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The Field.

Winter Work on the Farm.

Each season of the year has duties peculiar to itself. There is a time for everything, and it is the beauty and charm of a well managed business to have things done at the proper time. Although winter is looked upon as a period of inaction, and it is, to a large extent, free from the hurrying and imperative claims that press themselves into notice at other seasons of the year, yet it must not be allowed to pass idly by. There is no difficulty whatever in so improving the period of winter as to make it contribute its full quota toward the activities and profits of the year.

THE CARE OF STOCK is the most important duty of the farmer in winter. Much depends on the attention animals receive at this season. Young stock are usually either made or spoiled by the treatment they get in winter. Warm shelter, wholesome food in full and varied supply, regular watering, comfortable bedding, and cleanliness, are the chief requisites in the care of stock.

THE MANUFACTURE OF MANURE is one of the most important operations of the farm. How much may be done to increase compost heaps, and preserve the materials by which land is enriched. Foremost among these means is the care of the stable droppings. Not only should the solid but the liquid droppings be kept from waste. Either by drainage into tanks or ample provision of dry absorbents, every drop should be saved for future use. Spare time in winter may be turned to the very best account in hauling up swamp muck, spent tan bark, saw dust, leached ashes, in short anything that will decompose; and in mixing these substances with stable dung, so as to form a valuable compost. A well-made manure heap is a store-house of wealth.

FENCE MATERIAL.—As fence-making and mending are among the first things that demand attention when spring arrives, so a standing job for the winter is getting out a good supply of posts, stakes and rails. When fence timber must be procured from the black-ash or cedar swamp, it is indispensibly necessary that the season of winter be improved for the purpose. Then the swamps are frozen over and are readily accessible both to man and beast. Not only should fence timber be got out and drawn to

the place where it will be needed, but, as far as possible, it should be prepared for actual use, so that no more time than is actually necessary may be consumed in this kind of work, when spring opens.

FIREWOOD.—Winter is the time to provide the year's supply of fuel. Many farmers manage so badly as to be compelled to take time in the busier season of the year to furnish wood. It is baking or washing day—there is nothing to feed the cooking stove's hungry maw, and though more important operations are pressing, a load of wood must be got! The best way to obviate this is to improve the comparative leisure afforded by winter to lay in an ample store of fuel for the year. In this way too, the use of green wood—a wretched economy, and what is worse, a most provoking annoyance may be avoided.

A VARIETY OF ODD JOBS may also be done in winter. Every farmer should have some sort of a workshop, a few tools, and ingenuity enough to make many things required on the farm during the busy season. Much time is lost, and many depredations are committed by stock for want of gates. That miserable make shift, "clept bars," is one of the greatest nuisances to Canadian agriculture. Think of the time spent in taking them down and putting them up, the lessons in breachiness given to cattle by putting up two or three only, because in haste, and say if true economy does not dictate an utter abandonment of this wretched device for getting into and out of fields. Who cannot make a gate of some kind? There is no gate so clumsy and ill looking that is not far preferable to the neatest pair of bars ever put up. Winter is the time for gate-making. There are also many conveniences, such as waggon-racks for hauling hay, &c. ox-sleds, stone-boats, rollers, drag and cultivator frames, which many farmers are ingenious enough to make with their own hands, and in the timely preparation of which winter may be improved. A variety of repairs and fixings to implements, &c., may be advantageously done at this season. A supply of hurdles for temporary fences should be provided on every farm. The lumber for these is not very expensive, and, made by the farmer himself, they soon give back their cost. This is another good winter job.

ACCOUNT-KEEPING It is, also, a good time for overhauling the farm accounts. Every farmer should adopt some easy, simple, accurate plan of account-keeping, and record his receipts and expenditures faithfully. The review of these from time to time will suggest many lessons of wisdom, and be a source of actual profit. Well kept farm accounts are useful in settling facts, proving dates, preventing law suits, &c. There is no mystery about book keeping, and any common sense man can soon make himself sufficiently familiar with it for all practical purposes.

PLANNING.—Plans for the coming season should be well thought out and thoroughly laid in winter. The capabilities of the farm should be studied, mistakes

and successes noted for future guidance, a wise rotation of crops arranged, and everything reduced to system as far as possible. Just as a good packer will get twice as many things into a trunk as a poor one, so will a good planner get twice as much work into the year, and twice as much profit out of it, as a disorderly, improvident, slipshod man who lets things take their chance.

CULTURE OF THE MIND.—Above all, winter is the time for mental improvement. The long evenings invite to reading, reflection, attendance on lectures, holding of farmers' clubs, &c. There is no reason why the farmer should not be thoroughly intelligent and well-informed. Even the busy season furnishes many opportunities for observation and reflection, whilst winter gives the fullest chance for self-improvement. The time is gone by for prejudice against book farming and agricultural improvement. Our township, county, and provincial shows, have demonstrated what science can do for the advancement of everything connected with agriculture. But there are other subjects besides those connected with his own immediate business, on which the farmer should read and think. This is an eventful age, and he must read a good deal who manages to keep up with history, so rapid is its onward march. All departments of science, the ample page of general literature and poetry, the sublime themes of religion as set forth in God's own book—itsself the text-book of study for an immortal lifetime,—plead for a share of that leisure which winter so liberally supplies.

Winter Mulch.

In this climate grass and young grain are the better of being covered partially or wholly in some way. Snow answers the purpose, if it comes in good time, does not fall too abundantly, and departs when its presence is no longer required. Sometimes, however, it fulfils none of these conditions. It is long in coming, falls heavily, and stays late. Manure applied in the fall or early winter, is a better mulch than snow. It lies lightly on the surface, does not pack the soil, and protects the roots of grass and grain from the effects of alternate freezing and thawing. In addition to these benefits, it enriches the land. While it affords protection, it adds fertility.

It will perhaps be urged, that if manure be applied as a dressing to the top of the ground, much waste will be the consequence. The gases will escape and the rains of autumn, winter, and spring will wash away all its virtue. To this it may be replied, that there is not so much waste as at first appears. The heat of the sun is not great at the season referred to, and evaporation does not go on very rapidly. Besides even when the sun's rays are more intense, there is not such total loss by evaporation as many think, because the soil attracts and absorbs a large share of the gases as they are set free. As to washing away, it is into the ground that the virtue of the

manure goes—precisely where it is wanted. Very few intelligent agriculturists object to top-dressing with manure in the present day. Even when dung is to be ploughed in, it is considered by many advisable to spread and leave it on the ground a while, and let the sun, air, and rain act upon it. Old meadows and fields of winter wheat may be benefitted greatly by a winter mulch. The effect of such a course is so marked, that only a trial is needed to convince the most sceptical of the wisdom of the plan. Any description of manure may be used. Even raw and undecomposed material answers a good purpose, though of course it is better well rotted. It should be carefully, evenly, and finely spread. When put on early in the fall, it will often stimulate a growth of grass or young grain before winter sets in, such as itself acts as an additional mulch. It answers well, however, if put on when the first hard frost comes. The ground being hard enough to bear the horses and waggon without their sinking into it, all injury that might be done to the grass or grain roots is prevented.

Canada Thistles and Cultivation.

To the Editor of THE CANADA FARMER:

SIR,—In your issue of the 15th ult. I observed an article under the above head, from "D. H. O., in the Country Gentleman." The subject is an interesting one to the agriculturist, as the Canada thistle is, to him, not only an annoyance, but a positive damage. As the *achemum* is more bounteously provided with pappus, which serves as wings, than most of the order "Compositæ," its dissemination is very extensive. Hence its effectual eradication, as the cure for the evil, is very desirable.

I presume that no person will hesitate to allow with Mr. D. H. O., that if the hollow *culm* be so exposed as to be filled with water, saturating the root, it would tend to accelerate its decomposition. But the difficulty with this method is obvious. In very many instances it is not practicable, as neither farmer nor farmer is in a condition to justify the operation. But the experience of the agricultural community would not lead them to the same ready acquiescence in the statement: "Cultivation will not destroy Canada thistles," but quite the contrary. Sorry would I be to see the day, when that industrial spirit which characterizes the "tillers of the ground," of our flourishing Province, should be superseded by that indolence which would induce them to say: "We will sit down, fold our hands, and allow thistles and noxious plants to grow, for 'cultivation will not destroy them.'" Although it may require industry, perseverance, and all the experimental knowledge at the farmer's command, yet it can be done—they can be destroyed. In some sections of the Province the practice of fallowing during one season and sowing in the subsequent spring, is adopted with success.

To prevent the growth, diminish the quantity, and finally, to eradicate Canada thistles entirely from the soil, plough a moderate depth in June, when the thistles will have attained a pretty good size; then, after the lapse of ten or twelve days, when they will have summoned all their vegetative powers to repair their damages, plough again deeply. The previously severed *radix* will thereby be again disturbed, and its vitality nearly exhausted. During the warmest weather in July, harrow thoroughly, dragging them forth from their last mortal grasp after sustenance. Leave them on the surface of the ground for the remaining moisture to be evaporated from them by the intensity of the sun's rays. Life will become extinct, and the "curse of the ground" so far removed, that Canada thistles will not prevent the development of the desired plant. The field should be converted into meadow-land as soon as practicable, and another treated in a similar manner. Thus by alternate cultivation and mowing, they will be effectually removed, the farm reclaimed from their usurpation, and advanced to that high state of cultivation (may it be the ambition of every farmer,) which, from more copious products, would tend firmly to establish the conviction, that "industry is itself a treasure."

W. B. PRINGLE.

Montrose, Nov. 5, 1864.

Transmutation of Wheat into Chess.

To the Editor of THE CANADA FARMER:

SIR.—The object of this communication is to lay before the farmers of Canada, at least the scientific portion of them, through the columns of your valuable journal, my experience in regard to the subject of wheat being transmuted into chess, believing that the facts which I shall here state, and the conclusions to which I have arrived, will open to the curious enquirer a new field for experimental and philosophical investigation—one never yet explored, but, doubtless, rich in objects that will both interest and benefit mankind.

In March, 1819, I removed from the Niagara District to the New Purchase, as it was then called, Trafalgar being the township where I located, and where I purchased a farm of one hundred acres on the north side of Dundas street; with the farm I also acquired about five acres of fall wheat. In repairing and straightening the fence between the wheat and a pasture-field adjoining, I had occasion to throw into the latter a triangular piece at one corner, containing some four or five square rods, and this, I observed, the cows kept cropped very close until winter set in. When harvest time arrived, I was not only disappointed, but chagrined, to find that nearly one-half of my expected crop of wheat was literally chess—a circumstance which I attributed to the slovenly habits of the farmer who had preceded me, but I soon learned that all the farmers living on the street were either in a greater or less degree similarly afflicted. It may be necessary here to state that the district of country where I resided was originally covered with a dense pine forest, growing upon a hard, reddish, clay soil, with a slight covering of vegetable mould, hence, the roots of the trees being unable to penetrate the earth, spread upon the surface of the ground, something like net-work, and it was here and around the numerous stumps, and in the angles of the fences that chess grew in the greatest profusion. What was the cause of this? I knew that the farmers generally, as well as myself, took the utmost pains to sow the purest wheat that it was possible to obtain, and yet at harvest time there was the inevitable chess, and this, too, not only in the older cultivated fields on Dundas street, but extending far into the interior, the then newly surveyed townships of Esqueving, Erin, &c. Under such circumstances it is not to be wondered at that the farmers were generally impressed with the belief that "wheat turned into chess," an idea which I at first ridiculed as being not only absurd but impossible, not then believing that Nature in her seemingly uniform laws of production would indulge in such freaks as changing one variety of grain into another. Facts, however, accumulated so fast to sustain the farmers in their belief, and against myself, that in reflecting upon the subject it occurred to me to try an experiment, and see if wheat, uncultivated, would reproduce itself; if not, would it produce chess? and for this purpose I selected my seed with the greatest care from a sheaf of wheat, cutting off each ear separately and rubbing it out. I then repaired to my woodland, chose a clean spot, somewhat shady, raked off the leaves, sowed my wheat—a piece about twenty feet square—covered it with fine brush to keep off the birds; fenced it securely, and watched it closely, and had the satisfaction to see that it vegetated finely, and grew as well as could be expected under the circumstances. In the Spring I removed the brush, and was pleased to find that it had withstood the winter well. To return to my pasture-field, which I left at the setting in of winter. In the Spring I prepared it for a meadow, as it had been well seeded, and at mowing time cut from that portion of it which had been sown with wheat a most luxuriant crop of chess—not exactly chess, either, for on comparison I found that there was a slight change from that growing among my wheat; a change, too, that was more apparent when I mowed it the second year, it being understood that I pastured it after the first mowing until late again when winter set in—a practice too common among farmers; a practice, however, that was favourable to my experiments. In due time my little field of woodland wheat ripened, and what do my readers suppose the crop was composed of? It was entirely chess, and not an ear of wheat to be found among it! At this I was both surprised and delighted, surprised that nature did produce such changes in the vegetable world, and delighted that I had demonstrated the fact beyond the possibility of a doubt. I was led to try

the experiment of growing wheat in the forest from the following circumstance:—At the time of my removal to Trafalgar, the township only extended one concession north of Dundas street, but the following year a large addition was made to it, and given out in 100 acre allotments to emigrants and others who had served in Canada during the war of 1812. I became the possessor of one of these, and performed my "settlement duties," which were to clear five acres fit for a crop, fence it, build a house of certain dimensions, and clear up the road allowance in front. It is proper to state here that this portion of the township was, in general, hard timbered land, consequently there was a deeper vegetable surface mould here than on Dundas street, with a similar subsoil of hard clay. I sowed my five acres with the purest wheat it was possible to obtain, harrowed it in thoroughly, and was pleased to find at harvest time that it was extremely free from chess, but owing to illness, it was late before I gathered it, and the consequence was that a great deal of it shelled out and fell upon the ground which I had not seeded with grass, and in the fall it presented the appearance of a perfect "mat" of wheat over the whole field, and I boasted to my neighbours that I would have a good crop of wheat without the trouble of sowing, but was only laughed at for my simplicity. My new farm was nearly five miles from Dundas street, and in taking my seed to it through a crooked bush road on an ox-sled, one of the bags was torn, and scattered the wheat along for several rods, and this I observed afterwards was growing well, and remained undisturbed, as the road had been straightened, until harvest, when, led by curiosity, I examined it, and found the greater part of it chess, but nothing resembling wheat could I discover; but what now surprised me the most was its perfect greenness, with not the slightest appearance of ripening, and it never did ripen. It was as green the second year, or rather the third, as it ever had been, and more resembled some species of wild grass than it did either chess or wheat. To what cause was this change owing? was the question which I put to myself, and reflecting upon the subject, I came to the conclusion that it was due to one of two causes, or perhaps both combined, either to its growing entirely in the shade, or to the fact that it was sown as nature sows all its seeds, scattering them upon the ground without any tillage or covering of earth, and acting upon these ideas led to my woodland experiment, above related. In regard to my "self-sown" field of wheat, I would have been willing at harvest time to have paid five dollars for every ear of wheat that could have been found in it, and had it been mowed at the proper season, I believe it would have yielded two tons to the acre of excellent fodder.

A serious attack of sickness at this time, and from which I did not fully recover for fifteen years, put an end to my experiment, and compelled me to leave the country in search of medical aid in a foreign land, and from that time to this, with the exception of a short interval, I have never been engaged in agriculture.

From observations, however, made at the time, particularly in the case of my "bush road" wheat, and that of my pasture field, I thought I had discovered a tendency in chess to become perennial, and determined to put it to the test by sowing a field of wheat, and then by pasturing and mowing it a succession of years, reduce it, if possible, to its original state of grass, and having accomplished this, then to force it up again by cultivation through all its changes to its ultimate wheat. Fearing that my experiment might fail if carried on in an open cultivated field, I had intended to have enclosed a piece of low, well-shaded forest land, and pursued the same course with it, but as stated above, my experiments were brought to an end; nevertheless from facts collected from observant and reliable farmers, added to my own experience, I have been led irresistibly to believe that neither wheat nor any of our cereals are indigenous in any part of the world, but that they all owe their discovery to the cultivation of grasses for food for animals, and if left uncultivated, they will either perish entirely or return to their normal condition, and further, that there are grasses native to this country, to say nothing of others, which, if pushed by cultivation to their ultimate issues, could be made to yield new and valuable additions to our present list of cereals.

J. HUNTER SEARS.

Brantford, Nov. 14, 1864.

NATIVE FLAX.—The territorial papers tell of an indigenous flax discovered on the hills of Carson valley, in great abundance. The stalks are upwards of three feet in length, are of very fine and strong fibre, and grow in bunches of from forty to fifty in a single root. It is thought a good business could be made in gathering it for the manufacture of bale and windlass rope.—N. Y. Economist.

Reaping Machines in Scotland.

On Saturday an extensive trial of reaping machines took place under the auspices of the United Agricultural Society of East Lothian. The competition took place on the farm of Athelstaneford, near Drem, where Mr. Douglas, the famed breeder of farm-stock, had provided a field of 65 acres of barley, divided off into lots of about 1½ acres, and a field of oats of 40 acres, divided into lots of nearly an acre each. The weather was extremely favourable for the competition, and the crop cut was in capital condition. The barley was on a nearly level field, and was a full average crop; the oats, which were in a field with a gentle slope, were light in the straw, but fully up to the average oat crop of the season. Upwards of thirty machines were entered for the competition, but several were withdrawn. 18 machines in all took part in the competition, displaying fully the different principles of construction and working of those now in the market. Four were on the self-delivering principle—namely, Samuelson & Co.'s two-horse machine, Brigham & Bickerton's two-horse and one-horse reapers, and McCormick's sheaf-delivering machine, the latter exhibited by Mr. Todd, of Castlemain. The manual delivery reapers were—two by Mr. Halliday, of Haddington, two by Mr. Wallace, Alexandria, Dumbartonshire; two by Pixley, Sims & Co.; one Pixley machine exhibited by Mr. Hume, Coldstream; a two-horse hand-delivery reaper by Mr. Gray, of Brownrigg; a two-horse reaper, by Brigham & Bickerton; a "Buckeye" combined reaper and mower, by the same firm; a Gardner & Ainslie machine, shown by Mr. Reid; and a new two-horse reaper, by Messrs. G. and W. Porteous, of Haddington. There were also one of the "Eclipse" one-horse machines of Samuelson, and a one-horse "Excelsior" of Brigham & Bickerton. The extent of the competition brought together a large number of the leading agriculturists of Scotland, and the beauty of the weather brought out a considerable number of ladies and gentlemen to witness the interesting sight. Among those on the ground were the Marquis of Tweeddale, the Earl of Wemyss, the Earl of Haddington, Lord Chelmsford, Lord Elcho, M.P. for the county, Lord Walden, Sir Hew Dalrymple, Sir George Grant Suttie, &c. The judges were the Marquis of Tweeddale, Mr. Henderson, Byres; Mr. Smith, Stevenston Mains; Mr. Wylie, Bolton; and Mr. Russell, Coalstonemains. The reaping began on the firing of a gun shortly after 11 o'clock, and concluded about 5 in the afternoon, an interval taking place between the cutting of the barley and the oats, during which time a large party of gentlemen dined in the tent, when the chair was taken by the Marquis of Tweeddale. After the allotted spaces in the two fields had been cut, the judges went minutely over the work, and also inspected the mechanism of most of the machines. They then selected a few for a further trial under their own immediate view, and after consideration gave the following awards.—For manual delivery machines—First prize, Halliday, Haddington; second ditto, Brigham & Bickerton's "Buckeye"; third ditto, Halliday, Haddington; fourth ditto, Wallace, Dumbartonshire, fifth ditto, Humes, Pixley; sixth ditto, Wallace, Dumbartonshire. For self-delivering machines—First prize Samuelson & Co.; second ditto, Brigham & Bickerton's two-horse. For the best reaper in the field, Mr. Halliday, Haddington. The machine placed first is the same as that with which Mr. Halliday took the first prize at the competition at Yester in the same district in 1861, but with considerable improvement. It differs from the machine placed third in having a compound acting guiding wheel, by which the machine is easily turned, and which has the merit—of considerable importance on a grass bottom—of not cutting up the soil however sharply it may be turned. Both Halliday's machines are provided with a very simple arrangement, by which one lever throws the machine out of gear and at the same time lifts the knives out of the ground. This is by many deemed an advantage, though it has been objected that, as the knives cannot be lifted without stopping the cutting, there is not the same facility for clearing obstructions, such as stones, as is given in reapers where the actions are not conjoined. The beautiful balance arrangement for lifting the knives in Samuelson & Co.'s one-horse machine was much admired. There were, however, no prizes given for one-horse reapers. Brigham & Bickerton's machines, of which there were five on the ground, took both the second prizes. The "Buckeye" is a strong and rapid working machine, and gives great satisfaction. Mr. Wallace's reapers, which stood fourth and sixth, differed from each other in the arrangement of the wheels—one of them having two large wheels, while the other was constructed with one only. The Pixley machine, shown by Mr. Hume, started very late, owing to its detention on the railway, but succeeded in taking its place in the prize-list. The easy draught and excel-

lent working of Samuelson's self-delivery machine won it the first place in that class. Its light draught is materially assisted by the action of the teeth, which pass through two fingers at each revolution, thus lessening the number of revolutions necessary to give speed to the cutters. The same arrangement is used in the "Eclipse" machine. The hand-delivery machine of Mr. Gray excited considerable attention by its novelty. In it a girl follows the machine, placing a "whippie," or binding-straw, on the till-board after each sheaf is delivered. The band is thus found lying beneath each sheaf on the ground. In every respect the competition went off well, and the work done was throughout good. So much was this the case that the opinion was freely expressed that with any of the machines on the ground a farm would be well served.—*Scottish paper.*

Keeping Potatoes Through the Winter.

