cold water, allowing it to freshen at least two days, changing the water on it morning and evening in summer, and mornings only in winter; take your meat out of the water and hang it in a cool, dry place, and it is ready for boiling, roasting or frying. This is much better than the extravagant method of par-boiling every time you wish to use it, and throwing the rich liquid in the slop pail, or throwing it away altogether, as I have known some wasteful persons do. Mrs. Z.

To PROTECT DRIED FRUIT FROM WORMS.—It is said that dried fruit put away with a little saffras bark (say a large handful to a bushel) will keep for years, unmolested by those troublesome insects, which so often destroy hundreds of bushels in a season. The remedy is cheap and simple.

To CLEAN PAPER HANGINGS.—Put a clean, soft bag or an old pillow-case, over a new broom, and gently, brush the dust from the paper; then take crusts of stale bakers' bread, and wipe it down lightly, beginning at the top. If you rub it the dirt will adhere to the paper. After thus brushing all around the upper parts of the walls with the bread, begin just where you left off, and go around again. Do thus until you have finished the paper. The dust and crumbs will fall together. Whenever a room is cleaned it is a good way, before the paint and windows are washed, to wipe the paper with a covered broom, as above directed.

To WASH FLANNEL WITHOUT SHRINKING.—Make a strong suds and put in your flannel or white woollen stockings, while the water is boiling hot. Then squeeze and pound them with a pestle till the water is cool enough to put your hands to the work. You will find that there is little need of rubbing. Rinse in water as hot as the hands will bear. If there is a little soap remaining in the rinsing water, it is all the better. The sooner they are dried the less they will shrink. This method, from an old housekeeper, is sure to prove just the right way, if strictly followed.—Ploverman.

Miscellaneous.

How can Farming be made more Attractive?

The following are some of the scraps and birds, drawn at various times from the discussions of the Wapping (Mass.) Farmers' Club:

1. By less hard work. Farmers often undertake more than they can do well, and consequently work too early and too late.

2. By more system. The farmers should have a time to begin and stop labor. They should put more mind and machinery into their work. They should theorize as well as practice, and let both go together. Farming is healthy, moral and respectable; in the long run it may be made profitable. The farmers should keep good stock and out of debt. The farm is the best place to begin and end life, and hence so many in the cities and professional life covet a rural home.

3. By taking care of health. Farmers have a healthy variety of exercise, but too often neglect cleanliness, omit bathing, eat irregularly and hurriedly, sleep in ill-ventilated apartments, and expose themselves to cold. Nine-tenths of the human diseases arise from colds or intemperance. Frequent bathing is profitable, so is fresh air, deliberation at the dinner table and rest after a meal.

4. By adorning the home. Nothing is lost by a pleasant home. Books, papers, pictures, music and reading should all be brought to bear upon the indoor family entertainment, and neatness, comfort, order, shrubbery, flowers and fruit should harmonize all without. Home should be a sanctuary so happy and holy that children will love it, women delight in it, manhood crave it, and old age enjoy it. There would be less desertions of old homesteads if pains were taken to make them agreeable. Ease, order, health and beauty are compatible with farm life and were ordained to go with it.

Agricultural Papers.

The farmer's newspaper is, in our country, almost the sole guide of the farmer's labour. It has thus far performed the part of college and teacher. It constitutes a large portion of the literature of that profession which all men love, and upon which all men depend, directly, or indirectly for their subsistence. There is, in its pages, a common ground, where all conflict ends, a platform upon which all can stand, a creed which all can believe; and who does not know the reward and praise and satisfaction with which the unhappy voyager across the stormy surface of a partisan press, finds repose in these columns, which remind him of the calm and steady and luxuriant promises of nature—of growing crops, and of animals devoted to the "service of man?" and more, who does not know that whatever progress has been made in agriculture has received its stimulus and direction from these same columns. By suggestion, by investigation, by records of experiments, by statements of successes, has the agricultural mind been stimulated and informed. When larger and more ambitious designs accomplish in a more imposing manner what the agricultural editor is quietly doing every week, we shall be sure that something positive is done in the way of agricultural education.—Dr. Loring.

Farming in the County of Peel.

To the Editor of THE CANADA FARMER:

SIR,—In this neighborhood our motto has been,—"large grain crops and small stock." On 100 acres our average crops have been 18 acres fall wheat, 6 spring wheat, 6 oats, 6 barley, 6 peas, and 1 acre in potatoes and other roots. We would have 18 acres summer fallow, and the remainder of the land in meadow and pasture. We would manure our summer fallow and plough them three times in the season. If the Canadian thistles were numerous we would run the cultivator over them two or three times, or give them a fourth ploughing, which we thought to be of far more worth than anything we could do with the cultivator. The average quantity of fall wheat seed per acre, two bushels; average yield thirty bushels. This we found paid us very well. But latterly, for some unaccountable cause or causes, there has been an apparent falling in our fall crops, so that now we do well if we get 18 bushels per acre, and that a very poor sample. This your readers will at once see is

not remuneration for the labor, and consequently I have been induced to adopt another plan of farming. Last fall I had only 11 sheep. This number I increased to 50. I have fed them on pea-straw, hay, and turnips during the winter, and they are in good condition to go on the pasture. Our crops for this season shall be as follows: 7 acres fall wheat, 10 oats, 10 peas, 6 spring wheat, 6 barley, $\frac{1}{2}$ acre potatoes. We will have 15 acres meadow and 15 acres pasture land. The field I should have had in summer fallow is last year's pasture—it contains 10 acres. This I will let remain in pasture until the 1st of July; I will then break it up, give it a good manuring, ploughing and harrowing, and sow part in turnips and part in vetches. The idea is to render the land fit for a grain crop next spring, and to obtain pasture for the stock late in the fall. The peas we will cut a little on the green side. We think by this means to obtain a cheap and wholesome food for the stock of sheep which by next winter may be increased to one hundred. Any advice respecting this plan would not only be gladly received by me but also by my neighbours. J. W. W.

NOTE BY ED. C. F.—The above letter has been accidentally mislaid, so that it is too late to tender counsel for the present season. Our correspondent is working in the right direction, and we shall be glad to know his experience hereafter.

Plan of Root-House.

To the Editor of THE CANADA FARMER:

SIR,—In No. 11, CANADA FARMER, "W. W." wishes to know how to build a good root-house. I will, as briefly as possible, describe mine, in which I have for several years kept all kinds of roots with great success: It is 60 feet long, 15 feet wide. The earth (sand) is excavated to the depth of 3 feet. The wall of stone is then built 6 $\frac{1}{2}$ feet high. The joists laid across rest 6 inches on each wall, which is built all round them, and one foot above. The earth is banked up to the wall, and a loose floor laid down, covered with saw-dust. A shop 6 feet high is built over all,—no frame, simply scantling, with cellar beams to keep all together. This is extremely useful for all kinds of implements or tools. By removing the saw-dust and loose plank, the root-house can be filled from above. Beneath the wall is so built as to allow of two doors in the centre, with a small four-light window of 8 by 10 glass, under which is kept the root-cutting machine. The house is divided into four bins by putting a row of scantling post in the centre, under each joist, to keep them stiff; boards are nailed to them. I have four chimneys, one for each bin, one end, 8 by 8 inches, opening this the floor to the ceiling of the root-house; the other end, 2 by 2 inches, opening just under the roof of the shop. These chimneys I consider the great secret of root-keeping. The draft is great and unceasing, relieving the cellar of all foul air. For the benefit of "W. W.," I may add that I have had at one end 2,000 bushels of turnips, with 1,000 bushels of carrots, besides potatoes and beets at the other end, and not lost a half bushel by decay in the whole cellar. I am now, 21st of June, feeding good sound carrots to my horses. H. P. C. H.