FARMERS sometimes sustain considerable loss through inattention to the manner in which their potatoes are stored in the fall. So far as our experience goes, the chief things to be attended to are to see that the potatoes are dry, all sound and sufficiently covered, if "holed" out of doors, to prevent freezing. We have seen potatoes kept in most excellent condition by being placed in a conical heap on the top of the ground, covering the heap with plenty of straw and afterwards with dirt, to the depth of twelve or fifteen inches, according to the climate and exposure; and we have, likewise, had them come out in fine order in the spring from pits dug in a dry place, the potatoes filling the pit to the surface of the ground, and then covered with boards or planks, and dry mould. Of course potatoes cannot be thus pitted underground on soil that fills with water. We find in an exchange, without credit, some suggestions about storing potatoes that seem to us new and original, but whether valuable or not we cannot say. We never had potatoes injured either for seed or table, put up in the manner indicated above. But there may be something in the "ventilation" theory, and we give our readers a chance to try it. The writer says:—

When potatoes are to be put away in pit, care should be taken to keep them as dry as possible and to ventilate the pile so that no confined air shall remain. The best method is to select a high, dry ridge, and when the pile is formed give it a covering of straw, grass or stalks, with a sufficient thickness of earth to render them secure from frost, and then cover the whole with plank so as to turn off the water into trenches, which should surround the heaps. In forming the pile a tube, or several of them, according to the length of the pit, should be extended into the body of the heap and reach to the top of the earth, for the escape of heated air. These may be five or ten inches square, and in very cold weather the opening should be closed with a bundle of straw or hay. Without this precaution, potatoes that are designed for seed, are as much injured as if they were intended for the table. Before planting time they are so much grown and their strength and vigor so much exhausted that their second growth is weaker than the first, causing slender, sickly vines and a greatly diminished crop.—*N. Y. World*

Two-FIFTHS of an acre of ground in Fitzwilliam, N. H., raised ten and three-quarters tons of turnips this year.

SCARCITY OF WOOD.—The *Railroad Record* says that although the railroads in Ohio, when first constructed, passed through a densely wooded country, yet now on the main lines, wood is disappearing at a rate which will soon put it out of the power of the railroad companies to command wood under a very high price. It states that the railroads of Ohio consume *twelve thousand acres of wood per annum!* Wood is becoming very scarce in all the older settled sections of the country, and it is high time that more attention was paid to setting out trees on waste.

CONCRETE SETTING OF FENCE POSTS.—There is constant inquiry for some means of setting fence posts so that they will not heave by the frost. The following is suggested as offering at an expense of a few cents per post, an effective way. A hole is dug about as large as a flour barrel, but wider at the bottom than at the top, on two sides at least. This post is set upon a stone laid in the bottom and the whole is filled up rapidly with concrete made of good hydraulic cement, mixed with half as much again of sharp sand or gravel as would be used in making builders' mortar; and during the filling, as many clean stones, large and small, are thrown in as can be buried in the mortar. Posts thus set will be firm as rocks, and will not decay below ground.—*Am. Ag.*

SCANDINAVIAN FENCES.—The sort of fence in general use along the roadsides is of a peculiar kind, differing from what is generally in use for that purpose in middle Europe. It consists of spruce fir trees, split up roughly into triangular pieces, which are placed at about an angle of 45°, with one end sunk slightly in the ground, and so close as to prevent hogs or lambs from getting through them. The whole is then bound with two or three lines of withes, of twisted spruce fir, birch, or willows, at certain heights from the ground; and, in this way a formidable fence is constructed, difficult to get over, as well as sufficiently open to permit the snow to blow through it.—*D. Moore, in Proceedings of Royal Dublin Society.*

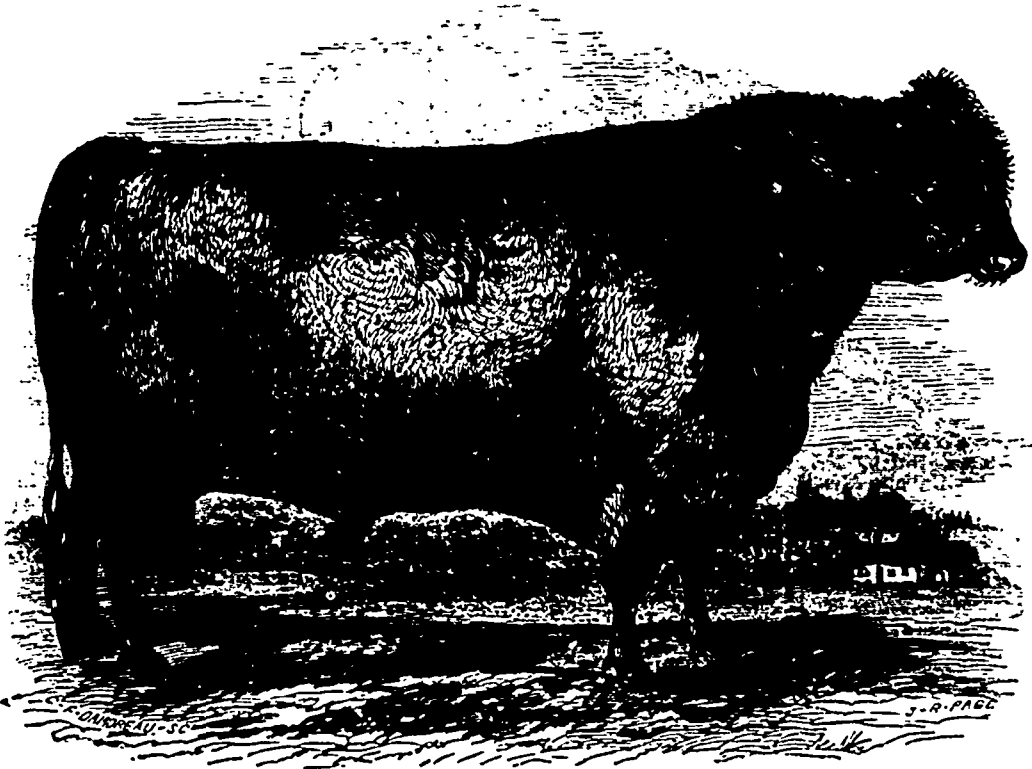
THE FIBRE OF THE HOP VINE.—A correspondent of the *Scientific American* says:—"I discovered, some two years ago, that the common hop vine, the *Humulus Lupulus*, contains in the inner bark, like the hemp, very tough fibres, which in our days of high prices of cotton and rags might be turned to useful purposes. No doubt it will answer as a good substitute for rags in the manufacture of paper. It is not so singular that this plant should possess this fibre, when we remember that it belongs to the hemp family, and I would not be surprised if, by looking among the species in the genera of the nettle family (*Urticaceae*), of which the above is a sub-order, we should find some more fibre-bearing plants."

TIMBER SHOULD BE CUT IN SUMMER.—A correspondent of the *Ohio Cultivator* says:—"Recently I had the pleasure of visiting Elder Bradley, of Portage county, who showed me a field which he cut and cleared off in June and July, 1822. Many of the stumps are yet standing and quite sound; the rails made at the same time quite sound and good. Another field cut and fenced in the winter of 1837-8, no stumps standing, rails nearly all rotten or gone. Barn built in June, 1834, chesnut shingles, all sound but much worn; oak sills six inches from the ground—not covered, perfect, & sound; stakes made in June, set top down, stand good, nine years old. Nearly all the sills of the barns exposed, that were cut in the winter season, only last good ten or fifteen years; so says the Deacon. He also says he easily kills all elders and briars by cutting them off to the ground in January; they will only stand one or two cuttings."

WHEAT AND BARLEY GROWN FROM OATS.—The following letter, signed "William Cowper," and dated Wappenham, near Towcester, Northamptonshire, appears in the *Berkshire Chronicle*:—"It is a positive fact that I grew both wheat and barley from oats. The wheat I continued to grow up to last year, but in consequence of the crop going off, I was obliged to fill it up with spring wheat. The wheat I grew from the Dutch oat was a beautiful quality, small seed, weight 6½ lbs. per bushel, light coloured chaff, fine straw and blade. The wheat I grew for about ten years, and sold lots of it to my neighbours for seed. Now I am growing a coarser wheat that a neighbour of mine grew from the Poland oat. That is a much stronger straw and larger ear, but it is very apt to mildew the last few seasons. The way I adopted was to plant it thin, under a sheltered wall, the middle of June; it then will require to be cut off about one inch from the ground before coming into bell three times the first season; the following year it produces the wheat I spoke of. Many people saw it when growing, it was a very thin berry the first year. The difficulty is in keeping the root to stand the winter. At the Towcester union their produce barley and mine was the same from a coarse oat. Black oats will produce rye the same way."

A NEW CEREAL.—A few days ago a somewhat peculiar specimen of the cereal crop was handed to us for inspection. The ear had a good deal of the appearance of rye in its shape and form, but the pickles bore a much closer resemblance to the best chevallier barley both in size and outline. The most particular thing about it, however, was that the ear had six rows of pickles. There were seventeen pickles in each row, and consequently 102 upon the head. A return of more than a hundredfold is certainly a very heavy one, and it needs scarcely be said that at the present time, when prices are so low, and quantity must in a great measure be looked after as well as quality, agriculturists would be warranted in cultivating a better acquaintance with such a cereal. Our best barley seldom exceeds thirty-four or thirty-six pickles on the head, and the great proportion of it may be quoted at thirty-fold. A cereal which will triple this return is worth looking after, more especially as the pickles on the head which was submitted to us were plump and well coloured, and seemingly little if anything inferior to barley. It may be added that the head was got on the farm of Amisfield Mains, near Haddington, and, we understand, the seed had been sent from England.—*Scottish Farmer.*

FIRST PRIZE FOUR-YEAR OLD GALLOWAY BULL, AT THE PROVINCIAL EXHIBITION,
HAMILTON, 1864.



The Property of Mr. JOHN SNELL, Edmonton.

The district termed Galloway, the natural habitat of a celebrated breed of cattle of the same name, forms the termination on the west of the range of Greywacke hills, which stretch from St. Abb's Head, on the east coast of Scotland, to the North Irish Channel, including the Counties of Wigton and Kirkcubright, with a portion of Ayr and Dumfries. The surface of the country is undulating, rising in places to moderate elevations; the climate is far more moist and the winters less severe than the eastern coast, and the soil naturally tends to produce the various kinds of grasses and herbaceous plants rather than the heaths. In this interesting district a distinct race of cattle has been reared, possessing many valuable characteristics, from very early times. This breed originally belonged more to the mountains than to the plains, and they are closely allied to the Kyloes, or West Highland cattle, to which they have several marks of resemblance, so much so, indeed, that they have sometimes been designated "Kyloes without horns." The modern Galloway, however, is a much larger animal than the native of the Highlands, and of a much more docile disposition, and, being without horns, numbers of them can be more safely kept together in yards or enclosures with far less trouble and liability to accidents than the cattle of the mountains, which evince extraordinary impatience of restraint.

Among the most striking characteristics of this breed is the entire absence of horns in both sexes. "It is said that the older breed of Galloway, as it existed in the middle of last century, possessed horns, but this is not perfectly ascertained, and some earlier notices rather conduct us to the conclusion that the absence of horns has been for a much longer period a distinctive character of the race. It may be either due to the physical circumstances of the country, which produce this constitutional character, or to the effects of selection in breeding, or to a combination of these causes. If the constitutional tendency existed it was easy for breeders, by breeding only from animals destitute of horns, to render all the breed hornless. Sometimes, even yet, the horns are developed in individuals, and as this is regarded, erroneously, indeed, as a test of impurity, they are cut out. In a few cases the development of the horns is partial: the nucleus, or bony part, is wanting, but the horny part has been formed, and hangs loose on the skin."

The Galloways may be considered as occupying a sort of intermediate position between the diminutive breeds of the mountains and the grosser forms of the plains. Their average dead weight, when fat, at three years old, in their native district, may be reckoned about 50 stones, of 14 lbs. to the stone, but there are among the modern and improved herds specimens which attain to near that weight at a little more than two years old. Their colour is a uniform black, and no other shade is now regarded as indicative of hardihood of constitution or purity of breed-

ing. Other colours are occasionally seen, but it is generally believed to be caused by more or less crossing with other breeds of the more elevated districts. The form of these animals, in well-bred herds, is exceedingly compact and symmetrical; legs short and fleshy to the knee and hock; the sides usually long, the neck often, perhaps, too coarse, the chest deep and a good dew-lap. Ribs well springing, wide backs, and full loins and rumps. The crops are also full, but little coarse beef, the parts used for roasting being excellently developed. Bone fine and flat, head well set on and rather fine, eyes moderately prominent, muzzle fine, ears rather rough, and a tuft of hair on the brow, while some of them have manes. In handling they have the invaluable property—at once denoting strength of constitution and fineness of quality—a thick but a supple skin. The above points are, of course, materially affected by the manner of breeding and feeding, but even on exposed moorland farms, where but scanty fare can be obtained and no protection, it is extraordinary how little their hides indicate the occasional privations they endure.

Culley, an eminent authority, remarks in his excellent treatise on live-stock, half a century ago:—"In most respects, except wanting horns, the Galloway cattle resemble the long horns, both in colour and shape, only they are shorter in their form, which probably makes them weigh less. Their hides seem to be a medium between the long and the short horns, not so thick as the former nor so thin as the latter; and like the best feeding kind of long horns, they lay on fat on the most valuable parts, and their beef is well marbled or raised with fat. They are mostly bred on the moors or hilly country in Galloway, and rising four or five years old, when they are taken to the fairs in Norfolk and Suffolk, previous to the turnip feeding season, whence the greater part of them are removed in the winter and spring, when fat, to supply the consumption of the metropolis, where they are readily sold and at high prices, for few or no cattle sell so high in Smithfield market, owing to their laying on fat on the most valuable parts; and it is no unusual thing to see one of these little bullocks outsell a coarse Lincolnshire animal, although the latter be heavier by several stones." The

principal grazing districts of England. "It is computed," observes Professor Low, "that upwards of 20,000 head are annually exported from the district, of which 16,000 to 18,000 are sold in Smithfield; but it is probable that the total export exceeds the quantity mentioned. They are reared to the age of two or three years on the farms of the country, and are driven southward, mostly in the latter part of the season, and chiefly to the counties of Norfolk and Suffolk. They are purchased by the English graziers, wintered on straw, hay, and green food, and fattened on the grass of the following season, and driven to Smithfield, supplying a large consumption of the city from Christmas to July. They are well known accordingly, in this market, and are mostly valued by butchers and consumers. A number are also fattened in the lower parts of Dumfriesshire; and indeed over a great part of that extensive county the prevailing breed has hitherto been the Galloway." The cows of this breed are not distinguished for milking properties, yielding generally a comparatively small amount, but the quality is excellent. For dairying purposes they have been superseded by the Ayrshire, and in districts where turnips and other roots are extensively cultivated, and cattle food is abundant, they are found to give place to the Short-horns.

Efforts have, from time to time, been made to cross the breed by the Dishley Longhorns, the Ayrshire, and the modern Shorthorns. These attempts, it is believed, have been all failures, in so far as they were designed to improve the general breed of the country; and modern breeders, with better knowledge, have turned their attention to the improvement of the existing race. In this field there is a wide scope for the exertion of individuals, and, if steadily pursued, this system cannot but be attended with beneficial results. "The breed of Galloways is peculiarly confirmed in its characters, and thoroughly adapted to the condition of the country; and all that is wanting to promote its progressive amelioration, is a careful selection of suitable males and females for breeding, with that due attention to early and liberal feeding of the young stock, which, in every case, tends to the production of superior animals. If, on any particular farm, another race of cattle can

same writer observes.—"In Galloway they spay more heifers than perhaps all the island besides; and in that, too, their method is different from any other part I am acquainted with, for they do not castrate them until they are about a year old; whereas, in every other place I know, the heifer calves are spayed from one to three months old; and it is now generally admitted as the safest practice to castrate calves and lambs, male or female, while very young." They are now generally spayed much earlier than they used to be, and many important changes and improvements in the way of breeding and management have been of late years introduced. An extensive trade in cattle has long been carried on between Galloway and

be raised, as the Shorthorns, let this stock be substituted; but it would be an error to attempt a mixture of blood with the race so long acclimated, and so excellent in itself, as that of Galloway. The great advantage of having a breed possessing uniformity, is manifest in Galloway, as in every country where a race of determined character exists. The breeder has always in such a case the assurance of being able to reproduce in the offspring, the essential properties of the parents; whereas in countries where no uniform breed has been established, he never can be assured of the result of coupling animals together. The cattle of Galloway, though they have all the characters of resemblance which constitute a breed, yet vary greatly in size and form, according to the fertility, natural or acquired, of the farm on which they are reared, showing the importance of providing an increase of food for the animals when growing in bone and muscle. One of the great defects, at the present time, over a large part of Galloway, is the not supplying the growing stock with sufficient and nutritious food."

The Galloways were introduced into Canada about ten or a dozen years ago. W. R. Graham, Esq., of Vaughan, was, we believe, the first importer of them from the old country, and he has been succeeded by several enterprising farmers in different parts of the Province, among whom may be mentioned the Messrs. Roldick, of Cobourg, W. G. Miller, of Markham, J. Snell, of Edmonton, &c. The Galloways, we believe, are as yet scarcely known in the United States, but in Canada, and probably in other parts of British America, they are steadily increasing. Their appearance, as a class, at our Provincial Shows, is highly interesting and attractive; many of the animals of both sexes being excellent specimens, clearly indicating purity of breeding and adaptability to the pastures and climate of this country. The number entered for competition at the last Provincial Show was seventy-one, and the prizes in money awarded amounted to near four hundred dollars. For dairying purposes the Galloway will certainly not displace the Ayrshire, or our better class of grades; while in the richer soils and pastures of the plains, the Shorthorns, Herefords and Devons will be sure to maintain their ground. But experience certainly encourages us to look to the Galloways, and other cognate breeds, as peculiarly adapted to the more elevated and exposed districts of this northern clime.

The accompanying engraving is of Mr. Snell's aged bull, to which was awarded the first premium at the late Provincial Show. He is a really fine animal, having the chief characteristic points well brought out, affording the reader a correct idea of the form and general characteristics of this valuable race of cattle.

Cruelty to Animals.

The proper care of live stock is usually urged from considerations which prove it to be for the farmer's interest, to give due attention to the wants of the dumb creatures who work for him and are dependent on him. In this view of it, humanity, like honesty, is the best policy, but just as there is a moral obligation to be honest, so also there is a moral obligation to be humane. It pays to bestow care and attention upon live stock, but even if it did not, and some pecuniary loss accrued from so doing, the dictates of humanity are authoritative and supreme. We fear there are many who forget that man's lordship over the inferior creation, is not only a matter of power, but of trust; and that the animals he controls, have rights as well as duties.

That the lower orders of animals possess the susceptibility of pain and suffering in a high degree, cannot be doubted by any one who has made their condition a study. It is hardly to be supposed that their capabilities in this respect are equal to those of man. Cowper's lines on "Cruelty to animals" embody a manifest exaggeration when he says:

"The poor beetle that we tread upon;
In corporal suffering feels as great a pang,
As when a giant dies."