How to get Rid of Rats.

To the Editor of THE CANADA FARMER:

SIR,—For some years I was considerably annoyed with rats. I tried various "vermin-poison," traps, &c., with very little success, until I thought of a mode which we adopted for destroying dogs that used to hunt our rabbit warren in the old country. So I got a quantity of broken bottles and window-glass, and with a hammer and an old anvil triturated it pretty fine—(a stone would do to pound the glass on)—I then sifted the coarse part out, and mixed a cupful of the fine with a cupful of flour, and another of oatmeal, and scenting it with a few drops of essence of aniseed to attract them, I placed it on boards in the cellar, &c. They eat it up so fast that one of the family observed, that "instead of poisoning it must be fattening them;" but a few days told a different story. The last mess served for them remains untouched yet, though put down last fall, and no appearance of rat or mouse, living or dead, since. Neither have we noticed any smell, or blue-bottle (meat) flies, as there would have been had they died on the premises. It was a happy riddance, and as there may be some others who would like to get delivered from the abominable nuisance, they may have the privilege of trying it, as I don't intend patenting it. The mixture must be kept from children, dogs, and other silly animals, as it would kill them as well as the rats. Perth, C. W., June 13, 1864. J. R.

Rules for Measuring Hay and Wheat.

To the Editor of THE CANADA FARMER:

SIR—In the eighth number of THE CANADA FARMER a correspondent asks, "How is hay in the bag or stack measured?" Also, how to measure "wheat in a granary." For hay, multiply the length, breadth, and height into each other; if it is well settled, five hundred and twelve cubic feet will make a ton. For wheat, multiply the length, breadth, and depth of inches into each other, divide by twenty two hundred and eighteen inches and the quotient will be the number of bushels. R. H. S.

Hibbert, May 16, 1864.

EDITORS should be able to live cheaply. For they very often get bored (board) for nothing.

A dog in Boston has been named Quota, because he never seems to be full.

The San Francisco Sanitary Fair is to have a cheese which will weigh 3,500 pounds.

COST OF CULTIVATING LAND BY STEAM.—A Mr. Smith, of Woolston, England, has published an account of the cost of cultivating land by steam for eight years, in which he says that the cost of preparing land for roots was, with steam, \$2 88; with horses, \$10 03; for barley two years, \$2 16 with steam against \$5 05 by horse-power: four years for wheat, \$50 20 by steam against the same for horse-power, and foots up a total for a number of other articles, which shows a gain of 200 per cent. in favor of steam. The writer says also that besides the economy of the plan he had much better crops.

TO MEASURE AN ACRE.—We find the following going the rounds. It may be useful to some of our readers. "Land, 30 $\frac{1}{2}$ square yards make one square rod: 40 square rods make one square rod; 4 square rods 1 acre; 640 acres, 1 square mile; 4,800 square yards, or 160 rods, make 1 acre. In measuring an acre by yards, the usual practice is to trace off 70 yards in length and 70 yards in width. This is a rough way, may be considered near enough for practical purposes; but as 70 yards either way make 4,900 square yards, it exceeds one acre by 60 yards. To determine an accurate acre it may be measured 70 yards in length by 69 1-7 yards in width. The same result may be arrived at by measuring 220 feet in length; and 108 feet in width, or by measuring 73 $\frac{1}{2}$ yards in length by 66 yards in breadth."

GUNNY BAGS.—The inquiry is often made, "What is a gunny bag?" The *London Mechanic's Magazine*, tells us all about it: It is a bag made from the coarse spun fibres of a plant which grows in India, of which there are many varieties. On the Coromandel coast this plant is called *goni*, and "gunny" is a corruption of this name. The cultivation of the *chuti*, *jute*, or "gunny" has been carried on for centuries in Bengal, and gives employment to tens of thousands of inhabitants. It is said that three hundred thousand tons of *jute* are grown in India, of which one hundred thousand tons are exported as gunny bags, besides one hundred thousand tons in a raw state. The gunny bag is used for sugar, coffee, spices, cotton, drugs; indeed almost every article which we pack in dry casks and boxes, is, in the East, packed in gunny bags. It is also made into mats, carpets, ropes, paper, and various other articles.