But though their sensibilities are less acute than ours, they are sufficiently keen to claim our compassionate regard. The common law of the land extends its protection to the brute creation, and forbids by pains and penalties the infliction of cruelty. But

without overstepping the limit of legal enactment and prohibition, a great deal of cruelty may be perpetrated. Over-work, insufficiency of food, want of shelter, disregard of cleanliness, and the like, may occasion a vast amount of suffering which law can neither prevent nor punish. To a benevolent mind it is very distressing to behold the spectacles which often present themselves. Beasts of burden in thin, haggard condition struggling through the severe tasks assigned them, cattle exposed to piercing winds and biting cold, their lean shivering frames testifying that they lack food as well as shelter; sheep huddled up together to obtain a little mutual protection, and all evidently half starved; hogs rushing hither and thither in search of sustenance, and sending the air with their cries of distress; or fowl wandering about with drooping wings and dejected air, pecking in desperation at any object likely to afford a particle of food. Even the expression of countenance, worn by many animals, is one that tells of habitual suffering, while the foundation for unruly habits is often laid in disregard of their wants. There is great satisfaction in being surrounded by sleek, well-fed, happy-looking animals, who regard you as a benefactor and a friend. On the other hand, if a man has any feeling whatever, it must be a source of pain and discomfort to have suffering creatures about him, whose appearance reproaches him, and whose very helplessness is their most eloquent appeal for kindness and care. A right-hearted man will desire that the tenants of the farm-yard shall enjoy life as well as himself, nor will he be able to derive comfort from his bright fire-side and loaded table, if the reflection haunts him that his animals are shivering with cold and suffering from hunger.

Breeding and Matching Horses.

To the Editor of THE CANADA FARMER:

SIR,—I venture a word or two in your valuable paper on breeding and matching horses. I would say, farmers match your horses when young. It may be easily and cheaply done. When you raise a colt, put your mare again to the same horse, and get a span out of the same mare and horse. A year in the age is nothing when they come to be four or five years old. Let them grow up and run together. If they are the same colour, so much the better; but there are other points to be looked to before this. They are generally of the same temper, size, gait of travelling, &c., which are the best points in a span of matched horses for sale or for service. I have seen good hits made by putting a span of mares of similar proportions to the same horse. I would recommend these modes of breeding, as I have seen them productive of good results. Farmers are generally very heedless in breeding horses. One year they will put to a draught horse, next to a trotter, next to a blood, &c., and out of perhaps half-a-dozen colts, not have anything like a matched span. Don't mind a dollar or two extra in the service of a first-class horse; it will pay well if you follow it up and give your colts a good chance, the first year especially. This is the year to lay the foundation for a horse. A colt will do well with coarser fare afterwards, but it is bad economy to give him poor feed the first year. Work your mare as little as possible through the summer's heat. You cannot expect to raise a good colt and work your farm with the same beast, unless your farm is a very small one. Some farmers try to do this, and they generally find themselves in possession of a walking skeleton in the fall, which will require the height of care and good feeding to get through the first winter, and then not be able to shake off his stunted appearance. It will pay to keep a brood mare on a hundred acre lot, and count nothing on her work the greater part of the year. In breeding, choose your horse for your purpose. If you want a horse for the team or plough, choose a clean-boned draught with all the life and action you can get. I don't mean to say that high-lived horses make good ploughers, but you need not be afraid of getting too much life in a draught animal. You cannot breed heavy enough horses for farm purposes from a common-sized mare. These second and third rate cheap general purpose horses, as they call them, that swarm the country, turn out to be too light, and make poor ploughers. We want deep cultivation for our exhausted soils, and therefore need heavy horses. I will say but little about carriage and trotting horses. I will leave it to faster men; but for my own use, would give the thoroughbred precedence over the coach-horse for this purpose.

York Township.

G. W. D.

Why is a pig the most provident of animals? Because he always carries a spare-rib or two about him.

The London Veterinarian learns from the foreign journals that the attempts to popularise the use of horseflesh have been very successful in Vienna. Several butcher shops have been opened in that city for the sale of this meat, under the authority of the Government.

THE LAST IRISH BULL.—The *Sporting Gazette* says:—"Our friends in Ireland seem quite prepared for the worst in respect to the ultimate extinction of the Irish race-horse, and to have made arrangements which will supersede the necessity of further controversy on the subject. At the Curragh Camp eight races were announced, and persons were informed that 'horses must be at the post at the advertised times, or the races will proceed without them.'"

"DID IT A PURPOSE."—A droll story is related of an honest old farmer, who, in attempting to drive home a bull, got suddenly hoisted over the fence. Recovering himself, he saw the animal on the other side of the rails, sawing the air with his head and neck, and pawing the ground. The good old man looked steadily at him a moment, and exclaimed:—"None of your apologies; you needn't stand there, you ugly critter, a bovin' and scrapin'—you did it a purpose, you old villain!"

HOW TO MAKE A HORSE'S MANE GROW.—In answer to Inquirer, "What will make a horse's mane grow?" I would recommend him to mix with one pint of bay rum, one ounce of sugar of lead, one ounce of lac sulphur, and one gallon of rain water. Shake well before using. Almost every day wet the skin at the roots of the hair. This mixture, well applied, will also prevent the shedding of the hair on man and beast, and restore it to its original colour. I have seen heads perfectly bald produce a new, youthful covering by this application in a short time.—S. W. JEWETT, in *Rural New Yorker*.

HORSES FOR THE PASHA OF EGYPT.—Several fine horses, one of them a superb stallion of the Suffolk breed, were sent out in the Alexandrian mail packet *Baroda* on Tuesday for the Pasha of Egypt. His highness has about 200 stallions and brood mares of the above-named breed. One stallion, intended for the Pasha, worth 120*l.*, sent out a short time ago, died on the voyage. He broke a blood-vessel, and died a frightful death, kicking an immensely strong horse-box to pieces in his agony. Eight valuable horses for the Pasha's stables, which were sent out in the *Ripon* a short time since, died on board in consequence of bad weather, and had to be thrown overboard.—*Manchester Examiner*.

ARRIVAL OF FOXES IN AUSTRALIA.—"We have to announce," says *Bell's Life in Victoria*, "this rather novel importation, which arrived safely by the ship *Susser*. Master Reynard and his two lady companions appear in excellent trim and condition, and evidently found very comfortable quarters in the long boat, to which locality they were condemned for certain reasons easily imagined. The Acclimatization Society will probably not regard their arrival in the colony with the same feelings as the Melbourne Hunt, and we believe the latter body have secured their safety by right of purchase. At the same time with the foxes there were shipped nineteen leverets, which have a 1 died; but out of twenty-nine partridges nine have come to hand: these birds have been bought by the Acclimatization Society. There was also a consignment of doves, thrushes, and carrier-pigeons, most of which survived the voyage out."

CANINE NEWSMAN.—I see in *The Field* of the 17th September an account of a canine postman. Mr. J. G. Overend, Great Yarmouth, has a canine newsman, which, like the postman, is a black retriever. He fetches the newspaper daily; starts about twenty minutes past one, and strange to say, like the other dog, he don't muddle himself in going, but returns home at a good pace, and is rewarded for his labour with a biscuit. One very singular thing is, that on Saturdays (market day) he visits a great many of his weekly friends. The owner loses sight of him for some hours, but he seldom fails in taking home *The Field* and *Star* newspapers at the proper time. Various circumstances have necessitated Mr. O. to change his news-vendor; the present one is the fourth shop the canine newsman has been a customer. This dog is also very useful in wild-fowl shooting; and he very much resembles the Yarmouth water-dog mentioned in Mr. Lubbock's "Natural History of Norfolk," being so fond of that element; summer or winter makes no difference.—YARMOU, in *London Field*.



The Dairy.

Managing Cows for the Dairy.

I propose to give some hints for feeding cows while giving milk. It may be more profitable to individuals to so feed as to produce the largest amount of milk or butter without regard to the continued usefulness of the animal as breeders or even milkers, but the country thereby loses the services of many fine breeding animals. This will more particularly recommend such feeding as shall promote a flow of milk only so far as is compatible with the continued usefulness of the animals both as breeders and milkers.

For summer feeding, good pasture with two quarts of meal per day given in two feeds, and made from one-sixth corn, one-sixth rye, and two-thirds oats, will be found more profitable and healthy than grass alone. If the pasturage is short, a great assistance will be derived from green crops: the best is fodder raised from sowing thickly, evergreen sweet or sugar corn. Large crops of this may be obtained either for summer feeding, or to be cured for winter feeding, with comparatively small expense, and where roots are raised with difficulty, this will be found the more profitable, and from a number of years' experience with both raising and feeding, I think the former to be preferred in most localities. It will produce richer milk than any roots except yellow carrots.

For winter feeding, good clover hay and corn fodder, meal mixed with bran shorts, middlings or canail, (the three latter names being given in different sections to nearly the same article, and varying in different mills from a very rich to a very poor feed). Meal from a number of varieties of grain will be found more healthy than from any other kind. That from Indian corn will usually give a large quantity of rich milk at first, but in most cases will soon induce an excess of flesh or fat, and a corresponding decrease of milk. Many valuable cows have been rendered valueless for milkers by one season's high feeding on Indian meal. Cotton seed and oil-meal will have much the same effect. Sometimes good cows will show an inclination to take on fat and increase in milk on the commencement of excessive feeding on rich feeds.

For a cow not in calf, or the first six months she has gone with calf, four quarts per day of one-half middlings, and meal from equal quantities of corn, rye and oats, will be as much as the average of cows will bear and prove lasting and profitable; it should be given on cut fodder, or cut hay, wet with hot water, so as to slightly steam, and fed in two feeds per day. Where roots can be raised with profit they will be found healthy, and will keep up a better flow of milk than most other kinds of feed, but they should be fed with other kinds. Wurzel and beets will increase the quality, but will not improve the richness, though the flavour will be benefited. Yellow carrots will give less increase in the quantity of milk, but they will improve both the quantity and quality of the butter, making it finer flavoured and higher coloured. Roots fed in large quantities alone will induce too large flow of milk at expense of condition. One feed on roots and of meal per day will prove better than either alone. Middlings of bran should be omitted when feeding roots, as both are loosening and may scour. Where there is a tendency to this, oatmeal is the best food, and it may be better to scald it.

Regularity of feeding is of the greatest importance for all animals, and is never more so than in feeding cows; they should have constant access to salt—rock salt is the best, and Turk's Island the best substitute; if they have it always before them, they will never receive injury from over-eating. They should be watered often and with water not too cold; the better plan is to have such arrangements as will give constant access to it, though if regularity is observed, the animal's appetite will soon accommodate itself to stated times. While the aim should be to make cows eat all the hay or fodder they can, they will fall much short of it if they are allowed to waste, or are fed

more at once than they can eat clean in a reasonable time. Feed oftener, and less at a time, and they will eat much more in the aggregate, and waste much less. If it is found the supply given is too large, it should be removed as soon as the animal has become satisfied, as nothing destroys the appetite sooner than rejected food lying in the manger. For successful winter dairying, a good, light, airy and comfortable stable is indispensable; care should be taken to keep it clean and well ventilated, guarding against currents of cold air blowing on the cows, and keeping their apartments too close and hot. Close, hot stables foster more diseases than exposure to cold.

For the treatment of sickness, blood-letting and purgatives should be discarded for kind, good and gentle nursing. Many fine animals have been sacrificed to doctoring that would have been useful for many years had nature not been called upon to combat both disease and debilitating medicines. Instead of purgatives, give injections of tepid water or castile soapsuds and bran mash. If the animal is sick, shorten the feed instead of tempting the appetite with stimulating foods. Keep them quiet, make as comfortable as possible, and otherwise trust to nature if there are any doubts as to what should be done. This opinion is formed after many years' experience with all kinds of animals, where this way has proved by far the most successful after a very thorough trial of both kinds of treatment.—*American Stock Register.*

Condensed Milk.

Most of our city readers have seen this article retailed from carts at their doors. In appearance it is a thick creamy-looking substance, of the consistency of molasses, which is afterward reduced to suitable thinness by the addition of water. The advantages derived from condensing the milk are that it keeps sweet much longer, and is perfectly pure. This last is not the least desirable quality, for the consumer adds as much or as little water as he chooses. We have used this milk in our family in large quantities for a number of years, and find it a very great convenience as well as luxury. For coffee it is far superior to common milk, and for young children, suffering with complaints incident to them, this condensed milk is invaluable in respect of purity; swill-fed, or otherwise impure milk, is the last thing to give a sickly, teething child.

The *New York Observer* contains an account of the process of making condensed milk at Gail Borden's factory, which is the one alluded to by us, and for which Mr. Borden obtained a patent through this office several years ago:—

"The farmers bring their milk daily, it is poured into an immense boiler, the superfluous parts driven off, and the condensation effected in a few hours. The details of the process are exceedingly curious and worth studying. Everything is conducted with such scrupulous regard to cleanliness, that the result is irreproachable. Even the large cans, in which the farmers bring their milk, are cleansed by steam before they go back. This prepared milk is sold daily in New York from door to door, as any other milk is, but its chief market is in the army, where it is a great blessing, as you will readily believe.

"The same process is applied to the juice of apples, and other fruits, and meats. Coffee is condensed in the same way. Indeed any article of food may be condensed by this summary operation, be reduced in bulk, with all its nutritious qualities preserved, and packed so as to be preserved fresh any length of time. To make the little cans, holding a pound each, a tin shop is at work constantly, and the workers are women exclusively. They are chiefly American girls, from eighteen to twenty years old, and as the machinery is driven by water and steam power, they have no heavy work on hand, and the business is admirably fitted to them. They make more than a dollar a day easily, and the shop makes about 8,000 cans daily. A carpenter's shop makes the packing boxes, and so the entire work, from receiving the milk to sending it off, is done in the factory, and this stands on the edge of the railroad at the depot, so that all labour of transporting is saved. My visit to this establishment was very interesting and impressive, for I do not recollect ever seeing a factory where so much order, cleanliness, and comfort were combined in a production so purely beneficial as this. It is the perfection of the art of condensing.

"Mr. Borden can condense 12,000 quarts of milk daily at this factory, and 20,000 in another at Brewster's station on the Harlem Railroad below, and there are four or five others in operation: one at Winsted, Conn.; one at York, Pa.; one at Livermore Falls, Maine; and two in Massachusetts. They will doubtless become more and more numerous as their great advantages and profits become known."—*Scientific American.*

Preparing Rennet.

The art of cheese-making consists in separating the casein combined with a certain proportion of butter, so as to preserve it in a concentrated and portable form for the food of man.

It appears that the most complete coagulation is effected by the agency of the prepared stomach of the calf or of the lamb, as used by the Stilton cheese-makers. The calf's stomach when prepared is called a vell, and is sold by most chemists in the dairy districts.

From these vells is made rennet.

In Cheshire the rennet used is made fresh from the vells every day. These, procured fresh from the butcher the previous year, are cleaned and salted and laid one over the other, with a layer of salt between each, in a deep earthenware vessel. They are taken out a month previous to use, the brine is drained from them, and they are spread out, covered with salt, and dried. Two bits of two or three square inches are cut off these and put into half a pint of warm water the day before use, along with a tea-spoonful of salt. This is sufficient for 50 or 60 gallons of milk.

In other parts rennet is prepared in the following manner: A brine is made strong enough to bear an egg; this is then boiled half-an-hour, and when quite cold put into a jar—the large olive oil jars holding about 30 gallons are very useful for this purpose; to every two gallons of brine are added six vells and one lemon sliced, which does away with any disagreeable smell. Spices, such as cloves, also, are added by some, as they keep the rennet in good condition, and give it an agreeable flavour. One ounce of saltpetre to every two gallons should also be added.

This should be prepared in February, and is a most essential part of cheese-making, and the greatest care should be taken that the vells are sweet. The rennet thus made exerts so powerful an influence as to coagulate the casein of 1800 times its weight of milk. The advantage of using the rennet in this form is that when once its strength is ascertained it can be used with confidence.—*J. T. HARRISON, before Royal Agricultural College, Cirencester.*

A VERMONT invention is a churn which makes butter from cream in one minute and a half of churning, and from sweet milk in four or five minutes.

In one of the courts of Hartford, Conn., a woman was testifying in behalf of her son, and swore that he worked on a farm ever since he was born. The lawyer who cross-examined her said:—"You assert that your son has worked on a farm ever since he was born?" "I do." "What did he do the first year?" "He milked," she replied. The whole court laughed heartily, and the witness was questioned no further.

ABOUT MILKING AND TALKING.—A correspondent asks:—"Does it affect the quantity of milk a cow will give if conversation is carried on between milkers when milking?" We do not think there is any doubt about it—especially when the dairy is made up of young cows. We would not have a loud-talking milker in the stable. And it would be better, without doubt, if conversation was entirely tabooed when milking. We remember some years ago, a dairyman assert at a meeting of a farmers' club, that he had discharged a man because he would talk and interrupt the milking in his dairy, and that in three days the increase in milk was equal to the man's wages. Such are important facts, if established.—*Rural New Yorker.*

BUTTER-PURIFYING MACHINE.—We have been shown a very ingenious machine for improving and purifying butter, patented by Messrs. J. & F. Hancock, of Dudley, Staffordshire, which cannot fail to be of much advantage for dairy and domestic purposes. The machine to which we refer is of the simplest construction, and by its means butter from the churn may be treated without the deleterious contact of the hand being necessitated, or may be made cool and firm in warm weather; and the housekeeper is enabled, when butter which comes from a distance is found wanting in proper sweetness, to restore it to the desired flavour. We were shown a goodly-sized piece of very salt butter put through one of the small machines for family use; and, after the process had been twice repeated, the butter came out firm, pure in colour, and almost perfectly fresh in flavour. These machines may also be used for mashing potatoes and similar domestic purposes. They have been largely introduced in England, and, we think, are likely to find their way into many of the dairies and private houses of Scotland.—*Glasgow Herald.*

Veterinary Department.

Anatomy of the Horse's Foot.

In describing the horse's foot, a division has been made of its parts into those that are sensible or sensitive, and those that are insensible or insensitive. The insensitive structures contain no nerves, bloodvessels, or absorbent vessels, whilst the sensitive structures are furnished with all these attributes of organization. The internal parts of the foot consist of bones, ligaments, tendons, synovial membrane, blood-vessels, nerves, and absorbents. The external parts of the foot consist entirely of horn, and receive the name of hoof. The hoof of the horse represents a sort of box or casement, which envelops the inferior extremity of the digit, and is applied in a very exact manner to the sensitive foot, being united to it in an intricate way by reciprocal depressions and elevations which fit into each other. The general form of the hoof is cylindrical, the oblique section being the solar surface of the foot. By maceration, the hoof is divisible into three parts; these three parts are the wall, the sole, and the frog. The wall, which is also called the crust, is the part visible when the foot is on the ground; it is highest anteriorly, and decreases in height as it proceeds backwards. At the posterior part, the wall takes a sudden inflection inwards at an acute angle; these inflections are continued inwards to the centre of the foot, where they unite with the insensitive sole. The angle of inflection receives the name of heel, and the portion inflected is called the bars. The toe forms the bow or front of the hoof, and comprehends about two-thirds of the superficies of the wall. In the fore feet, the toe is thicker in substance than either the quarters or heels, but in the hind foot the toe is generally thinner than the heels and quarters. In describing the wall, it is generally divided into the toe, the quarters, the heels, the superior or coronary border, the inferior or solar border, the laminae, and the bars or appendages.

The wall is connected superiorly (around the coronary) with the skin, inferiorly with the sides of the frog, and internally with the sensitive laminae. The quarters are the portions of the wall between the toe and the heels; the heels are the two protuberant portions of the wall by which it is terminated posteriorly,—they are the thinnest and shallowest part of the wall. The external surface of the wall is smooth, and consists of a thin cuticle, and this cuticular covering is continuous with a white band extending around the superior or coronary border, called the coronary frog-band. The internal surface of the wall presents throughout its whole extent parallel plates or laminae semi-transparent processes of horn, between which are received plates of a similar form situated on the external surface of the *os pedis* or coffin bone, and called the sensitive laminae. The superior or coronary surface of the wall internally presents a depression which is sloped downwards or inwards, forming a groove or gutter, into which is lodged the coronary ligament or substance. This groove presents numerous minute orifices, into which are inserted the secreting villi of the coronary substance. The inferior surface of the wall is in contact with the ground, and to its circumference is united the circumference of the sole. The inferior surface is the part to which we attach the shoe; it grows thicker and more exuberantly around the toe than in other places, and from its projecting beyond the sole presents a suitable hold for the nails of the shoe. The sole is the thick plate of horn comprised between the inner circumference of the wall and the bars, and occupying the inferior portion of the foot. On examining the sole, it presents two surfaces, and a greater and lesser circumference. The external surface forms a sort of vault more or less concave. The internal surface presents numerous minute orifices, into which are inserted the vascular papillae of the sensitive sole. The larger or external circumference of the sole is inserted into the inner surface of the inferior border of the wall; the inner or lesser circumference presents a deep excavation the shape of the letter V, into which pass the bars; the remaining portion is filled up by the horny frog.

The frog is the mass of spongy horn of a somewhat triangular form situated between the inflection of the bars. The inferior surface of the frog presents a triangular cavity, broadest when the foot is well formed. This cavity is called the cleft of the frog. The cleft is separated by two projections or branches, which unite anteriorly and diverge posteriorly, joining the heels. At the sides of these branches are two lateral clefts separating them from the bars; superiorly these branches are attached to the bars, forming the commissures of the frog. The superior surface of the

frog, like that of the sole, presents minute orifices for the insertion of the vascular portions of the frog. This surface also shows a triangular longitudinal hollow, divided posteriorly by a long narrow conical projection called the frog stay. The frog stay corresponds to the cleft on the inferior surface of the frog, and establishes a firm union between the horny and fatty frog. The heels or bulbs of the frogs are the posterior protuberant parts embraced by the heels of the wall. These bulbs are continued around the superior surface of the wall by a broad thick band, called the coronary frog-band serving to unite the cuticular covering of the wall with the cuticle of the leg.

Occupying the concavity, on the superior surface of the wall is the coronary substance or ligament, which is made up of a fibro-cartilaginous band united to the coffin bone by dense cellular tissue. Resting on this band is a plexus of bloodvessels, and the whole is covered by a cuticular coat very vascular, and covered with small villi, which enter into the pores on the superior surface of the wall. This substance is continuous with the sensitive laminae, which are united to the coffin bone through the intervention of a dense fibrous membrane in which ramifies the bloodvessels of the bone. The sensitive sole is made up of a very elastic vascular membrane, and covered with a cuticular coat possessing villi, which penetrate the foramina of the inferior surface of the coffin bone. The fatty or sensitive frog occupies the posterior and central part of the foot, and is bounded superiorly by the perferous tendon, laterally by the lateral cartilages, and inferiorly by the horny frog; also in continuation with the sensitive sole and coronary substance. The fatty frog is made up of a thick layer of a soft, greenish, elastic substance, and above this layer is a plexus of bloodvessels surmounted by fibro-cartilage, and covered by a cuticular covering with its vascular villi.

REMOVABLE HORSE-SHOES—*Le Genie Industriel* says that two horse-shoers of Paris, M. Lefevre and M. Guerin, have invented a horse-shoe to be attached temporarily by any traveller whose horse should cast a shoe on the road at a distance from any blacksmith's shop. It is fitted with straps by which it may be readily secured to the foot. The inventors suggest that it will be found convenient for cavalry on a march.



The Apiary.

Straw Bee Hives.

A CORRESPONDENT of the *Dollar Newspaper* thus sets forth the advantages of straw bee hives:—

"Straw as a material for bee hives seems to have been formerly in much more general use than at present. Bees then seemed to prosper with little or no care on the part of the owner; indeed, many, deterred by superstitious notions, never presumed to invert a stock even for examination, but allowed it to take its chance nearly or quite as undisturbed as if buried in the depths of the forest. How bees could thus subsist, swarming and multiplying their numbers in defiance of the external foes and internal tendencies to disease with which they have ever to contend, I presume may be explained in part, at least, by attributing their prosperity to the straw hive thus employed.

"Waiving this question, however, for the present, it is acknowledged, I believe, by the leading apiculturists of the country, that if straw could be advantageously applied, no other available material would surpass it. Says the Rev. L. L. Langsroth, on page 331 of his *Hive and Honey Bee*: 'Straw hives have been used for ages, and are warm in winter and cool in summer. The difficulty in making them take and retain the proper shape for improved bee-keeping is an insupportable objection to their use.' Mr. L. Quinby gives his experience as follows: 'A few years since, in connection with a partner, I purchased twenty-two straw hives. These, with forty made of wood, equally as good in respect to the number of

bees and stores, were placed in one yard. As the swarming season approached, the straw hives indicated the strongest colonies. The first five swarms were from the wood hives, and when seventeen had issued, thirteen had come from them. All sent out swarms but two or three, while fully one-third of the wood hives failed to swarm at all through the season. Here was an advantage in swarming, greatly in favour of straw hives. We kept some of these hives several years, which continued to maintain, in his respect their superiority. Since our trial of them, I have inquired of many who have had them in use, and all testify to their early swarming. I think it would be safe to give 8 or 10 days at least as the average time that these will swarm before others.'

"The superior value of early swarms will not be questioned. As swarming generally takes place in the height of the honey harvest, when a strong colony will often collect three pounds per day, it follows that a gain of ten days in time is equivalent to twenty-five or thirty pounds of honey, which is again virtually equivalent to nearly as much in the surplus boxes to be put on, after the hive is filled."

Non-Swarming of Bees.

MR. MINER, editor of the *Rural American*, Utica, N. Y. says:—

This season has been a remarkable one, in regard to bees swarming in Central New-York. In some cases not a swarm has issued. We have about 40 hives of bees, and have not had a single swarm, such a circumstance never before occurring in our own apiary. The reason why the bees have not swarmed in our apiary, is the fact that no drones have been reared in it this season. We never before, in 25 years' experience, knew of such a circumstance with our bees. Why no drones were reared we cannot tell; but without drones swarms are useless, as the young queens cannot be impregnated; as the bees knowing this fact, destroy all young queens—if any are produced—and in the absence of queens no swarms issue.

Similar complaints are made in England. In answer to a statement of a correspondent about the failure of his bees to swarm, the Editor of *The Field*, London, says:—

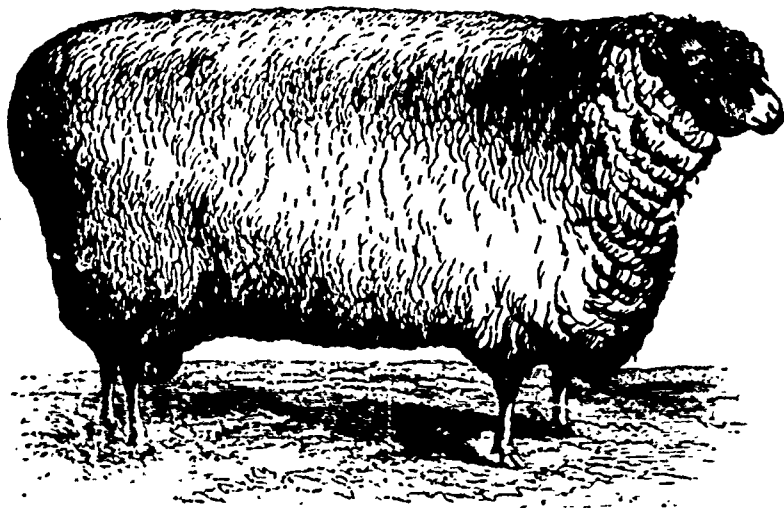
"We have known an apiary of twenty or thirty hives remain without a swarm during an entire season. Queen-cells are generally formed, and young queens partially reared; but it not unfrequently happens that if unfavourable weather occurs at the time when the swarms might be expected to go off, these young queens are destroyed, and no swarms issue. Non-swarming stocks are the most valuable for honey-collecting purposes, if properly supered. If the bees continue to crowd outside, it will be found advisable to raise the hive by the addition of an cke or second hive below. Near London the season has been very strange. During the first fortnight in May the bees collected large stores, and a great number of swarms issued; since then the weather has been cold, but little honey has been collected, and the swarms have been much fewer. The white clover has now come in a bloom, but there have been no honey-collecting days; and unless we have some hot weather with the lime blossoms and during the remainder of the clover season, the honey harvest near London will be a very poor one.

BEES IN WISCONSIN.—A bee-keeper from Manitowoc county, Wis., informs us that though many swarms perished last winter, the bees have done remarkably well so far this season. They have swarmed but little, but have gathered honey faster than he ever knew them before. He states as somewhat remarkable that they killed off the drones early in the spring.—*Prairie Farmer*.

ACTION OF LIGHT ON HONEY.—Honey fresh from the comb is a clear yellow syrup, without the trace of solid sugar in it, but upon straining it gradually assumes a crystalline appearance, and ultimately becomes a solid mass of sugar. It has not been suspected that this change was due to a photographic action, but this appears to be the case. M. Scheibler has inclosed honey in stoppered flasks, some of which he has kept in perfect darkness, whilst others have been exposed to the light. The invariable result has been that the sunned portion rapidly crystallized, whilst that kept in the dark remains perfectly liquid. It is thus seen why bees are so careful to work in perfect darkness, and why they obscure the glass windows which are sometimes placed in their hives. The existence of their young depends on the liquidity of the saccharine food presented to them, and if light were allowed access to this, the syrup would gradually acquire a more or less solid consistency, and would seal up the cells.—*Sci. Am.*

Sheep Husbandry.

FIRST PRIZE COTSWOLD RAM, AT THE PROVINCIAL EXHIBITION, HAMILTON, 1864.



HEREWITH we present our readers with an engraving of the remarkably fine Ram, which took the First Prize in the aged Cotswold class. This animal is the property of F. W. Stone, Esq., of Guelph. He weighed when on exhibition, at Hamilton, upwards of 400 lbs., and deservedly attracted much attention. For a full account of the Cotswold breed of sheep, we refer our readers to an article in our last issue.

Winter Treatment of Sheep.

BY T. M. YOUNGLOVE, STEUBEN CO., N. Y.

HAVING practised for several years the system of keeping my sheep in close confinement during winter, I do not hesitate to recommend it to others. For two winters I kept one hundred wethers under a hay mow, 20 by 30, with a side rack round the out side on a still, with a double rack through the centre which divided the flock into fifties. One 4½ foot door was opened at a time, for an hour in the middle of the day, giving its fifty an opportunity to go into an open yard for water. All the rest of the time they were kept shut close, with only just room to lie down. They did better than those with more room. My ewes were divided into flocks of twenty-five, and were penned by turning two open racks at right angles, giving the ewes a chance at two sides of a rack.

These are watered by setting a box 15 by 24 inches, and 8 inches deep, in the rack and the water carried to it with a pail. This allows two flocks to drink from one box. Before foddering, the box is turned over and left in the rack. A little meal thrown into the box will stop all leaks.

Ten good sized ewes will drink three pails of water but will do very well with half that amount daily. The watering should be during the warmest part of the day, and once a day is sufficient. Care should be taken not to over-feed.

I think it is equally as detrimental to over feed sheep on hay, as it is horses or cattle on grain. It is not so well to let a horse or an ox have free access to the oat bin, as to give them a regular meal twice a day. So with the sheep, they should only have what they can eat up clean, in from one hour to one hour and a half. Some practice giving the sheep more than they want, and then clean out the racks for the colts. A careful feeder will only give what is needed, and with a very little care can come very near the actual wants of the flock. I do not hesitate to say it is far better for the flock than over-feeding, whether fed on hay, straw, or grain.

The practice of stacking sheep out, and at best give them an open shed, cannot be too highly censured. Sheep are very regardless of the future. They will frequently stand out during a sharp rain and chew the cud, when they might as well seek a near shelter. The fleece forms a temporary protection, and a sheep feels the storm very little through it, unless accompanied with wind or severe cold. It is the days that follow a wet fleece that tell on the health and constitution of a flock of sheep. It is this that the flock-master must look to with especial care, as the sheep has only the instinct for his present wants. The future depends on the shepherd. The objection most frequently urged against this method of wintering sheep, is that the ewe has too little exercise for the health and strength of the lamb. I feared that

myself, but practice has proved my success, as my flock of lambs can now speak for themselves, as nearly as a dumb animal can speak. They can at least speak understandingly to the eye of a practical wool grower. The flock should be foddered soon after daylight in the morning, and early enough at night to allow them time to clean all up before dark. Sheep kept in this way will have a sprightly look from the eye, and when standing at ease are inclined to stand with fore and hind feet apart. While those exposed to all the inclemencies of the weather, will stand with all the feet close together, roach back and dull eye. Too much ventilation is a source of annoyance to a flock. When I keep all the sides closed for weeks, my flock does better than when left open.—*Amer. Stock Jour.*

A SHEEP BARN.—Suel Foster writes the *Country Gentleman* as follows:—Mr. H. Cable, on the high prairie in the northwest part of Scott Co., Iowa, this year built a sheep barn 44 by 120 feet, with a straw thatched roof. It took about 16 acres of winter rye straw; and it took three men and a boy 10 days to put it on. How long will straw thatch last? If it will last but 10 years, half as long as shingles, it will be good economy for our prairie farmers to use it.

Mr. Cable kept 2,000 sheep. He had an oak post 52 feet high, planted firm in the ground, and firmly braced up, with winding stairs up it like the "Biddle" stairway at Niagara. From the platform on the top we could see his flocks in any quarter section of his estate, and many farms and villages in the counties of Scott, Clinton, Cedar, and Muscatine.

Correspondence.

DRYING APPLES.—"Would-be Housekeeper" asks:—"Can you or any of your correspondents tell me what is the most approved method of drying apples, sweet or sour?"

WHITE WILLOW CUTTINGS.—"Thomas Collins," of McGillivray, enquires how he may obtain white willow hedge-plants.

ANS.—Cuttings of the white willow have been advertised in THE CANADA FARMER as for sale by F. S. Pike, of Painesville, Ohio, and John Calcott, Lambeth, C. W. See advertising columns of Nos. 12 and 14 of this journal.

TURNIPS IN THE BACKWOODS.—"J. Coutts," of Ben-linck, writes:—"I wish to acquaint you how some of the backwoodsmen of Ben-linck can grow turnips. Some that grew on my farm this year weighed from twenty to twenty-two and a quarter pounds, without the top or point. A field of three acres is all about as good as that. They are of the purple-top Aberdeen variety. I should like to know if many of your subscribers can beat that."

DISEASE AMONG SHEEP.—"Wm. Niles," of Dorchester, has lately lost a number of valuable sheep from some unknown disease. "They first appear very dull and stupid; then lose the use of their fore parts, in which state they remain apparently insensible of pain for twelve or fifteen hours, when death ensues. He hurried to bleed them, but the blood would not flow. The liver seems to be diseased. Can any of the readers of THE CANADA FARMER give us any information about the disease, or a remedy for it?"

VETERINARY BOOKS.—A subscriber writes from Rice Lake Plains: "Can you or any of your numerous readers inform me where the books required by a good English scholar, in a full course of a *Veterinarian Surgeon*, could be obtained—whether they could be got in this country, and at what price?"

ANS.—The books required by a veterinary student can be obtained through any of our city booksellers, and will cost about forty dollars.

FROZEN PUMPS.—"H. L. Boss," of Burford, says:—"As it is near the time when pumps are apt to get frozen up, and many are greatly annoyed thereby, I will give you my plan of guarding against the evil: Get a wood or metal faucet, insert it in your pump log low enough to be out of the way of frost. Get your blacksmith to attach a handle of ¾ rod, long enough to reach say six inches above the top curb. You can then turn off the water on frosty nights, and turn on in the morning; or turn off and on at your will. The whole cost is about 37½ cents. You will find this cheap, simple, durable, and very convenient."

HYDRAULIC POWER.—On this "vexed question" "Nota Bene" observes:—"T. A. Q. M." thinks that the hydraulic press is not commonly understood. The readers of THE CANADA FARMER would be wiser if he would show where the power originates, and the relations of time to power,—points to which distinct reference was made in my note to which he refers. While 'machinery in general' requires speed, there will be small demand for the application of hydraulic power. Any one can apply this 'powerful agency' to machines which require to act with great power through a small space. I shall be glad to hear the results of an actual trial of a hydraulic stumping machine."

YOUNG APPLE TREES AND GRAPE VINES.—"A Subscriber" asks:—"1. In what manner should a person go to work to raise a nursery of apple trees? 2. What kind of soil is best adapted to it? 3. Which is the best way to plant grapes—take the cuttings and plant them, or set out the roots?"

ANS.—1. Procure good, fresh seed, and sow it on ground that has been most thoroughly underdrained and subsoiled. It is most convenient to sow in drills three feet apart, and cultivate with horse power. When two years old they will be fit to graft with the desired varieties.

2. The soil should be a rich loam, not heavy clay nor light sand.

3. By all means plant grape vines that are well rooted. Some varieties grow very poorly from cuttings, and at best there is a delay of not less than two years in obtaining fruit.

EVERLASTING LAYERS.—"George Clark," of Mt. Elgin, Deerham, says:—"I see in last CANADA FARMER, that Mr. Veitch's hens, of Brockville, averaged 145 eggs each this year. Now, sir, we can beat that. We have two hens that layed 464 eggs this season. The name that we have for them is 'Everlasting Layers.' They commenced laying about the middle of March, and quit about the first of November."

NOTE BY ED. C. F.—This appears to us a pretty large egg story. In all our experience with hens, we never met with anything approaching to it. It is one egg per day, week-days and Sundays, for each hen, and three or four over. We fear our correspondent has made a mistake, either as to figures or dates, but since he gives his name and address in full, we insert his statement with a note of exclamation on our part. Such hens may well be called "everlasting layers." We should like to have some of the breed right well.

MILL FOR GRINDING FLAX SEED.—"J. B. T.," of London, writes:—"Can you inform me where I can procure a machine for grinding flax seed for farm use, and the price? It is well known that if you feed flax seed, even boiled, to stock, a great portion will pass through the animal undigested, and therefore a small, cheap flax-grinding machine will soon pay for itself in the saving of seed."

ANS.—We cannot say where such a mill can be had. Our American neighbours manufacture portable mills for grinding coarsely feed, but we doubt these would not answer the purpose. Flax seed is of such an oily nature that we should fear mills of the description we have referred to would soon become clogged up, and thus be rendered useless. Flax seed is found to answer well mixed with steamed food, and we should think that steaming or boiling the seed would, to some extent, obviate the difficulty spoken of by our correspondent. The best plan of all, however, when that is practicable, is to have the seed crushed at an oil mill, and to feed out the refuse—the oil-cake, as it is termed.

QUERIES ABOUT TURNIP CULTURE.—"Henry N. Brush," of Brush's Mills, N. Y., asks:—"Will you please inform a subscriber in the United States, through THE FARMER, the way in which farmers in the British Provinces preserve their large crops of turnips through the winter; also the best season for sowing ruta baga and other field turnips, with the sorts most approved of by the best cultivators?"

ANS.—Our farmers store their turnips either in root cellars or in out-door pits. In either case all that is necessary is just to exclude the frost, and provide ample ventilation. The ruta baga or Swede turnip is sown in this country about the middle or latter end of June. The improved Purple-top, Skirvings, Laing's, Matson's, and King of Swedes, are the leading varieties. The Yellow Aberdeen and large White Globe may be sown somewhat later than the Swedes. They are useful to re-sow patches that have failed, but they will not keep through the winter as the Swedes do. Our correspondent will gather many interesting particulars respecting turnip culture in this country from an article in our last, headed "Great Turnip Match."

SALMON IN LAKE ONTARIO.—"F. H. Lynch Staunton," of Saugeen, writes as follows on this subject:—"In your issue of November 1, I notice that "H. P. H." doubts the possibility of introducing salmon in Lake Ontario. I am not an old Canadian, and consequently speak under correction; but I am informed that not very long since the fish did ascend so far, and that in considerable numbers. If this is true, of course it settles the question, for "H. P. H." gives no reason why the thing should not be successful, except that the salt water, essential to salmon, is distant 1,000 miles. It is nothing of the sort; but if it were, what is 1,000 miles to a salmon? Why the little herring swims three times that distance when he visits the coasts of Britain, and that, apparently, without any such plain inducement as the salmon's, and through a stormy sea. "H. P. H." seems to think it necessary to tell us that the salmon must go to the salt water. This is true; but the fresh is, at least, equally essential. He spends three months of his time in it, and therefore has abundant time to perform the longest journeys. I do not know the price of salmon now in London. If it has fallen to 3d. per lb., it is wonderful; but as it must be due to the increased productiveness of the Scotch and Irish fisheries, we should see in this a further reason for exerting ourselves to obtain such advantages for Canada."

HEDGES.—"D. Y. McMullen," of Picton, C. W., writes that he wishes some information respecting the growing of hedges in Canada. On page 28 of the present volume he will find some remarks on this subject, to which we cannot now add much that will materially aid him. The truth is, very few hedges have been planted in Canada, and until some further experiments have been made, and the value of the several plants for this purpose tested by actual attempts to form them into hedges, we shall remain where we now are, in great uncertainty.

The buckthorn has been used for the purpose, and a sample of such a hedge may be seen on the grounds of Mr. George Leslie, near Toronto. How well it will succeed in other localities remains to be tested, but from the well known habits and hardihood of the plant we have every confidence that it will answer a very good purpose. We know of some experiments being made with the berberry for hedging, and believe that this also will be found to be very useful

for this purpose, but the experiments are too recent to establish anything for or against.

The lawthorn has been tried more than any other plant, and in every instance that has come to our knowledge it has disappointed the expectations of the planter. We have no hope that it will meet the wants of the Canadians as a hedge-plant, and cannot advise any one to set it. We are not aware that young plants can be procured anywhere on this side of the Atlantic. The seed will grow, but it must first lie in the ground for two years. Plants of the buckthorn and berberry can be obtained at low prices from all our principal nurserymen.