HIGH FARMING.—I have just been reading an account of a Fen farm, situated in one of the dreariest commons in England, and which, from producing nothing but furze and ling, has been made to yield crops of 40 bushels of wheat, 45 bushels of barley and 1,200 bushels of mangold wurzels per acre! The farm contains 500 acres. "On this small, light sandy farm," says the editor of the *Agricultural Gazette*, "a herd of 50 to 70 cows is milked for the London market, a dry flock of Hampshire sheep, varying from 200 to 400 head, is fed, and hogs ranging in number from 1,000 to 2,000 have been fattened annually up to the average weight of 10 to 20 scores apiece." In addition to this from 16 to 18 farm horses are kept, and the labour bill amounts to over \$5,000 a year. Of course large quantities of oilcake and grain are purchased for the cows, sheep and pigs, and it is the enormous quantity of rich manure so obtained that has made the farm so highly productive. This is "High Farming," but it is not "fancy" farming. It is a rented farm, and the occupier does nothing for mere show and parade. He carries on the farm simply for profit.—*Genesee Farmer*.

THE FARMER'S CAUSE.—A local contemporary gives the following: "We believe in small farms and thorough cultivation. The soil loves to eat as well as its owners, and ought therefore to be nurtured. We believe in large crops, which leave the land better than they found it, making both the farm and the farmer rich at once. We believe in going to the bottom of things, and therefore in deep plowing, and enough of it—all the better if with a subsoil plow. We believe that the best fertilizer of any soil is the spirit of industry, enterprise and intelligence, without this, lime and gypsum, bone and green manure, marl or plaster, will be of little use. We believe in good fences, good barns, good farm houses, good stock, and a good orchard. We believe in a clean kitchen, a neat wife in it, clean cupboard, dairy and conscience. We firmly dis-believe in farmers that will not improve, in farms that grow poorer every year in starved cattle, in farmers' boys turning into clerks and merchants, in farmers' daughters unwilling to work, and in all farmers who are ashamed of their honorable vocation."

Markets.

Toronto Markets.

"CANADA FARMER" Office, June 23, 1864.

Flour dull and lower, Superfine, nominal at \$3 50 to \$3 75 per barrel; Extra \$4 20 to \$4 40; Fancy none in market; Superior \$4 75 to \$5 10; Bag Flour \$4 00 per 200 lbs.
 Full Wheat, weaker, 80c to 85c for common to extra per bushel.
 Spring Wheat 75c to 80c per bushel.
 Barley nominal at 50c per bushel.
 Oats in good supply at 35c to 38c per bushel, for common to good, 40c to 41c for good to extra, occasionally a load brings 42c to 46c.
 Peas 45c to 50c per bushel for common to extra.
 Hay \$9 00 to \$11 00 per ton. Straw \$5 to \$7 per ton.
 Hides (green) at 5c per lb., trimmed, 5c to 8 1/2c per lb.
 Calfskins at 8c to 10c per lb. Sheepskins at \$1 90 to \$2; the latter for extra. Wool, 44c to 46c per lb.
 Coal \$7 25 to \$9 per ton. Wood \$4 25 to \$4 50 per cord.
 Provisions—Hams 10c to 11 1/2c per lb. white. Sides 10c to 11c per lb. whole sale, 8 1/2c to 10c retail. Cheese, wholesale 11c to 11 1/2c per lb.; retail 14c per lb.
 Beef—Inferior \$5 to \$5 50 per cwt., extra \$6 to \$6 50 per cwt. whole sale, 7c to 9c per lb. for ordinary, 10c to 12 1/2c for superior, retail.
 Cattle scarce, at \$4 50 to \$6, upwards.
 Sheep, clipped, \$3 to \$4 50. Lambs \$2 to \$3 00 each.
 Butter—Fresh, wholesale, at 10c to 13c per lb., retail 12 1/2c to 15c per lb. Tub butter, dairy packed, 10c to 12 1/2c according to quality, wholesale, retail, 10c to 15c.
 Eggs—10c per dozen, wholesale, retail 12 1/2c to 15c per doz.
 Salt—\$1 25 to \$1 50 per barrel. Water Lime—\$1 to \$1 50 per barrel.
 Potatoes—26c to 40c per bushel, wholesale, 45c to 55c per bushel, retail.
 Apples—Common to good, \$2 00 to \$3 00 per barrel, extra \$4 per barrel.
 Coal Oil—30c to 37c for Canada; 40c to 58c for Pennsylvania.