The "Canada Farmer."

Subscribers to THE CANADA FARMER will please observe that the year closes with the issue of the 15th December. No papers will be sent after that date unless paid for in advance. Parties who are getting up Clubs, as well as single subscribers, will please note the fact and govern themselves accordingly. The "Canada Farmer" is the cheapest Agricultural Paper in the world, and we find it a necessity arising from the low price at which it is furnished, that it should be invariably paid for in advance. For Club terms, see advertisement in another part of the paper.

Bound Volumes.

The current volume of "The Canada Farmer," consisting of 24 numbers, and comprising 384 pages of reading matter, will be issued in a bound form so soon as the 24th number is completed. The binding will be charged 30 cents in addition to the subscription price, making \$1 30 in all for the bound volume.

The Canada Farmer.

TORONTO, UPPER CANADA, DEC. 1, 1864.

Learning to Farm.

As compared with the facilities connected with other avocations, we are sadly deficient in means and opportunities whereby our young men may learn how to farm. There are, indeed, books and periodicals from which the theory of agriculture and many of its manipulations may be learned; but only very partial use is made of these, and multitudes of farmers are quite content to go through the routine of husbandry operations, without understanding principles themselves, or explaining them to their labourers and sons. Many of the existing treatises on agriculture are not sufficiently simple and popular in their language to be generally useful. They are too scientific and technical for the purpose. A working farmer needs something interesting and entertaining to read when his day's toil is done. A heavy scientific work will soon send him to sleep. An English labourer, we are told, who can neither read nor write, will even after a hard day's work, listen with delight to the writings of such a man as Dickens. Though disquisitions on farming cannot be written so as to possess the witchery of a clever story, it is manifest that they might be far more simple, lively, and entertaining than they are. Such books as "My Farm of four acres," "My Farm of Edgewood," &c. show that very much can be done in that direction, when suitably gifted writers take up the subject. A cheap series of sprightly agricultural works for the million would be a great boon. Meantime journals devoted to farming are doing much to supply a felt deficiency, and are acting to some extent very efficiently the part of educators of the people in the theory and practice of agriculture.

But books and periodicals, however adapted to the desired end, and however eagerly and carefully read, cannot fully meet the necessities of the case. Before embarking in farming as a business, it is very desirable that some practical knowledge of it should be

acquired, and there seems no good reason why there should not be agricultural as well as commercial colleges, and apprenticeships to farming, as well as to other avocations. Our American neighbours are setting us a fine example in the matter of Agricultural Colleges. Nearly all the Northern States have institutions of this kind, either in actual operation, or in process of establishment. In England one or two of these colleges have been started, and we observe by recent papers that the Rev. J. L. Breton has commenced the Devon County School of Agriculture, which appears to be a subscription school, supported by the landed proprietors of the County of Devon. This institution is specially designed to impart agricultural education, but to what extent we are not informed. It is being strongly urged in England that examinations of scholars in these Colleges and Schools of Agriculture, should be followed by "badges of proficiency," and "degrees." But at these institutions, were they ever so widely diffused, the young farmer can only obtain as it were, the key for future progress in the science, history, and practice of his art. Some time ought to be given, under the guidance of a competent instructor, to the actual business of the farm. In Britain, where high rents and taxes require the most rigid system and the highest culture, it is very common for experienced and intelligent farmers to receive pupils for one or more years, and sometimes considerable fees are paid for the tuition received. Mr. Stephens, in his "Book of the Farm," highly recommends this system, and gives it as his opinion that three years' apprenticeship is little enough to give a pupil an adequate knowledge of farming. In this country there are many intelligent farmers quite competent to take young men for training, and from the comparatively higher price of labour in this country than in England, instead of fees being required, wages would be given. The idea is but too prevalent that anybody, however stupid and ignorant, can farm, and we are persuaded, that to elevate the agricultural classes to their true position, to raise farming to its proper place in public estimation, and to develop the resources of the soil, it is absolutely necessary our young farmers should have some opportunities for thorough training. Could they behold and take part in the operations of a well-managed farm, have the reasons of the various methods pointed out to them, master the principles on which the various processes are founded, and witness the results of thorough culture, the advantage they would derive would be incalculable. They would learn to respect and love their calling, prosecute it with enthusiastic zest, and be spared much mortifying disappointment, and many disheartening failures.

IMPROVED STOCK FOR PONTIAC.—We are glad to find that at the last meeting of the County of Pontiac Agricultural Society, it was decided that two bulls and a cow of improved breed should be purchased by the Society. This is a step in the right direction.

SALE OF SHORT HORNS IN N. Y. STATE.—The sale of Durham cattle, the property of Mr. T. L. Harrison and the late Col. Rotch, which was recently advertised in our columns, came off on the 16th ult. and was well attended. Thirty-four animals were sold, at an average of about \$150 per head, the highest figure reached being \$525 for the two-year old heifer, "Lady Susan." The aggregate amount realized by the entire sale was \$5,035. Messrs John Ashworth of Quebec, John Pipe, of Guelph, and John Peters, of London, made purchases of choice animals.

NEW SCUTCHING MILL.—We learn from the *Cobourg World* that Mr. J. H. A. Hervey has undertaken to erect a Scutching Mill and Machinery in the Township of Haldimand; and our contemporary is urging the farmers in that region to do their part to supply the raw material the coming season. Mr. Hervey already has a manufactory at Maitland, C. W., where three hundred acres of flax have been grown the past season. The experiment has succeeded so well that instead of three hundred acres being devoted to flax next year, the prospect is that fully a thousand will be sown to that crop.

Agricultural Intelligence.

The Flax Interest.

COMPLIMENTARY DINNER TO MESSRS. PERINE AND YOUNG.

We learn from the *St. Thomas Home Journal* that on Friday evening, the 11th ult., the "Thompson House" was crowded with the leading men of St. Thomas, assembled for the purpose of doing honour, by means of a complimentary banquet, to the enterprise of Messrs. Perine & Young, in establishing a new branch of manufacture in that town. The chair was filled by Dr. Southwick, Mayor of the town, and the vice-chair by Colin Munro, Esq., sheriff of the county.

The VICE-CHAIRMAN proposed "Our Guest." He said they had met for the purpose of doing honour to the very enterprising firm of Messrs. Perine & Young. About the time of the building of the Great Western Railway, the Perine brothers came to Canada, and took an active part in its construction. They saw in Canada an open field, and a paying one, in which they might use their capital to advantage. They came, and they prospered. They very quickly found that railway jobs in Canada were not any too remunerative, and they turned their attention to the growth and manufacture of flax, and since then have established in different parts of the Province branches of the flax manufacture. The branch lately established in this town was the eighth that had been put into successful operation by this enterprising firm. The surrounding country was as deeply interested as the town in this enterprise, and gentlemen from the country who were present would lay the advantages of flax-growing before the meeting. Messrs. Perine & Young, during the past year, had expended the large sum of \$11,000 in our midst, and it was our obvious duty to show our marked appreciation of such enterprise. The county of Elgin is unsurpassed in its excellent adaptation for flax-growing. The rebellion at present raging in the United States had raised the price of cotton to such a height that flax would be rendered more than ever remunerative. Messrs. Perine Bros. saw these advantages, and entered into this branch of business. It is true that they were influenced by motives of personal profit, but such are always an element of enterprise. Finding themselves unable to carry on so many branches alone, they sought a partner, and succeeded in getting a very able one in the person of Mr. Young, who, by the way, is a Scotchman, so that we have united in the firm the go-ahead principles of the American with the cautious and keen sagacity of the Scotchman. The firm had introduced many new improvements into their mill machinery. Great success had attended them during the last year, which, no doubt, would be increased during the coming one. The enterprise was not only a benefit to themselves, but would prove of inestimable service to us, inasmuch as they required tradesmen of nearly every kind to assist in carrying on the business.

Mr. Young, in responding, said he was, on his part, very much gratified for this kind expression of their good-will, and for the uniform kindness they had experienced from all. The county he said was well fitted for the growth of flax, and the seed produced, even this adverse season, was of a superior quality.

Mr. PERINE then rose, and said it was the first time he had the pleasure of meeting the majority of those assembled. He had first come to St. Thomas simply on a visit to his esteemed friend, the Rev. George Cuthbertson. He saw that the county was well adapted to flax culture, and that the prospects were good. He at once entered into the business, and for that purpose associated Mr. Young with him. He (Mr. P.) was the first person who entered into the flax business in Canada. He came into the Province in 1851, to assist in the construction of the Great Western Railway, but finding by experience that public works in Canada were not very profitable, he concluded to look for a better business, and had chosen the manufacture of flax. He first started it in the county of Waterloo. The fine water privileges that obtained there, and the preponderance of an industrious German population, were alike particularly adapted for the work. He began by sowing with his own hands one hundred bushels of seed the farmers bring at that time very unwilling and very much prejudiced against it. From year to year the quantity produced increased until he might say, it had become an established branch of manufacture in the country. Up to 1860 there had been but little chance of success, but since

the price of cotton had increased as a result of the American war, it had greatly improved, and he had confidence it would prove a successful branch of manufacturing industry in Canada. He was glad that St. Thomas had shown such good judgment in countenancing the culture of flax, and had so earnestly seconded their honest, humble efforts to do good by promoting a useful branch of manufacture among them.

Mr. RANDALL, in replying, to the toast, "Our friends from a distance," said we could not well separate the manufacture and the growth of flax. Twenty-five years' experience as a spinner had taught him that we could manufacture flax as easily as cotton. This country is as favourable as any to the growth of flax, and could as easily manufacture it. Mr. Randall made a practical speech, and concluded by wishing the flax enterprise every success.

Mr. SCARBOROUGH of the Union Mills, responded to the toast, "The flax interests of the country," in an excellent and forcible speech, in which he stated that he was connected with the flax interests of the county as a manufacturer. The flax crop, he observed, was always a reliable one, and extensively cultivated would prove of inestimable value to Canada. Messrs. Perine & Young had done much to advance the flax interests in this county, and he for one expected to derive benefit from having, as near neighbours, men of their practical character and enterprise. Canada was a fine field for the growth of flax; but we required more than its growth and cultivation—we required manufacturers to produce a larger amount of home consumption.

Ploughing Match in the Gore of Toronto.

A PLOUGHING match was held on the 16th ult. at Richview, Toronto Gore, on the farm of Mr. John Davis; and, taking everything into consideration it was a decided success. In the first place, it was the first of the kind got up in the neighbourhood; and secondly, the snow of the day previous had to be contended with; and it would have been a larger match if the weather had been more favourable. However, as it happened, the committee and ploughers were determined to make the most of it, and they came to the conclusion that, sooner than be balked, they would scrape the snow off the lots to be ploughed; and at it they went, and by attaching a couple of horses to as many scrapers, by twelve o'clock they had the field ready for the ploughs to start. A great many spectators made the remark that it was ploughing under difficulties, and no doubt with a great deal of truth, as many of the ploughmen brought their ploughs to the field in their sleighs. However, at a quarter past twelve, twenty ploughers started, and having four hours to plough the quantity allotted to each, over one-fourth of an acre, when the time was up and the gun fired there was not a solitary team in the field, showing a praiseworthy determination on the part of the ploughers to be no hindrance to the judges coming to a decision before night set in, which they (the judges) did, and to the general satisfaction of all concerned. The following is the prize list:

FIRST CLASS—open to all comers who would plough with metal-beamed ploughs—1st prize, Joseph Christie, Toronto township—a metal-beamed plough, steel mouldboard, presented by Mr. Butterfield, of Bradford. The plough used by this plougher was Mr. Butterfield's manufacture. 2nd prize, Charles Hunter, Toronto township—\$6 cash. The plough used was by the same manufacturer as the first. 3rd prize—William Blanshard, of the township of Seneca—\$1 cash. The plough used was the manufacture of John Abell, Woodbridge, Vaughan.

SECOND CLASS—open to all persons who had not taken a prize since arriving at manhood: 1st prize—Thomas Brunskill, Etobicoke—a metal-beamed plough, presented by Mr. John Abell, of Woodbridge, Vaughan. The plough used by the plougher was a wooden one, and manufactured and patented by Wm. Knaggs of Etobicoke. 2nd prize, Leonard Fligg, York township—\$6 cash. The plough used was iron, and manufactured by Peter Mallaby, Weston. 3rd prize—William J. Brown, of Toronto township—\$1 cash.

THIRD CLASS—open to all boys under eighteen years: 1st prize—Jonathan Akrow, Etobicoke—\$6 cash. The plough used was wood and the manufacture of Isaac Modlund, Brampton. 2nd prize—John Gilera, Toronto township—\$1 cash. The plough used was iron, Grey's pattern—imported. 3rd prize—John W. Weatherell, Etobicoke—\$2 cash. The plough used was wood, and manufactured by James Hayes, Etobicoke.

Weather and Crops.

"I," writes from Hay, Co. of Huron, Nov. 16, 1861. "Your 'Weather and Crop' correspondent, so far as the crops are concerned, finds himself at this season of the year like O'hello—his occupation gone." We have still weather, of course, but since I wrote last it has been so changeable, so disagreeable and unsettled, it would have been hard to have kept track of it and worse still to describe it. I have not seen so wet a fall during a residence of twenty-one years in Canada. We always used to have an Indian summer, less or more, but it appears that this year we are even to be deprived of that often short, but always sweet consolation. For these six weeks past rain and mud have reigned supreme; as a consequence, fall ploughing has been a poor job, and not near as much of it done as ought to have been. To keep our courage up, I hinted in my last that the tinkling of the sleigh bell would soon be heard. We are at it sooner than I expected. The great Canadian McAdam commenced operations in earnest last Saturday, and has kept adding a little each day since, till six inches of snow is the result. I had a sleigh ride to-day. This is not winter yet, I think, and many hope it is not, for but few turnips have been taken up."

"JOHN JOHNSTON" writes from Flos, November 22, 1861. "Among all the interesting communications that have appeared in THE CANADA FARMER, there is none that I have yet seen from Flos. The reason for this, I am happy to say, is not because our township is so barren that the farmers have nothing favourable to communicate. I am glad to say that the case is far otherwise. Flos is almost unrivalled in the county for the growth of spring grain, especially wheat; and for the last two years, fall wheat has done well in this locality. Many realized this year as much as thirty bushels per acre. There is a large surface sown this fall with winter wheat, and I hope that you may hear a good account of it during next spring and harvest. Potatoes, with many, are an excellent crop. Those who were fortunate enough to obtain a braird of turnips have good crops. There were some white globes grown on my farm this year that I think cannot be beat for size in the county. One which we had the curiosity to weigh went as high as thirty five pounds.

Our Township Show was held on the 11th ult., and was fairly attended by competitors and sight-seekers. Farm stock and dairy produce were commendably represented; but I am sorry to say that the cereals and horticultural products were entirely wanting. It is to be hoped that these will not be absent next year."

GONERICH CATTLE FAIR. The *Huron Signal* says: "The public fair on Wednesday, the 16th, was successful in drawing together a great number of cattle from all parts of the country. There could not have been less than between four and five hundred head on the ground during the day, but we are sorry to have to say that, owing to the inferior quality of a large portion of the stock, and the want of competition on the part of buyers, prices ruled low, and many farmers went home disappointed, without having had a bid at all."

FAT CATTLE SHOW.—The annual fat cattle show, under the auspices of the South Wellington and Guelph Township Agricultural Societies, will be held on the Fair ground on Tuesday, the 13th December. The following prizes will be awarded:—Best fatted ox, 4 years old and upwards, \$3; 2nd, \$2; 3rd, \$1. Best fatted steer, under 4 years, \$3; 2nd, \$2; 3rd, \$1. Best fatted cow, 4 years and upwards, \$3; 2nd, \$2; 3rd, \$1. Best fatted heifer, under 4 years, \$3; 2nd, \$2; 3rd, \$1. Best fatted beast of any class (in addition to the above), a sweepstake of \$2. Best pair of fatted sheep, of any age, \$3; 2nd, \$2; 3rd, \$1. Best pair of fatted sheep, under 2 years, \$3; 2nd, \$2; 3rd, \$1. Best fatted hog, \$1; 2nd, \$3; 3rd, \$1. Special prize for the best pair of fatted hogs, \$1. Special prize for the best pair of fatted Spring pigs, \$1; 0 best pair of fat turkeys, \$1; 2nd, 50c. Best pair of fat geese, \$1; 2nd, 50c. Best pair of fat ducks, \$1; 2nd, 50c. Best pair of fat fowls, \$1; 2nd, 50c.—*Guelph Mercury*.



The Black Knot.

We have received from "R. M.," of Rosebank, Prince Edward Island, a specimen of this disease, which he says has been spreading for the past three years amongst the plum trees of the Island, and with invariably fatal results, at least so far as his neighbours are concerned. In his own case he has been at the pains to cut off every branch, both great and small, on which it has broken out, with what success he is waiting to see.

From "G. M.," of Borelia, we have the complaint that this disease is ruining his plum trees, and from both come the inquiry what will cure it, or what will prevent it?

This disease has been a great source of annoyance to the cultivators of the plum, and many very profound articles have been written about it, in which hardly any two writers agree as to its cause or cure. If let alone, it is very sure sooner or later to kill the tree, and up to this time nothing better than prompt and thorough amputation has been discovered in the way of treatment.

As a preventative there is nothing positively known. By way of approximation, it is strongly recommended that the trees should be planted only in thoroughly drained soil, be supplied with sufficient fertilizers to keep them in a state of healthy growth, and the ground beneath be frequently stirred, and kept free from grass and weeds.

Some years ago the writer instituted a series of experiments to ascertain whether these excrescences were not caused by some insect, as are the galls on the oak and the like; but although many insects were found in these black knots, differing in species, genera and families, yet to none of them could these knots be attributed as a cause. The insects seemed rather to have chosen them as convenient places for their several purposes, than that they were caused by their agency.

A more probable cause than insect origin is to be sought among the parasitic fungi. These minute plants, so small as to be seen in many instances only with the help of the microscope, scatter their seeds or spores of such infinitesimal size that they find their way into the circulation of the trees and plants, and carried by the sap into the branches start there into growth, whenever conditions favourable exist, and produce such derangements in them as are perceptible by us, and often destructive to the trees or plants upon whose life they feed. To some of these parasites are we disposed to charge the presence of the black knot on the plum trees, but we are too ignorant as yet to speak positively on this point, much less to tell how their ravages may be prevented; indeed we barely know enough to say that by watching for their appearance and promptly cutting the knots away, without even waiting for them to become black, in all cases that have come under our observation, the disease has been kept in subjection, though not radically cured.

Specimen Pelargonium without Stick or Tie.

In selecting a cutting, choose a firm young shoot, take it out with a heel, dress off any raggedness, leave all its foliage entire, and insert it in a very small pot, in loam that has been thoroughly exposed to the action of the weather, and pure sand. These constituents of the soil should be used in equal quantities, quite dry. The pots being small, a single piece of crock is sufficient for drainage; fill the pot and dibble in the cutting just so deep as to leave the lowest pair of leaves above the surface, shake the soil well down, then place the pot for a few minutes nearly to the top in soft water. When wet through, take the pot out and set it aside to drain; then plunge it in sphagnum (moss) in a larger pot, and place it in a frame or house of a temperature from 60° to 60°, very near the glass, almost touch-

ing it, and frequently pour warm soft water into the sphagnum, but not into the cutting-pot.

In six or eight weeks, when the cutting has become a plant and grown two or three inches, cease watering, draw the pot entirely out of the sphagnum, and in a couple of days take the heart out, cutting immediately above the pair of opposite leaves nearest the surface. In three or four days a pair of shoots will have started, when a little water must be given and the pot re-plunged in sphagnum. In a fortnight the young shoots and leaves will be grown, when repotting will be necessary, which should be into a pot a size larger. Shake the soil off the roots, and trim them a little with a knife. The compost should be six parts loam, one part sand, and one part fine old leaf mould, all dry and previously prepared by exposure to the weather, and well rubbed together. Place two or three pieces of crock in the bottom and pot firmly; water as at the first potting, and place in a close frame; shade from bright sun for a few days, when admit a little air, which must be daily gradually increased for a fortnight, then admit all the air available; water carefully; never allow flagging, and on the other hand, never give water until wanted, and then give it copiously.

In about eight weeks cut back the two shoots just above the first pair of leaves on each, keeping the plant rather dry a few days before and after. When the eyes to which it has been cut back have started, shake out, &c., and re-pot as at last potting, using a larger-sized pot (four inch); in all else do as then. After a time cut back to the bottom pair of leaves on each shoot, as before described, and then pot again into a five inch, again into a six inch, and again into a seven inch. When established in the last, cover the surface well with sphagnum, which tie down firmly as nurserymen do when sending out, and make a cord fast round the rim, to which, at opposite sides, attach another to a loop about twice as long as the pot's depth, then on a nail in a light airy part of the greenhouse hang it upside down. Here it remains, occasionally turned round and regularly watered through the hole at the bottom of the pot, which should be larger than usual, and the drainage inside should be placed to admit the water freely—a large hollow shell or very small pot inverted over the hole at the last potting.