Montreal Cattle Market.—June 23.—Deers.—The supply has been liberal. We quote extra \$7, 1st quality, \$6 50, 2nd do., \$5 50 to \$6, 3rd do., \$5 to \$5 25. Refusals, bulls, cows, &c., \$4 50 to \$5. Milch cows range from \$20 to \$30, according to quality.—Witness.

London Markets.—June 25th.—There was a very poor market to-day, and the most noticeable matter is a curious incident in the wool trade. A bale of wool, 200 lbs., was sold on the market for 4c per lb. The wool was sent by the grower from Buffalo, on consignment, to be sold here. It is the first wool passed onwards through our customs, the motive for sending it here we don't pretend to understand. Spring Wheat very scarce at 82c to 84c. Oats, 45c to 48c. Wool 40c to 44c. Grain—Fall wheat per bushel, 35c to 37 1/2c, spring wheat, 52c to 54c. Barley, per bushel, 60c to 60c. Corn, per bushel, 45c to 48c. Peas, per bushel, 46c to 50c. Corn, per bushel, 40c to 50c. Buckwheat, per bushel, 40c to 70c. Rye 30c. Provisions—Butter, milk, good. Fresh, by the casket, 10c to 11c per lb. Eggs, 60c to 65c per dozen. Hides, &c.—Green hides, per 100 lbs., \$0 00 to \$5. Calfskins—Green, 10c per lb. Wool, 40c to 44c per lb., matted and unwashed subject to a deduction of one-third of the weight. Hay—Hay, per ton, \$8 to \$10. Straw, per load, \$2 to \$3.—Free Press.

Montreal Markets.—Wholesale Prices.—June 25th.—Flour—Superior extra \$4 75 to \$5 nominal, extra \$4 30 to \$4 50, nominal, fancy, \$4 20, nominal, superfine \$3 80 to \$4, superfine No. 2, \$3 70 to \$3 75, fine, \$3 50 to \$3 60, middlings, \$3 10 to \$3 20. Pollards, \$2 80 to \$3, bag flour, \$2 20 per 112 lbs. There were some sales of flour yesterday afternoon—viz., a lot of about 2,000 barrels Canada superfine as it lies, brought \$3 75, and nearly 1,500 barrels superfine, Toronto inspection, at same price, a small lot was sold at \$3 80. A 1,500 barrel lot was reported this forenoon at \$3 75, unsuspected, 500 barrels inspected brought \$3 55 to \$3 90, and 500 barrels of Western superfine at \$3 90—some small lots bringing exceptional rates. A 200 barrel lot of middlings was sold at \$3 20. Other grades nominal. Oatmeal per barrel of 200 pounds.—Rates for good about \$4 70 to \$4 80. Wheat, per bushel of 60 lbs.—The only transaction reported to-day was a cargo of No. 1 Milwaukee spring at 92c on the spot. Ashes per 100 lbs.—First pots were reported to-day at \$5 60, \$5 62 1/2, and \$5 65 the outside rate being exceptional. Lard, per lb.—Kings 9 1/2c to 9 1/4c per lb., barrels and tins, 8 1/2c to 8 3/4c. Cheese, per lb.—The current prices for new are 8c to 9c. Butter, per lb.—Prices unchanged; Canada choice dairy, 13c to 14c, sales at inside rate, medium, 12c to 13c, sales at 12 1/2c, store-packed, 11c to 12c.—Witness.