About ten weeks before the plant is required in perfection, water very sparingly for a week or ten days, but not to an extent to injure the foliage; then water freely, using liquid manure once a week. Five weeks before the appointed time, take it down, place it on a reversed pot in an airy, light position, right side up. In a few days the points and leaves will turn to the light, and a handsome plant of perfect form is the result.

As the flowers begin to open, shade from bright sunshine, and keep the house a little close, warm and moist, and you have a beautiful specimen Pelargonium without stick or tie.

After blooming, dry off, cut down, shake out, cut back roots, and commence again in the smallest pot it will go into.—H. NEWTON, in *Gardeners' Weekly Magazine*.

Grapes in Canada.

To the Editor of THE CANADA FARMER:

I now proceed to redeem my promise to give you my experience, for the benefit of the grape growers of Canada, and I hope every farmer will become a grape grower.

In describing the different varieties, perhaps the best way will be to point out only those that seem to me worthy of special attention, for three-fourths of the grapes advertised for sale are utterly worthless for open-air growing in Canada.

As to foreign grapes, let me say that I have tried them, and am forced to the conclusion that all foreign grapes, without a single exception, are worse than useless, because they only disappoint the cultivator and discourage him from trying better kinds. These foreign sorts generally bear some very fine grapes the first year, if the season be favourable, and then comes the inevitable mildew, neither roots nor wood mature perfectly, and there is an end of all satisfactory results. From my experience, I most emphatically believe that only American grapes will give permanent satisfaction in America.

Well, then, what shall we plant? This is a question beset with many difficulties, and my opinion may be worth but little, but that little has the merit of being disinterested, for I have no axe to grind; and yet I may fail to point out the very best, for many kinds of very great promise have been too recently introduced to allow of my speaking of them with confidence.

In my suggestions respecting the different kinds of grapes, I shall take the Isabella as my standard of

comparison, for the reason that it is the best known, though probably very few in Canada ever tasted it at its best estate, for the reason that here it is out of its proper latitude. Grown on a gravelly soil, in a sunny exposure, and with a favourable season, it is indeed a noble grape; but for Canada generally it is full three weeks too late.

There are two varieties that have been planted sufficiently long to be pretty generally tested, and which seem to be constantly growing in favour—I mean the Delaware and Concord. The Delaware is a small red grape, from two to three weeks earlier than the Isabella, berries one-fourth the size, and clusters one-third as large. In flavour, it takes a very high stand, even when compared with the best foreign grapes. While at the Provincial Fair this season, I took in conversation with an Italian gentleman, who admired the appearance of our grapes, but complained that the flavour was not good. I handed him some Delawares, and after tasting them, he confessed that they were good, and agreeable even to an Italian palate.

The Concord does not take so high a stand as to flavour, but is early, and seems to suit the taste of the million. In colour and size it is about like the Isabella; it is healthy and hardy, ripens evenly, and stands our winters well. These two grapes I consider perfectly reliable. JOHN C. KILBORN.

Beamsville, C. W.

A Short Code of Rose Culture.

1. The best soil for roses is a strong loam well enriched with decayed stable manure. If the soil is not of this nature, it should be improved by the addition of such as far as possible.

2. For light soils use cow-dung and poudrette instead of stable manure, merely mulching with the latter early in May.

3. Prune at two seasons, thin out the supernumerary shoots in autumn, and shorten those that are left in spring.

4. Remember that the summer roses should be thinned more freely, and shortened less than the autumnals.

5. Always cut back to a bud which has a tendency to grow upwards, rubbing out those buds which are directed inwards.

6. Destroy aphides as soon as seen, by brushing them off or washing the shoots with tobacco water, out of doors; and by fumigating with tobacco under glass.

7. Check mildew by dusting sulphur on the leaves while moist with rain or dew.

8. Water freely during the growing season, if very dry.

9. Never buy old roses on the Manetti stock until you have proved that they will not flourish in your soil either on the Dog Rose or on their own roots. The new roses you must buy on the Manetti, or wait till they are raised by the slower process of budding or by cuttings.

10. Avoid plants that have been "coddled" by raising and growing in heat during their early stages of existence. Thousands of roses are annually sold which have the seeds of disease and early death previously sown by the forcing process. Such, if they live, do not grow vigorously, and often remain stationary or feeble for a length of time.

11. At whatever season roses on their own roots are purchased, they should be planted in the open ground in spring and summer only. Once established, they may remain permanently there.

12. Roses in pots should be re-potted, removing a portion of the old soil every autumn, they require closer pruning than the same sorts growing in the ground; they should be watered with weak liquid manure so soon as the young leaves expand, and until the flowering is over.

13. Roses intended for forcing should be brought into a state of rest in August or September, and be pruned shortly afterwards.

14. Roses under glass should be shaded when coming into bloom, but with a light shading only, such as Tiffany No. 1 or Scrim.

15. Most of the tea-scented roses thrive best under glass, and are worthy of this especial care. They may be grown in pots, or in a cold pit or house, or be planted out in a house, standards or dwarfs, with or without heat.

16. Buy only such new roses as are recommended from trustworthy sources. A new rose that is not at the least equal to or different from all its predecessors, is not worth growing; and to grow such is almost as disappointing as to read a new book that is not worth reading.

17. When growing for exhibition, look to form and colour as well as to size, the day has gone by for mere bulk to triumph over symmetry of form, and variety and brilliancy of colour, whether in pot roses or others.—*Gardeners' Chronicle*.

Rules Relating to Hyacinths Grown in Glasses.

THESE rules may be learnt in five minutes, and if followed, will, I am persuaded, be attended with satisfactory results.

1. If you choose your own bulbs, look for weight as well as size; be sure also that the base of the bulb is sound.
 2. Use the single kinds only, because they are earlier, hardier, and generally preferable for glasses.
 3. Set the bulb in the glass so that the lower end is almost, but not quite, in contact with the water.
 4. Use rain or pond-water.
 5. Do not change the water, but keep a small lump of charcoal at the bottom of the glass.
 6. Fill up the glasses with water as the level sinks by the feeding of the roots, and by evaporation.
 7. When the bulb is placed, put the glass in a cool, dark cupboard, or in any place where light is excluded, there to remain for about six weeks. The roots feed more freely in the dark.
 8. When the roots are freely developed, and the flower-spike is pushing into life (which will be in about six weeks), remove by degrees to full light and air.
 9. The more light and air given from the time the flowers show colour, the shorter will be the leaves and spike, and the brighter the colours of the flowers.
- W. Paul's Lecture on the Hyacinth.

Tuberose Culture.

Put each bulb singly into the smallest pot it will go into, using the very richest soil, and plunge them into bottom heat, giving no water until they show signs of growth. As soon as these small pots are filled with roots, shift into a larger size; still using the richest soil, re-plunge into bottom heat, and encourage by watering when necessary, and when the flower stems have grown three or four feet in height, they may be set in the warmest part of the greenhouse to develop their flowers. The waxy beauty and delicious scent of these flowers amply repay any pains bestowed on their production.—Gardeners' Magazine.

Grape Vine Culture.

By W. S. OF MODERN

PRELIMINARY.

IN THE CANADA FARMER, numbers 5 and 6 (15th March and 1st April, 1864), a few observations were given on the "Culture and Management of the Grape," the most delicious of all fruits, to which we again refer our readers. We have nothing to qualify in these remarks, but there are many parties, and the number is increasing, who are anxious to try grape culture, who may have had little or no previous experience, and to such a few additional observations, somewhat more in detail, with the aid of illustrative engravings, may be useful. We accordingly purpose again traversing the entire field of grape cultivation, and shall endeavour clearly to explain the principle of the thing in as few words as may unmisakably convey our meaning.

There is scarcely another fruit which produces so good results from very little skill or attention, and yet so magnificent under the best management and cultivation. And when it is borne in mind that the vine comes into bearing the second or third year, and into full productiveness by the fourth or fifth, hardly any other fruit crop can compare with it. It is true that, here in Canada (we are, perhaps, a little too far north), we must remember that we are in the 41st parallel of latitude, at any rate, that even the hardiest sorts will be all the better to be laid down and protected during the winter, but that with this precaution most productive crops of grapes can be obtained. We appeal to facts, shewing what is actually being done in this way in more or less extended proportions, which may anywhere be readily repeated on any scale that may be desired. The show of open-air-grown grapes at the recent Provincial Exhibition at Hamilton, has been on all hands admitted to have been the largest and finest yet exhibited in Canada.

"The show of grapes," says the *Globe*, "was the largest we have ever had at any Provincial Fair, and of a quality which afforded very gratifying evidence that increasing attention is being paid to the culture of the vine, for which we are now finding out that the climate and soil of Canada are specially adapted. The vine loves the rich soils which abound in this country, and our short, hot summers suit very well those varieties of grapes which ripen rapidly. The experience of our vine cultivators fully bears out

the conclusion arrived at by a Committee of the House of Assembly last session, that by proper open-air culture a most abundant grape harvest, of the best quality, could be gathered in Canada, and we trust that, year by year, the natural advantages of our country in this respect will be turned to increasing account." Let any of our readers, at the proper season, visit the small vineyard of Mr. Bevan, the cooper, at Yorkville, and he will find ample proof of all we have before stated. We have always found this gentleman courteous and ready to furnish every information, and, we doubt not, so will any one who may call upon him. Mr. Bevan has only half an acre of land, or thereabouts, altogether. On this his house, workshops, and other buildings are erected, the remaining portion only being devoted to garden and vineyard purposes. Some twelve years ago he planted a few grape vines. Finding their culture a congenial occupation, he gradually increased his stock until his whole available space is now occupied with vines. Mr. Bevan's garden has a western aspect, not, perhaps, so well drained as might be desirable and profitable, but well sheltered on all sides, and many varieties of our native hardy grape here grow most luxuriantly, producing abundant results. Every season he makes large quantities of wine, a really excellent article, for which, he says, he always finds a ready sale, besides saving and using considerable quantities for the table. He has likewise a small glass-house, in which he cultivates the leading foreign varieties in admirable perfection. An average estimate of Mr. Bevan's returns warrants the conclusion that an acre of vineyard will, after paying all expenses, yield a clear average annual profit of from \$800 to \$1,000. An acre will grow about one thousand vines, which (the very finest sorts) could probably be purchased in that quantity, the ground prepared, fenced and planted, for about \$160. Now, making full allowance for the labour necessary over three or four years, when there would be no return, we think there can hardly be any speculation surer or likelier to be profitable.

To begin at the beginning: we shall first advert to the soil, preparation thereof, and the aspect or location of the vineyard; and, when we speak of the vineyard, the same principles apply to a plot of half-a-dozen, or even a single vine.

SOIL, PREPARATION, LOCATION OR ASPECT.

A black, carbonaceous loam is the best soil, but any ordinary land suitable for a good crop of wheat will answer perfectly well. It will always, however, be proper to examine particularly into the texture of the soil in which it is proposed to plant the grape vine. There should be some sand, some clay, some gravel, and some limestone in it. If there be too little sand or gravelly limestone, then the soil will become too clayey and cold, or if there be too much gravel and sand, then vegetation is repressed. It has been remarked that American soils are generally deficient in what European vineyard men prize so highly—gypsum or plaster. If deficient, this must be supplied by proper manures. A very strong, stiff clay should be avoided. It must be naturally dry, or made so by thorough drainage. The least degree of stagnant water is very injurious, and a very wet soil quite fatal to the grape vine. A rising ground with a southern or south-western aspect is the best, but the vine should neither be planted on the crest of a hill nor in the bottom of a valley. The hill is too much exposed to tearing winds, and the valley to damps, frosts, and mildews. There should be a full exposure to the sun during the heat of the day, and above all there must be thorough shelter. A high board fence should surround the vines, at least at the north and north-west. A live fence, for the construction of which there are many admirable materials, would be by far the best. There is the Norway spruce (*abies excelsa*), the hemlock (*canadensis*), the American holly (*ilex opaca*), the American arbor vitae (*Thuja occidentalis*), the buck thorn (*rhamnus catharticus*), the honey locust (*glycyrrhiza triacanthos*), and, shall we say? the white willow (*salix alba*); any of which in four or five years would form an excellent wind-break, and at the same time protect the grounds effectually from the inroads of either quadrupeds or bipeds. Then the soil must be in a fair state of cultivation, or receive a moderate manuring. Lime, phosphates, plaster, or well rotted barn-yard manure—any or all of them. But there is not the least necessity for heavy manuring before planting. It is quite sufficient when the vines come into bearing, to work the manure into the soil in the shape of a mulching, year after year. The preparation of the soil should, however, be very thorough; ploughing, harrowing, rolling, raking, breaking up in any and every way until it is thoroughly pulverised—it can be made as fine and light as bolted flour, so much the better. This is the secret of abundant crops, and is much more valuable than either deep trenching or heavy manuring. Indeed, both these items, so much insisted on by various writers, which

by their expensiveness deter so many from attempting the business at all, are not only useless, but decidedly injurious. A depth of from twelve to eighteen inches is amply sufficient. The summer and fall seasons are best for these operations.

SEASON TO PLANT.

If very carefully done by experienced hands we should, ourselves, prefer the fall; but perhaps there is less danger of failure by spring planting; only it is much the better plan to procure the best two year old plants from the nursery just before the hard frosts set in, in the fall, cutting them down to two or three eyes or buds, and denuding the roots of about a third of their proportions, and then thoroughly securing them by heeling in, so as to be at hand the moment the season will permit planting in the spring. Vines two years old are the best; they should never be purchased or moved after attaining this age. The grape vine will scarcely ever grow good fruit, or fruit in any quantity if moved after this. It is, under ordinary circumstances, tenacious of life, and may be propagated and cultivated in a variety of ways, but after three years old it cannot be moved without irreparable injury. Whether, therefore, it be determined to plant in the fall or in the spring, the vine should be procured in the fall. Have ready by the time they arrive a trench, capable of holding them all, set four inches apart and about eight inches deep

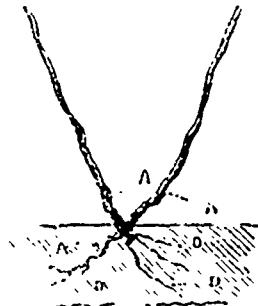


FIG. 1.

Fig. 1 shows the plant as received from the nursery. A A A are the points at which it is to be pruned off both wood and roots. Fig. 2 shows the vine as it appears when so pruned, ready to heel-in or to plant. Each plant so trimmed must be neatly packed in sandy earth at the bottom of the trench, covering it



FIG. 2.

carefully with the hand, spreading out the roots in their natural order, and filling in sand between them, so that they do not touch one another. Then cover the roots about an inch in depth; take another vine, trim it in the same way, set it close to and partially above the other, putting soil between them until the whole are in and covered. Then fill in soil, raising a neat mound, and covering every part to a depth of at least eight inches. Tidy off the whole, so that the water will run off, and none stand round about; the vines are now safe for the winter, no matter what the weather, and at hand the moment they are wanted in the spring.

GRAPES have ripened well in the open air at Quebec this year.

VINTAGE of 1864 in FRANCE.—Foreign papers say that no vintage can be more magnificent than the vintage this year in all parts of France. In the wine districts there is a superabundance of grapes. The proprietors of vineyards are actually puzzled to know what to do, their usual supply of casks having long been filled, and the coopers, although at work day and night, being utterly unable to supply the demand.

KEEPING PARSLEY FOR USE DURING WINTER.—Housekeepers who value this for seasoning and for ornamenting dishes, can have it all winter with very little trouble. Take up a stock of roots and set them in a box of earth. This may be kept in a light cellar, wash-room, or any place where it will not freeze, and give a good supply. A barrel or keg with auger holes bored at intervals may be filled with roots and earth, the crowns of the plants being placed at the holes, and the barrel or keg filled with earth. This being set in the green-house or even in the kitchen, will give a supply of parsley and make a very pleasant green ornament. The plants left in the bed are to be covered with cedar boughs or some other similar protection.—Am. Ag.

THE CHINESE.—"That singular people," says the *Athenæum*, "had found out the sexuality of plants long before it was insisted upon by Europeans. Long before any herbal flourished with us, they had such books illustrated by woodcuts. In fact, the work of Li-shi-chin, written more than three centuries ago, is still the standard book on the *Materia Medica* of China, and consists of fifty octavo volumes, illustrated by numerous woodcuts of minerals, plants, and animals."

HOW TO PRESERVE SCIENS.—C. C. Hatch, of Ischia, N. Y., who has followed grafting over forty years, says:—"I cut my scions in February. I then take resin with a little oil or tallow to reduce it, as clear resin is apt to crumble off. Melt it, and when boiling hot, dip the ends cut from the tree of each scion. This seals the pores of the wood, and then stand the butts of the scions on the damp ground on the bottom of my cellar, and turn an empty cask over them. In this way they keep fresh the year round. I have scions of apples and pears in my cellar to-day that are as fresh as when cut last February; and one year, for an experiment, I kept some over the next winter, and set them in April, after being cut sixteen months, and they grew. Grape cuttings prepared in this way, and then rolled up in oiled cloth paper, might be brought from Chili to New York in safety."

EVERGREENS FROM DECIDUOUS TREES.—A correspondent of the *Maine Farmer* says, while travelling in Canada, in November, 1862, in some locality, which he does not give, he was surprised to see shade trees around the houses in full leaf, apparently as green as in June. On inquiring the cause, he was informed it resulted from inserting a piece of pork rind in the tree the spring previous. He asserted that he tried the experiment on a single tree last spring, by boring into it about five inches with a two-inch augur, and lining the hole with pork rind. His letter is dated March 10th, 1861, when, he says, "this tree retains its leaves and the same general appearance as in June." The article is entitled the 'Sugar Maple Evergreen.'—*R. N. Yorker.*

[A friend at our elbow says a much better way to accomplish the same purpose, is to insert a portion of the tail of a bullfrog.—*Country Gent.*]

[Our printer's devil suggests that if by any process a portion of the brain of some correspondents could be inserted in the trunks of the maple, the 'greenness' would be considerably intensified.—*Gardeners' Monthly.*]

PRESERVING APPLES THROUGH THE WINTER.—Mr. Robert Donald, nurseryman, Working, gives the following account of his method of preserving apples. He says:—"This year I tried an experiment to preserve some apples in a ridge of earth, the same way we do potatoes in this part of the country. I had a trench dug five feet wide, one foot below the surface of the ground, and twelve feet long. I covered the whole surface of the bottom and sides with turfs of grass, the grassy side upwards, and then filled the space with golden nobs and some French apples, about two and a half feet deep in the centre, sloping a little to the sides, and then covered them close with turf to keep the fruit clean, the grassy side next the apples. I then covered the ridge with soil a foot thick to keep out the air and frost. At the end of April I had them taken out in fine preservation. I again, last autumn, kept fifty bushels in the same way, with equal success." This writer refers to several gentlemen in the same neighbourhood who were equally successful (after his communication) in keeping upwards of 200 bushels of apples until May in the following year.—*The Field.*

OPEN HEADS FOR FRUIT TREES.—Most orchard trees have their heads altogether too crowded; the limbs are allowed to fill up the centre so that light and air are excluded, and the full development and maturity of the fruit prevented. A distinguished pomologist in giving directions for pruning an orchard, advised to leave room enough in the centre of the tree for a barrel into which to pick the apples; and he was not far from right. It requires but little trouble to get a tree into good shape, if it is attended to while young, when the knife will do the work, which, if neglected, will necessitate the use of the saw and chisel. Where large scars are to be made, it is always best to defer pruning until summer; though cutting with the knife may be done after the severity of the winter has passed. Trees should be started with a view to an open and well balanced head, but where this has been neglected, they should be made as nearly right as possible before they get large. Wherever a branch will crowd another, if allowed to grow, or will unduly fill up the centre of the tree, it should be removed. A timely use of the knife in early spring, and an occasional summer pinching of a shoot disposed to grow where a limb is not needed, will keep the top open. It is sometimes necessary, in order to give the tree a proper balance, to induce a branch to prolong itself more than it naturally would; this can be done by removing the side shoots upon it.—*Rural New Yorker.*

Climbing Plants.

THE VIRGINIAN CREEPER, *Ampelopsis quinquefolia*, is an excellent running vine, more suitable for covering buildings than a trellis.

THE DUTCHMAN'S PIPE, *Aristolochia Siphon*, is a beautiful climbing plant, with large leaves, affording most ample shade. It has curious purple flowers, somewhat in the form of a pipe, and makes a strong, rapid growth.