Milwaukee Markets.—June 23.—Wheat sold at \$1 78 for No. 2, and \$1 79 to \$1 87 for No. 1, the market closing at the Newhall, in the evening, at \$1 80 to \$1 81 for No. 1. Flour—Holders of flour generally withdrew their stocks from the market. Oats advanced 3c, buyers offering 10c for No. 1 in store, but not getting any. Corn advanced 7c, the market closing with buyers at \$1 22, and no sellers. Barley and Rye were both nominal. Wool unsettled and higher, probably 3c to 5c higher, but no sales were reported. We understand that 78c were offered for nice clips, and have no doubt 80c could have been obtained for round lots of fine clean fleece.—Sentinel.

Albany Markets.—June 21.—Grain.—Rye easier, with small sales at \$1 70. In Corn there is an improved demand at better prices. Western mixed at \$1 60 to \$1 62 for No. 2, and \$1 55 for No. 1. Barley and Oats unchanged. Oats in request at better prices, State at 92c.—Journal.

Wool in Detroit.—During the early part of the week 70c to 80c was the usual range, but on Thursday prices went up about 5 cents, and the market closed at about 85c for the best clips. The scarcity of currency is impeding somewhat activity in the wool market, but it will not probably be long ere an abundant supply of money will be furnished from the East, for the purchase of the clip. The impression seems to be that prices will still be higher. We are glad to see that a large proportion of our farmers demand greenbacks for their wool. There is no other currency so available.—Tribune, 26th June.

Chicago Markets.—June 24th.—Flour.—The flour market to-day was unsettled and prices were not so firm. There was only a limited business done, and the market closed dull. Sales at \$8 50 to \$10 25 for good to choice winter extras, and \$8 to \$9 50 for good to very choice spring extras. Wheat was very much unsettled, and the market closed dull and decidedly lower after the regular despatches to the Board of Trade were received. For No. 1 Spring there was only a moderate demand to-day, at \$1 75 to \$1 76 per bushel—the market closing dull on 'Change at \$1 75. Corn was in fair demand, but prices were lower and closed at about \$1 25 1/2 to \$1 26 for No. 1, and \$1 23 to \$1 23 1/2 for No. 2 in store. Oats were comparatively steady and firm at about the same prices as were current last evening—the market closing steady and firm at about 70c for No. 1 in store. Barley was firmer and higher, with a better demand. No. 2 in store at \$1 35 to \$1 37; and some sample lots in bags on track at \$1 30 to \$1 40 per bushel. Horses—Prime to choice horses, \$7 50 to \$8 50, fair to good, \$6 50 to \$7 25, common to medium, \$5 to \$6 25, inferior, \$3 to \$4 75. Hogs—Extra still fed, 150 lbs., \$7 to \$7 50; medium, 125 lbs., \$6 50 to \$6 85; common and stock, 100 lbs., \$5 to \$6 60. Sheep—The supply was very small, and the market ruled dull at a decline of 25c to 50c per 100 lbs from last week's quotations. Sales include 180 head, at \$5 to \$5 50 for good mutton grades of 100 lbs averages and over.—Times.