THE CHINESE WISTARIA, *Wistaria Sinensis*, is perhaps the most desirable of all our climbing plants. The foliage is of a lively green, and the flowers grow in racemes, often more than a foot in length, of a very delicate purplish blue. It blooms most abundantly, producing hundreds and in large plants thousands of clusters of flowers, quite fragrant.

THE SCARLET TRUMPET FLOWER, *Bignonia radicans*, is a very desirable climbing plant, bearing large trumpet-formed, bright orange flowers, from the middle of summer until autumn.



SCARLET TRUMPET FLOWER.

MANURING NEWLY SET TREES.—We this spring saw a neighbour finishing off the planting of a row of handsome maples in front of his dwelling, and complimented him on his taste and public spirit, and expressed the hope that his trees would live and flourish. "They ought to grow," said he, "for I have put a half wheel-barrow load of hog manure into each hole." "Have you?" we responded, "then the trees will die, and you may as well pull them up now and throw them on the brush heap." But he could not be convinced of his error. "Hog dung done well on the corn-field, and with hops and tobacco; and why won't it with shade trees?" And so he left his handsome maples, with their roots enveloped in the powerful manure, and the result was as might have been expected. A few leaves put forth in May, but in June they turned yellow and dropped off, one by one, and to-day the trees are dead. The lesson is a plain one: keep away manure from newly planted trees. Give the roots finely pulverized surface soil, as good as can be found, and the trees will doubtless thrive. If the soil needs bettering afterward, apply manure to the surface in the fall, and work it in the next spring. Its effects will soon be visible.—*Selected.*

Entomology.

Usefulness of Birds.

At a recent meeting of the Farmers' Club of the American Institute the following remarks were made in reference to the usefulness of birds:—

Mr. Robinson read a communication from the Rev. Mr. Weaver, saying that his trees had been unusually free from canker worms, and he attributed it to the presence of large numbers of reed birds.

Dr. Trimble:—"Mr. President, I must say a word for the reed bird. Were it not for birds we could not live; insects would destroy the whole of our grains and fruits. One of the most valuable of all is the reed bird. When I see bunches of these brought into our markets in the fall I am pained and grieved. It does not eat the curculio, but it eats the canker worm and it eats your span worm that gets on the trees in this city. Last spring I was standing with a friend by Madison Square, when he called my attention to the great numbers of reed birds in the trees. We watched them, and they continued to come till there were 300 or 400 of them in the square. They were feeding on the span worm, and it was curious to watch their mode of feeding. They could not rest on the slender ends of the branches where the worms were, and they would flutter off in the air and approach the worm till they could catch him with their beak. The worms seemed to have an instinct that their enemies were after them; they felt a jarring of the limbs, and they began to let themselves down by their webs in hundreds. The reed birds are not fly catchers like the king bird and the swallow, and they could not catch the worms while suspended thus in the air.

Mr. Marshall:—"Is the reed bird the little black bird that comes in flocks?"

Mr. Robinson:—"No, it is the cherry bird."

Dr. Trimble:—"The male is marked with yellow on the tips of its wings, and it has a crest on its head which it can raise at pleasure."

Mr. President, I have devoted all of my leisure this summer to dissecting and examining the crops of these insectivorous birds, and I have no doubt that if a knowledge of their usefulness could be spread throughout the community, it would result not only in laws for their protection, but in a public sentiment also which would enforce these laws. The most valuable bird that we have is the Baltimore Oriole. That eats the curculio, the great destroyer of our fruit.

Several other subjects were discussed, but we select the above only for our columns.—*Scientific American.*

A FEW WORDS ON BIRDS AND INSECTS.—The cawing rook is the smallest of the crow tribe. He is a true insect destroyer. The cornix, or real crow, will kill young lambs and pigs by pecking out their eyes. A buzzard will destroy 6,000 mice annually. One owl is worth a dozen cats in field, barn or granary. Black-birds, thrushes, robins, starlings, and larks are worm-eating birds. The goldfinch eats thistle seeds. A swallow will devour 900 insects in a day. The miner bird, a worm-eater, has been introduced from India into Australia. The bird called the laughing jackass is the best native mouser and snake killer in Australia. How fond the Englishman is of the robin, which is his social winter companion, with which he feeds crumbs of bread, and which the barbarous Buffon recommended as a *bonne bouche* when eaten with bread crumbs. The cockroach deposits 100 eggs at one time, and the wheat fly 130 eggs; and the aphid is still more prolific.—*New Zealand Paper.*

TO PRESERVE FRUIT FROM INSECTS.—"Muscat" writes to the *London Times* on this subject:—"The following remedy, first invented by a near neighbour and friend, the late Rev. W. Kirby, will be found efficient: a hand glass, commonly used by gardeners (a square one is the best), is the instrument to be used. This has to be tightly covered at the bottom with thick white paper, varnished to resist the wet. A circular hole, six and a half inches in diameter, is then cut in the centre of the paper, and the glass is placed on three bricks over a plate filled with beer, sugar, and a little rum, a moderate distance from the infested spot. The effect is magical; in a few hours the glass is crammed with wasps, hornets, and flies, (bees will seldom enter), which, having tasted the sweets, fly upwards to the light. A common sulphur match, made by dipping brown paper into melted brimstone, will destroy thousands. The constant hum of insect life inside will attract all the marauders from the fruit trees to the glass."



The Household.

The Effect of Marriage.

DOUBTLESS you have remarked with satisfaction how the little oddities of men who marry rather late in life are pruned away speedily after marriage. You have found a man who used to be shabbily and carelessly dressed, with huge shirt collar frayed at the edges, and a glaring yellow silk pocket-handkerchief, broken of these and become a pattern of neatness. You have seen a man whose hair and whiskers were ridiculously cut, speedily become like other human beings. You have seen a clergyman who wore a long beard, in a little while appear without one. You have seen a man who used to sing ridiculous sentimental songs, leave them off. You have seen a man who took snuff copiously, and who generally had his breast covered with snuff, abandon the vile habit.

A wife is the grand wielder of the moral pruning-knife. If Johnson's wife had lived, there would have been no hoarding up of bits of orange peel; no touching all the posts in walking along the street; no eating and drinking with a disgusting voracity. If Oliver Goldsmith had been married, he would never have worn that memorable and ridiculous coat. Whenever you find a man whom you know little about, oddly dressed, or talking ridiculously, or exhibiting any eccentricity of manner, you may be tolerably sure that he is not a married man. For the little corners are rounded off, the little shoots are pruned away in married men. Wives generally have much more sense than their husbands, especially when the husbands are clever men. The wife's advice is like the ballast that keeps the ship steady. They are like the wholesome, though painful, shears snipping off the little growths of self-conceit and folly.—*Fraser's Magazine.*

A New Remedy for Tapeworm.

A CORRESPONDENT of the *Field*, in circulating his knowledge of the above subject, writes as follows:—"It is, I think, the duty of every one who may know of a remedy for any of the ills which flesh is heir to, to circulate that knowledge as widely as possible; and, as there is no better way of doing this than by publishing it, I send you this letter to do what you please with. Some time ago, I was told of a remedy for tapeworm, which is so simple and cheap as to be within the reach of the poorest, and so effective that I have never heard of a case in which it has been tried without bringing immediate relief, if not perfectly curing the sufferer.

In one instance which came under my notice, a few doses brought away from a labouring man, whose health had been much injured by this dreadful disease, twenty-three yards of tapeworm; and although the creature was not extirpated, but grew again, by perseverance he got quite rid of it. I believe it is equally good for dogs. A gentleman to whom I once mentioned this remedy tried it upon a pet dog, without being aware that the animal had worms, and in a short time a large quantity of worms came from it. The receipt is as follows:—

Mash up into a cake with two ounces of honey three ounces of pumpkin seed. This cake is to be eaten an hour before the usual time for breakfast, of which very little should be taken; if none be taken, all the better. An hour after the cake has been eaten take two ounces more of honey, and an hour after that two ounces more. This should be tried for two days if necessary, and then, after an interval of a week, try again.

I should like to know whether any of your readers have ever heard of this remedy; and, should they be disposed to try it, either upon suffering humanity or upon dogs, perhaps they will kindly communicate to you what success they meet with."

LEMON PIES.—Four eggs; seven table-spoons white sugar; grated peel and juice of one lemon; half teacup of sweet milk. Beat the yolks, then add the sugar, lemon, and milk, and bake in crust as for custard. When done, heat the whites to a stiff froth, adding two table-spoons frosted sugar spread over the pie, and place in the oven until the frosting is slightly browned.

CHEAP FRUIT CAKE.—One cup sugar; 1 cup butter; half cup buttermilk; 1 teaspoon soda; 3 eggs; 1 cup raisins; 1 cup currants. Chop the raisins and currants very fine.

TIP-TOP JOHNNY CAKE.—Two cups of Indian meal; half cup of flour; 2 cups sour milk; 1 egg; 1 table-spoonful melted butter; 1 teaspoon soda; a little salt.

A HOUSEHOLD CONVENIENCE.—I have a slate hanging in my pantry with pencil attached, upon which we are accustomed to write down such domestic concerns as need attention. For instance, upon one side of it is now written, "Send for corn-meal, starch and lamp chimney." "Examine butter firkin." "Engage onions of Mr. Allen to-morrow." These are for my own attention, while upon the other side the girl is reminded to "Brown coffee; gather beans for drying." "Scald the bread-box." "Wash cellar shelves." Whenever I find any little item that needs attention either from myself or the girl, I trust it to my slate, and find it much safer than to run the risk of remembering it at the right time. You often hear housekeepers exclaiming, "There, I forgot entirely to send for such a thing—or do such a thing, and now it is too late." Try the slate.

CUTTING UP PORK.—Have the hog laid on his back on a stout table. Clean the carcass of the leaf fat. Take off the feet at the ankle joints. Cut the head off close to the shoulders, separate the jaw from the skull, and open the skull lengthwise on the under side, so as to remove the brains fully. Remove the backbone in its whole length, and with a sharp knife cut off the skin—then the fat, leaving only about one-half-inch of fat on the spinal column. The middlings or sides are now cut from between the quarters, leaving the shoulders square shaped, and the hock pointed, or it may be rounded to suit your fancy. The ribs are next removed, partially or entirely from the sides. The trimmings of fat from the hams and flabby parts of the sides are rendered up with the backbone strip for lard. The sausage meat is cut from between the leaf fat and the ribs; any other lean pieces are used for the same purpose. The thick part of the backbone that lies between the shoulders is called the chine; it is cut from the tapering bony end, and the latter part called the backbone by way of distinction. The backbones are used while fresh; the chine is better after being smoked.—*Country Gentleman.*

OUR FEET.—Women are not more hardy than men. They walk on the same damp cold earth. Their shoes must be as thick and warm. Calf or kip skin is best for the cold season. The sole should be half an inch thick; in addition there should be a quarter of an inch of rubber. The rubber sole I have used for years; I would not part with it for a thousand dollars. It keeps out the damp, prevents slipping, and wears five times as long as leather of the same cost. For women's boots it is invaluable. But rubber shoes should be discarded. They retain the perspiration, make the feet tender, and give susceptibility to cold. Stand on one foot, and mark around the outspread toes. Have your soles exactly the same width. Your corns will leave you. The narrow sole is the cause of most of our corns. A careful study of the anatomy of the foot and the influence of a narrow sole will satisfy every inquirer. The heel should be broad and long. Wear thick woollen stockings. Change them every day. Before retiring dip the feet in cold water. Rub them hard. Hold the bottoms to the fire till they burn.—*Dr. Lewis.*

PRESERVING CIDER.—At the Farmers' Club of the American Institute lately, a discussion took place on preserving cider.

Mr. Robinson:—I have here an inquiry if there is any mode of keeping cider sweet except the use of sulphite of lime. The writer says that injures the flavour.

The President:—Cider and wine may be purified by isinglass. Dissolve isinglass in warm water, stir it gently with the wine, let it settle, and then carefully draw off the liquor. You may use about an ounce of isinglass to a gallon of cider. I purified wine in this way thirty years ago. The process takes out some of the fruity flavour of the liquor. It is better to let it settle without the isinglass. "Wine on the lees" is the best now as it was in Scripture times.

Mr. Carpenter:—The main thing, Mr. Chairman, in keeping cider is to have the barrel clean and sweet, and the cider free from pounce and other impurities.

Mr. Hillsboro:—The best barrel of cider that I ever saw had a handful of alum put into it in November. It did not remain sweet, but the next summer it was a most delicious drink.

Miscellaneous.

How John Bull Acknowledged the Corn.

ARRORS of Joshua Bates, the great London banker, whose death has just been so appropriately noticed by our Chamber of Commerce, a little incident occurs to us that amusingly yet fully illustrates his jealous love for his native land. In the month of January, 1817, at a certain dinner party in London, at which Lord John Russell, Lord Morpeth, Mr. Bates, and many other distinguished men were present, the conversation turned upon the Irish famine; and the remark was made by Lord John that he rejoiced that so good a substitute for the native breadstuff had been found as the Indian corn. Turning to Mr. Bates, his Lordship went on to say: "Why, Bates, some of the cobs have twelve or fourteen rows of grain on them." Mr. Bates coolly replied, "Yes, my Lord, I have seen from twenty to twenty-four rows on a cob." "That is a rank Yankeeism," was the pleasant retort of the Premier, and the whole company shouted in approval. The burst of incredulous merriment over, Mr. Bates bought his peace by a wager of a dinner for the company all round that he could produce such an ear. "Done!" exclaimed Lord John, and the bet was clinched. The dinner passed off. Mr. Bates returned home not entirely at ease. He had done a strange thing; for the first time in his life he had made an engagement he was not absolutely certain of his ability to fulfil. He had misgivings that he had rashly pledged the honour of his native land. It had been long since he had looked upon an American crib; and however patiently he winnowed the cornucopia of his memory, he found that the cobs of his early days had "gone glimmering through the things that were," and were now so far off that he couldn't count the rows. He was, as Plautus would say, *reclusus ad invitata*—in Yankee parlance, "hard up." But fortune favours the brave. It happened that a well-known New York merchant dropped in, next day, at the counting-house of the Barings. Mr. Bates, with brightening face, hailed him, and made known his difficulty. "You are safe," was the ready response; "If I live to get home, you shall have even a bigger ear than you have promised." Mr. G— soon returned to New York, and straightway went to Messrs. Rogers & Reynolds, of Lafayette, Ind., telling the story, and begging them, for the honour of the country, to come to the rescue, and turn the tables on Lord John. In the July following, Mr. G. received by express, from Lafayette, a nicely-arranged box containing 6 ears of horse-teeth corn, two of which had twenty-nine rows, two thirty-one, and two thirty-two. The box was forthwith addressed to A. J. Bates, Esq., care of Messrs. Baring, Bros. & Co., shipped by Black Ball Line, care of the Liverpool house. It reached its destination. The result was that Lord John Russell, first Lord of the Treasury, third son of the late Duke of Bedford, by the second daughter of George, Viscount Torrington, and lineal descendant of Lord William Russell, the martyr of liberty, acknowledged the corn. The dinner was won. Joshua Bates did not perpetrate a "Yankeeism"—at least none to be ashamed of. The largest of these ears of corn is now displayed in the British Museum, dividing attention with the Nineveh Bull and the Koh-i-noor diamond.

Irish Agricultural and Emigration Statistics.

The Registrar General has issued his general abstract of Agricultural Statistics, showing the extent of land under the various crops, and the number of live stock in each province. It appears from these most important and trust-worthy tables that the total area under cultivation this year is 5,672,980 acres, which is an increase of 10,493 acres over the extent of tillage last year. The number of acres under wheat this year is 279,863, being 19,552 over last year; but there is a decrease in the acreage under oats amounting to no fewer than 145,965 acres, the total number now grown being 1,869,918. The whole return shows a total decrease in cereal crops to the extent of 122,437 acres. The returns of the green crops are:—Potatoes, 1,639,282 acres; turnips, 337,283 acres; mangold-wurzel and beet-root, 14,106 acres; cabbage, 31,756 acres; carrots, parsnips, and other green crops, 23,190 acres; vetches and rape, 29,918 acres, total, 1,475,535. The total number of cattle in Ireland this year is 3,257,309, being an increase of 113,078 over 1863; number of sheep, 3,363,068, being an increase of 54,861. In horses there is a decrease, the total number being 564,361, which is 18,616 less than in 1863; and pigs also have decreased, the number at present, 1,056,245, being 11,209 less than last year. The total value of live stock in Ireland

this year is computed at £30,085,082. In 1859 its value was £35,368,259, showing a falling off to the extent of more than £5,000,000, within a period of five years, though with some improvement this year.

These returns also embrace the statistics of emigration, under which head we are informed that 84,586 persons left Ireland up to the 31st of July, being 4,080 more than last year. The total extent of emigration since the 1st of May, 1851, when the enumeration of the several ports commenced, was 1,199,612 persons. A comparison of the returns from each province shows that in Leinster there has been an increase to the amount of 3,850 persons, and in Connaught an increase of 2,461 persons, while in Ulster there has been a slight diminution, amounting to 280 persons, and in Munster a considerable decrease, there being 3,015 less this year than last.

Considering the increased value of live stock, the greater area under flax, and the expected increase in the yield of the several crops owing to the more favourable weather enjoyed this year, Mr. Donnelly is of opinion that the condition of the country, as exhibited in these abstracts, "affords fair hope of a return to more prosperous seasons for the farmer than Ireland has enjoyed for many years."

Man Traps and Spring Guns.

It used to be common in England, in former times, to warn deprecators off premises by putting up signs reading "man traps and spring guns," thereby hinting at a speedy and terrible fate to the evil-disposed. This practice was at any rate honest: but what shall be said of those persons in modern times who deliberately place man traps where the innocent and unthinking walk headlong into them?

The record of accidents from machinery is daily increasing. In looking over our exchanges it is painful to notice that the majority of the victims are women. Entangled by their skirts they are drawn around shafting and killed instantly. As many as twenty persons have been so killed within the past few weeks. Some of them were young women who ought to have been more careful, but this is no excuse for those who left the snare open. The accidents above alluded to were nearly all caused by shafting. One of them in particular was in a printing-office, where a shaft ran only a few inches from the floor; over this shaft women stepped continually in doing their work, until in an unlucky moment one of the females was caught by her skirts and dashed to pieces.

In these days of the universal adoption of machinery, shafting, pulleys, gearing, and belts are continually running in dangerous places. Children play about them; men and women pass and repass them daily; when suddenly one is taken and the rest left, but the cause of the tragedy is untouched. Men will blow their brains out with guns and pistols by carelessness, there seems to be no help for this, but people may and should be prevented from walking blindly into gears, or being carried around shafts. In a saleratus factory of this city a woman there employed went into the basement a few weeks ago for some purpose, and, being ignorant of the locality, walked straight into a set of heavy gears, running at great speed, and was swallowed up in an instant. After this "accident" it is reasonable to infer that the gearing was boxed up, but what utter recklessness on the part of those who left the wheels in such a condition? Is there not one life charged against them?

When belts run through floors they should be boxed up certainly waist high; a six-inch belt, running fast, will take a man's leg off as quick as a saw; and pulleys that buzz round within an inch of one's nose should also be boxed, or the thoroughfare made in some other direction. Gears must be cased with sheet-iron on the "running side": wooden boxing shatters, and is liable to get caught and carried in. A man may put his head in the other side of the wheels with impunity. There are many belts now, many shafts at this moment in a condition to catch the first unwary passer by the heels and lay him low. Why not secure them? Why not place them beyond the power for mischief? They should be boxed immediately.—*Scientific American.*

OILING LEATHER.—The *Scientific American* says that oils should not be applied to dry leather, as they would invariably injure it. If you wish to oil a harness, wet it over night, cover it with a blanket, and in the morning it will be dry and supple; then apply neat's foot oil in small quantities, and with so much elbow grease as will insure its disseminating itself throughout the leather. A soft, pliant thariness is easy to handle, and lasts longer than a neglected one. Never use vegetable oils on leather; and among animal oils, neat's foot is the best.

Poetry.

In No. 17 of this journal, page 271, we published a quaint bit of poetry headed, "TUOTOURS WHEX SMOKING." The history of this scrap, its authorship, and the original shape in which it appeared, are set forth as follows by a correspondent of the *Hastings Chronicle* in a recent number of that paper:—

"DEAR SIR,—Being in Kingston a while ago, I was kindly invited to remain over night with my old and tried friend, E. H. Hardy, Esq. In the course of the evening he was showing me his library, among which I found a very large volume, containing "The sermons and other practical works of the late Reverend and learned Mr. Ralph Erskine, Minister of the Gospel in Dunfermline," and printed in Glasgow in 1765. On looking over this interesting volume, I found the following poem, the second part of which was written by Mr. Erskine, as a proper subject of meditation to smokers of tobacco, copied from 'Gospel Sonnets.' This circumstance reminded me of the days of my childhood, all of seventy years ago, when I used to hear my late honoured father and mother sing what we children used to call the 'Tobacco Song,' the words and tune being still fresh in my recollection."