Boston Markets.—June 24.—Ashes.—The market is firm for both kinds; sales of pots at 11 1/2c; pearls, 13 1/2c per lb. cash. Flour—The market is firm, with an advance of 50c to 75c per bbl.; Canada is firm and in demand. We quote superfine at \$8 to \$8 50; common extra, \$9 75 to \$9 50, medium do., \$9 25 to \$9 75, good and choice, \$9 75 to \$10 50 per bbl. Grain—Oats are in moderate demand. Sales of Northern and Canada at 95c to 98c per bushel. In Rye small sales have been made at \$1 75 per bushel. The market is firm, but the demand has been moderate. Sale of 5,000 Buenos Ayres at 32 1/2c, 5,000 Sandwich Island dry salted, at 24c to 25c; 2,000 African, at 26c, 1,800 Central American, at 25c. 3,000 Western dry at 26c, 700 New Orleans green salted at 13 1/2c, cash. In Calcutta, hides there have been sales of 50 bales Buffalo at 21c, cash. In goat skins, sales of 5 bales Patna at 65c; 50 bales Payta at supposed 70c, cash. Oil—Petroleum is firm and prices are higher. Sales of crude at 48c to 50c; refined, 78c to 80c per gallon. Naptha is selling at 35c to 40c per gallon. Produce—Butter is a shade higher. We quote choice New York and Vermont at 31c to 33c, fair to good, 28c to 30c per lb. The receipts are light and the demand moderate. Cheese arrives in bad order and requires considerable attention in the hot weather. The demand is moderate for the best New York and Vermont at 15c to 16c, common English dairy, 15c to 17c per lb. Beans are quiet at \$2 65 to \$2 75 for medium, and \$2 85 to \$3 for pea and marrow. Dried Apples are steady at 11c to 12c per lb. Canada Peas, \$1 50 to \$1 55 per bushel. Wool—The market has been very active; stock small; prices have advanced 5c to 10c for fleece, and 10c to 15c for pulled. The sales have amounted to 1,450,000 lbs. fleece and pulled, from 70c for inferior Illinois up to \$1 per lb. for extra pulled.—Boston Advertiser.

Advertisements.

WHITE WILLOW FOR LIVE FENCING.

THE undersigned begs to introduce to the notice of the farmers of Canada the WHITE WILLOW, in the confidence that it will prove a valuable plant for forming a GOOD and EFFECTUAL live fence. In proof of this, the following high recommendations are submitted—

HENRY D. EMERY, Editor of the Prairie Farmer, writing about the regions of Lee and Ogles Counties, says—

"I have found the representations I had heard fully realized in long lines of the Willow in the fence row, in all the freshness of their summer habit. I observed them growing on a variety of soils, both wet and dry, and where care and attention had been bestowed on them, they presented a beautiful sight in contrast to the broad stretch of prairie surrounding, without a tree or shrub. For miles scarcely a cutting had failed to grow, even when planted but six inches apart. I have since visited these regions, considerably extending my observations, and more carefully examined them in all stages of growth, from one year up to eleven, and find they do not die out by reason of close planting, but retain their uniform size and growth with wonderful regularity. In no case did I observe a sprout thrown up from the roots when broken by the plough or otherwise in cultivating the ground nearly up to the fence row. The tree seems perfectly hardy, thriving upon both wet and dry ground, and stands the hardest winters uninjured. To sum it all up, it is cheap, hardy, adapted to wet and dry soils, does not sprout from the roots, will stand severe pruning, bears close planting, and with proper training and care will make an efficient barrier to stock in a very short time.

We think that if some of those chronic croakers, who are so constantly taking the opposite position, would be honest enough to make a personal examination of the evidence so easily reached, before they so fully condemn the thing, their opinions would be entitled to much more weight than all their abstract reasonings, wise hints and prophecies concerning the future of the Willow.

M. L. DUNLAP, Editor of the Illinois Farmer, speaking of the Willow, writes as follows—

"Its adaptation to soils, whether wet or dry, its hardness under any exposure, its rapid growth and the small cost of making a fence out of it, places it among the prime necessities of the farm. The plants had of you last spring are making rapid growth, and this fall I shall fit the ground for over a mile of inside fence. My outside fence, as you know are of Osage. Two reasons induce me to prefer the Willow. 1st, that I can have a uniform fence without breaks in the low land, as is the case in low places with the Osage. 2nd, the cheapness. I intend to let my fence grow to its full height, but there is no difficulty in the way of cutting it back, as it will thicken up and not kill out by this treatment."

Mr. M. C. WELB, the Associate Editor of the American Agriculturist, gives the following testimony:—

My visit to Ogles Co., Ill., was in company with a gentleman intimately familiar with the agriculture of the prairies, with the soils and seasons, the crops and modes of culture. We travelled many miles, and examined a large number of localities where the Willow fences are in use. We found a few hundred yards of fence eleven years old, the first planted in this county or State, some also on the same farm, set during the immediate subsequent years—but of fences planted within the past four or five years, particularly that one, two and three years old, we saw miles upon miles, throughout this entire region. Thus the conviction comes to my own mind, that where it is best known the Willow is most highly esteemed."

Cuttings may be ordered of the subscriber, who warrants all cuttings supplied by him to be genuine and vigorous.

E. S. PIKE, FAIRBURNVILLE, OHIO, 12-11*

June 30, 1864.

PUBLIC TRIAL OF MOWING & REAPING MACHINES.

THE MOWING and REAPING MACHINES entered for competition at the Provincial Exhibition of this autumn, will be tested by actual trial in the field during the approaching hay and harvest season.

The trial of Mowers will take place on

WEDNESDAY, JULY 6th,

on the farm of JAS. LOGIE, Esq., Lot No. 17, Second Concession West Flamboro', close to the Dundas Station of the Great Western Railway.

Exhibitors are requested to have their implements on the ground and prepared for work as early as possible on the morning stated, so as to be ready to commence the trial and examination by the Judges at the latest by ten o'clock a.m.

Exhibitors are requested to forward their entries, with the usual subscription of one dollar, to the undersigned, on or before July 1st. The combined machines will be entered and compete distinctly from the single Mowers and Reapers.

Exhibitors will be required to provide the teams to work the machines.

All the rules and regulations to govern the trial will be announced on the field before commencing.

The day for the trial of the Reapers will be published as soon as possible.

The railway freight of the machines to the place of trial will be paid by the Association.

HUGH C. THOMSON, Secy B'd of Ag. 13-11

Toronto, July 1, 1864.

TO FARMERS' SONS AND OTHERS.

AN AGENT is wanted in every Township to canvass for "THE PRACTICAL SHEPHERD." Every Farmer who has a Sheep ought to have this Book at once.

Apply to—

P. R. RANDALL, No. 2 Masonic Hall, Toronto.

12-21

CARD OF THANKS.

MARKHAM, 30th April, 1864.

TO THE EDITOR OF THE CANADA FARMER.—I have taken the liberty, through your valuable paper, to thank the Directors of the AGRICULTURAL MUTUAL ASSURANCE ASSOCIATION OF CANADA for the prompt and satisfactory payment of my claim, for the destruction of my extensive barns, stables and contents amounting to eighteen hundred and fifty dollars. I am glad to say I had no trouble in getting my money, and I shall feel it my duty to recommend it to all farmers in Canada, in preference to any other COMPANY.

GEORGE MILLER.

I beg to inform the farmers of York and Ontario Counties that I still continue to hold an office at Markham Village for the above Company. This Company has always avoided Shops, Stores, Taverns, and risks of that sort. It has become the largest institution of the kind that ever existed in Canada. It has nearly 24,000 Policies in force, and it is, moreover, by far the cheapest.—It never cost members more than 25 cents each year on the hundred dollar. During the last four years, no Company in this country can say as much.

A. WILLIS,

Agent Agric'l M. F. Assurance Association of Canada, May 16, 1864. 9-17

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. 5-17

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.

CLUBS will be furnished at the following rates:—

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- ONE HUNDRED COPIES for..... SIXTY DOLLARS.

THE CANADA FARMER presents a first-class medium for Agricultural advertisements. Terms of advertising, 20 cents per line. No advertisement of less than ten lines taken.

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