SMOKING SPIRITUALIZED

PART FIRST

This Indian weed, now withered quite,
Though green at noon, cut down at night,
Shows thy decay,
All flesh is hay—
Thus think, and smoke tobacco.

The pipe, so fly-like and weak,
Does thus thy mortal state bespeak
Thou art ev'n such,
Gone with a puff—
Thus think, and smoke tobacco.

And when the smoke ascends on high,
Then thou behold'st the vanity
Of worldly stuff,
Gone with a puff.
Thus think, and smoke tobacco.

And when the pipe grows foul within
Think on thy soul, defil'd with sin,
For then the fire
It does require
Thus think, and smoke tobacco.

And see 'st the ashes cast away;
Then to thyself thou mayest say,
That to the dust
Return thou must.
Thus think, and smoke tobacco.

PART SECOND

Was this small plant for thee cut down?
So was the plant of great renown,
Which mercy sends
For nobler ends
Thus think, and smoke tobacco.

Doth Juico medicinal proceed
From such a naughty foreign weed?
Then what's the power
Of Jesse's flower?
Thus think, and smoke tobacco.

The promise, like the pipe, fulfils,
And by the mouth of faith conveys
What virtue flows
From Sharon's rose.
Thus think, and smoke tobacco.

In vain th' unlighted pipe you blow,
Your pains in outward means are so,
Till Heavenly fire
The heart inspire,
Thus think, and smoke tobacco.

The smoke, like burning incense, towers;
So should a praying heart of yours,
With ardent cries,
Surmount the skies.
Thus think, and smoke tobacco.

DEATH OF RICHARD BOOTH, OF WARLBY.—Many will mourn with regret, says the *North British Agriculturist*, Nov. 2nd, that this distinguished breeder of Short Horns and most estimable gentleman, who has been confined to the house for about two years, died on Monday, the 31st ult., about two o'clock.

U. S. Crops for 1864.

THE Crop Circular from the Department of Agriculture gives the relative production of the last three years of the leading crops, and the increase or decrease of the remainder of our farm products. The aggregates have already been published. We give the comparative figures for 1863 and 1864:—

Wheat	18,703,213 bushels	decrease.
Rye	909,807 "	"
Barley	750,827 "	"
Oats	2,839,489 "	increase.
Hay	7,620,896 tons	decrease.
Corn	78,613,444 bushels	increase.
Buckwheat	2,891,085 "	"
Potatoes	3,901,782 "	decrease.
Tobacco	69,799,691 lbs	"

In sorghum there has been a large increase in all the States except Michigan, Indiana, Iowa and Kansas, in which the decrease has, however, been slight, while the increase in the other States has ranged from one-tenth to double the yield of 1863. In flax seed and lint there has been a great increase. In root crops there has been a considerable decrease, except in Massachusetts, Connecticut, Delaware and West Virginia. In stock hogs for fattening this fall, there has been a decrease in all the States of from 15 to 38 per cent. In fattening cattle, there is an increase in Minnesota and Kansas, while in all the other States the decrease is from 20 to 50 per cent. In the quantity of old wheat on hand, there is on the whole about 25 per cent. less than last year. The quality of the new wheat is given at from ten to fifty per cent. better in the different States, so that the extra quality this year nearly balances the deficiency in quantity produced.—*Cincinnati Gazette.*

ACTION OF RUST.—An English paper says:—"Rust eats fast into wrought-iron structures. This year no less than 40 tons of iron rust were taken out of the Menai tubular bridge at one thorough cleaning." At that rate it will soon be carried away in old iron."

A TREASONABLE DABLIA.—The *Lloyd*, of Vienna, states that a gardener has been punished at Warsaw for having in his possession a dahlia which, by caprice of nature, was partly red and partly white, the Polish colours. The commissary of police unfortunately cast his suspicious eye on the flower, and immediately drew up a report to "superior authority," asking that the gardener should be punished for making a political demonstration! Few better illustrations could be found than this of the absurd vigilance maintained by despotic governments.

HOW TO DETERMINE THE CAPACITY OF CISTERS.—A simple rule by which farmers and others can determine the contents of a cistern, circular in form, and of equal size at top and bottom, is this:—Find the depth and diameter in inches: square the diameter and multiply the square by the decimal .0034, which will find the quantity of gallons (251 cubic inches being a gallon) for one inch in depth. Multiply this by the depth, and divide by 31.12, and the result will be the number of barrels the cistern will hold. For each foot in depth the number of barrels, answering to the different diameters, are:—

For 5 feet diameter	4.66 barrels.
" 6 "	6.71 "
" 7 "	9.13 "
" 8 "	11.83 "
" 9 "	15.10 "
" 10 "	18.65 "

By the above rule the contents of barn-yard cisterns and manure tanks may be calculated for any size.—*Prairie Farmer.*

SUBSTITUTES FOR COTTON.—A recent Paris letter says:—"Great excitement prevails in those manufacturing districts of France where cotton is most used on account of the discovery of a substitute for the now dethroned King. This substitute is the China-grass, or white *urtica* (nettle-weed), which may be cultivated cheaply in all parts of France. The experiments with this new textile fibre have been going on for a year or more under the direction of a competent committee appointed by the Chamber of Commerce of Rouen, and this committee, with the weed, the raw fibre, and various specimens of woven and coloured and uncoloured cloths in hand, have shown the Chamber, beyond all question, that the substitute is a genuine one in every point. They declare without reservation, that none of the qualities of the cotton are wanting. I commend to your attention the lengthy report, as published in two late numbers of the *Moniteur*. The Minister of the Interior is furnishing seed, obtained from China, to agriculturists, and the speculation is going to assume at once colossal proportions."

INVITATION TO A CANADIAN PRIZE-TAKER.—The North British Agriculturist, of Edinburgh, referring to the recent Provincial Fair at Hamilton, says:—

"It will also be observed from the report that the awards of the judges of the mowing and reaping machine competition were made public at the Show. When we gave a previous notice of this trial, we alluded to the success of machines manufactured by J. Watson, Agr. We supposed that the manufacturer referred to was one of the 'honest men' for which the town of Ayr, in Scotland, was celebrated. We now learn from the letters, C. W., appended to Ayr, that the successful maker is an inhabitant of the town of Ayr, in Western Canada. It would be a favour to agriculturists in Great Britain if Mr. Watson, Agr. C. W., would forward one of his reapers to this country for exhibition and competition."

We trust Mr. Watson will accede to the above request.

Markets.

Toronto Markets.

"CANADA FARMER" Office, Nov. 20, 1864.

Flour—Little offering, superfine is held at \$3 87½ to \$4 per bbl for No. 1; extra, \$4 20 to \$4 25; superior extra, \$4 50 to \$4 62½; fancy, none offering.

Fall Wheat more plentiful, with a good demand, selling at 85c to 90c per bushel. Spring Wheat better, and more offering, sold at 80c to 84c per bushel.

Barley lower, being sold to day at 55c to 58c per bushel. Oats at 25c to 40c per bushel. Rye 60c per bushel. Pease in better demand at 60c to 65c per bushel. Hay—Market well supplied at \$18 per ton. Straw \$13 per ton.

Provisions—Butter—Fresh, wholesale, per lb. 15c to 20c; retail, per lb. 20c to 25c; in tubs, wholesale, per lb. 16c to 18c. Eggs—Wholesale, per dozen, 14c to 18c; retail, per dozen 18c to 24c.

Stamps—Wholesale, per lb. 11c, retail, per lb. 12½c. Fitch Bacon—Wholesale, per lb. 8½c, retail, per lb. 11c. Cheese—Wholesale, per lb. 10 c to 11c, retail, per lb. 12½c to 15c.

Lard—Wholesale, 11c per lb, retail, 13c to 15c. Beef well supplied, inferior—large amount offering at \$2 to \$3 per 100 lbs which is principally bought for peddling in the market, or by the farmers, second quality plenty, at \$3 25 to \$3 75, 6c to 8c per lb, retail, first class in demand for home consumption and export, at \$4 to \$4 50 per cwt., wholesale, 8c to 10c per lb, retail.

Citrus \$3 50 to \$5. Sheep, by the car load, \$3 to \$3 50. Lamb, by the car load, \$2, very good bring \$2 25. Pork \$5 to \$5 75 per 100 lbs. Venison, good buck, \$5 to \$8. Hides (green) per 100 lbs., \$3 50, dry hides, 6c to 8c per lb. Tallow 5c per lb. Wool as to at 35c to 36c. Calfskins (green) 10c to 12c per lb., dry, 16c to 18c. Sheepskins (green) 50c to 55c each, dry, 16c to 18c. Lambskins 50c to 90c each. Coal, Lohigh \$10, Scranton \$8, Bituminous \$9. Wood \$4 50 to \$5 50 per cord. Salt \$1 50 to \$2 per bbl. Water Lime \$1 to \$1 50 per bbl. Potatoes in better supply at 30c to 35c per bushel retail. Apples, \$1 to \$1 50 per bbl. Ducks, 30c each. Chickens, 25c to 35c per pair. Turkeys, 50c to \$1 50 each. Geese, 25c to 45c each.

Hamilton Markets, Nov. 24.—Fall Wheat, 80c to 85c; Spring do., 76c to 80c; Barley, 55c; Rye, 56c; Buckwheat, 40c. Oats, 36c to 38c; Corn, 55c to 60c; Peas, 55c to 60c; Butter, per lb. 20c to 22c; do in firkins, 16c to 18c; Pork firm at \$4 50 to \$5. Hay, per ton, \$10 to \$13 50, Straw, per ton, \$10 to \$11.—Spectator.

London Markets, Nov. 24.—There was considerable produce in market to-day, which moved off freely at current rates, without any material change in prices.—GRAIN.—Fall Wheat, per bushel, 80c to 90c; Spring Wheat, do, 78c to 82c; Barley do, 60c to 65c; Oats do, 37c to 50c; Peas do, 55c to 59c; Hay, per ton, \$10 to \$17; Fiaz Straie, seed on, do, \$12 to \$14; Oat Straie, per load, \$2 to \$4; Beef, per cwt, \$2 to \$4; Butter fresh, per lb, 18c to 20c; Butter, keg, do, 15c to 16c; Potatoes, per bushel, 25c to 37½c; Flour, per 100 lbs, \$2 to \$2 50; Eggs, per dozen, 10c to 12½c; Hides, dry, per lb, 8c to 10c; Hides, green, 3c to 3½c; Sheepskins, 60c to 80c; Calfskins, per lb green, 8c to 10c; Calfskins, do, dry, 12½c to 16c; Lambskins, 75c to \$1; Wool, per lb, 35c to 38c; Dressed Hogs, \$5 to \$8.—Prototype.

Guelph Markets, Nov. 23.—Pork—average for good, \$5 75, outside figure, \$6.—Advertiser.

Simcoe Markets, Nov. 24.—Fall Wheat 80c per bushel; Spring Wheat, 70c; Flour, \$5 per bbl; Cornmeal, \$1 50 per 100 lbs; Buckwheat Flour, \$2; Rye, 65c per bushel; Corn 60c; Barley, 60c; Peas, 55c; Oats, 37c; Buckwheat, 40c; Potatoes, 37c; Butter, 16c per lb.—Advertiser.

Galt Markets, Nov. 24.—Fall Wheat, 85c to 92c per bush, Spring Wheat, 70c to 75c, Flour, \$2 to \$2 25 per 100 lbs; Oats, 35c to 38c per bushel, Barley, 55c to 60c, Peas, 55c to 60c, Eggs, 15c to 17c per dozen, Butter, 15c to 18c per lb at market; Hides, \$3 per 100 lbs; Wool, 45c to 50c per lb; Sheepskins, 30c to 70c; Potatoes, 25c to 30c per bushel, Apples, 25c to 30c; Hay, \$10 to \$12 per ton.—Reporter.

Dundas Markets, Nov. 24.—Flour \$4 to \$5 per bbl; \$2 to \$2 50 per cwt. Fall Wheat 80c to 87c per bushel, Spring Wheat 70c to 85c per bushel, Oats 30c to 40c per bushel, Peas 60c to 65c per bushel, Barley 50c to 60c per bushel, Corn 50c to 65c per bushel, Rye 6c to 8c per lb, Mutton 6c to 8c per lb, Wool 35c to 40c per lb. Hay \$10 to \$12 per ton.—Banner.

Newmarket Markets, Nov. 25.—Flour \$4 to \$4 50; Fall Wheat 80c to 85c, Spring Wheat 75c to 78c; Barley 50c to 60c; Oats 35c; Peas 55c; Pork \$4 50 to \$5; Butter, fresh, 20c; do, tub, 17c; Eggs, per dozen, 12½c.—Era.

Woodstock Markets, Nov. 25.—Flour \$2 to \$2 25, Fall Wheat 78c to 80c; Spring 75c to 78c, Barley 50c to 60c, Oats 32c to 35c, Peas 60c to 55c, Potatoes 25c; Hay \$10 to \$12; Apples 25c to 35c, Butter 14c to 16c, Eggs 8c to 10c; Wood \$1 50 to \$1 75; Beef \$2 60 to \$4; Mutton \$3 to \$4; Pork \$4 to \$5; Geese, each, 25c to 37½c; Turkeys 50c to 62½c; Ducks, per pair, 37½c, Chickens 20c to 25c.—Times.

Stratford Markets, Nov. 25.—Fall Wheat 80c to 85c per bushel, Spring Wheat 75c to 80c, Oats 30c to 32c, Potatoes 50c to 55c, Barley 60c to 65c, Peas 40c to 55c, Timothy Seed \$1 to \$1 50, Hay \$13 to \$15 per ton, Flour \$4 to \$4 50 per barrel, Oatmeal \$0 to \$0 25, Fresh Butter 16c to 18c per lb, Eggs 10c per dozen; Mutton \$5 to \$6 per 100 lbs, Beef \$4 to \$4 50, Tallow 8c per lb, Apples 60c to 75c per bag, Cornmeal \$1 60 to \$2 50 per cord, Geese 25c each, Turkeys 37½c, Turnips 12½c per bushel, Hides \$3 to \$3 50 per 100 lbs, Hogs at \$4 50 to \$5.—Beacon.

St. Catharines Markets, Nov. 23.—Flour, per 100 lbs., \$2 to \$2 22; White Wheat, per bush, 85c to \$1; Spring do, 80c; Mediterranean do, 80c; Oats, 37c to 40c; Potatoes, 37c to 50c; Apples, 37c to 50c; Beef, per lb., 4c to 6c; Mutton, 4c to 6c; Pork, per 100 lbs., \$6 to \$7; Bacon, do, \$9 50 to \$9; Lamb, per quarter, 60c to 75c; Butter, per lb., 15c to 20c; Eggs, per doz., 15c to 18c; Cheese, per lb., 9c to 10c; Hay, per ton, \$8 to \$10.—Constitutional.

Cobourg Markets, Nov. 23.—Fall Wheat, per bush., 85c to 90c; Spring Wheat, do., 75c to 80c; Barley, do., 70c to 75c; Corn, do., 60c; Peas, do., 50c to 60c; Oats, do., 30c to 40c; Potatoes, do., 25c to 30c; Hay, per ton, \$9 to \$11; Straw, per load, \$2 to \$2 50; Pork, per 100 lbs., \$4 50 to \$5 50, Beef, do., \$3 50 to \$4 50; Mutton, per lb, by the quarter, 5c to 6c.—Star.

Whitby Markets, Nov. 23.—Fall Wheat 85c to 92c, Spring Wheat, 75c to 80c; Oats, 30c to 35c; Peas, 52c to 55c; Pork, \$4 50 to \$5 50, Butter, 14c to 20c, Eggs, 12½c; Potatoes, 30c.—Chronicle.

Ingersoll Markets, Nov. 22.—Fall Wheat still averages from 78c to 84c per bushel, Spring, 75c to 80c; Barley from 65c to 68c; Oats, 32c to 35c; Potatoes, 20c to 25c; Apples, 25c to 37½c; Butter, 15c to 17c per lb, Eggs, 8c to 10c per dozen; Hay from \$11 to \$13 per ton; Straw, \$3 to \$4 per load; Fowls, 20c to 25c per pair; Turkeys, 37½c to 75c, Ducks, 25c to 50c, Peas, 50c to 55c; Pork, \$4 75 to \$5 50 per cwt.; Beef, \$2 50 to \$3 50 per cwt.—Enquirer.

Morrisburg Markets, Nov. 25.—Flour, per 100 lbs., \$2 50 to \$2 60, Wheat, per bushel, 95c to \$1, Barley 60c to 65c; Oats 30c to 32c, Buckwheat 30c to 32c, Bran, per ton, \$12, Pork, per bbl, mess, \$17 to \$18; Pork, primo mess, \$14 to \$16; Beef, per 100 lbs., \$3 50 to \$4 50, Pork \$6 to \$6 50, Rye, per bushel, 60c to 55c, Butter, per lb, 18c to 19c, Hay, per ton, \$8, Peas, per bushel, 60c, Wood, per lb, 35c to 40c, Clover Seed, per lb, 10c to 11c, Grass Seed, \$1 50 to \$1 67.—Courier.

Peterborough Markets, Nov. 24.—Flour, per bbl, \$4 25 to \$5, Fall Wheat, per bushel, 80c to 85c; Spring Wheat, per bushel, 75c to 80c; Potatoes, 30c to 35; Barley, per bushel, 50c to 55c; Peas, per bushel, 55c to 60c; Oats, per bushel, 40c, Hay, per ton new \$10 to \$14, Hides, per cwt, \$3, Sheepskins, 50c to 60c, Wool, per lb 30c to 35c, Pork, \$4 to \$5 50.—Review.

Ottawa Markets, Nov. 24.—Fall Wheat, per bushel, \$1 to \$1 65, Spring Wheat, 95c to \$1; Flour, extra, per bbl, \$5 25; Superfine, No 1, \$5, do No 2, \$4, bags, Extra Superfine, per 100 lbs, \$2 63; do do No. 1, \$2 50; Cornmeal, per 200 lbs, \$3 25 to \$3 50; Oatmeal, per bbl of 196 lbs, \$5 15; Buckwheat, per bushel of 48 lbs, 35c to 40c; Rye, per bushel of 56 lbs, 50c; Barley, per bushel of 48 lbs, 60c to 60c; Corn, per bushel of 56 lbs, 60c to 65c; Oats, per bushel of 34 lbs.; 35c; Peas, per bushel of 60 lbs, 55c to 60c; Hides, slaughtered, per 100 lbs, \$4 to \$4 50; Wood, hewed washed, 40c to 45c; Butter, fresh, p r lb, 20c; do tub 15c Eggs per doz, 15c Hay, per ton, \$10 to \$17, Pork, per 100 lbs., \$6 to \$7, Beef, per 100 lbs., \$3 50 to \$4 25.—Citizen.

Advertisements.

THE WHITE WILLOW.

(CERTIFICATE.)

WE, the undersigned, Citizens of the Township of Delaware, in the County of Middlesex, Province of Canada, Do hereby certify, that we are personally acquainted with Mr. JOHN CALCOTT, of Lot 13, 4th Concession of said Township of Delaware, and know him to be a person of integrity and punctuality, and assure those who may favour him with orders for the WHITE or REDDON WILLOWS, (Satzu Albat), that they will receive the utmost satisfaction, as he is prepared to supply the genuine article, promptly and faithfully.

- (Signed.) W. LIVINGSTON, J. P. ROTHWELL, GARNETT GEO GODFREY, J. P. F. C. ROGERS, SIDNEY SEABROOK, A. FRANCIS, M.D. BENJ. PAINE, WILLIAM F. BULEN, J. P. C. J. LADD, P. M. GEO STEPHEN ROGERS, J. P. THOMAS MILLER, WM. F. BULEN, SEN., J. P. WM. GRAHAM, CAR JOHN JOHNSTONE, CL'K. JACOB WEYLER, J. P. WILLIAM FIELD, J. P.

GRAPE VINES!

CHOICE VARIETIES, by Mail, at 25 cents each. Hartford P. O. We are an American first-class Grapes, and ripen with us in open air, in August and early in September, and sell readily at 25 to 35 cents per lb. whole-sale. They are very hardy vines, and require no shelter, and with good care will bear 20 lbs. the second year after planting. Persons enclosing \$1 in registered letter to my address before the Vines are all ordered, will receive by mail, post paid in the Spring of 1865, two vines of each variety, and larger quantities, if required. Write plain your name and Post Office. Direct

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