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THE  
Canadian Agriculturist.

VOL. IX.

TORONTO, MARCH, 1857.

No. 3.

BOARD OF AGRICULTURE—BONUS TO SUBSCRIBERS.

We have much pleasure in announcing to our subscribers that we have made arrangements with the Board of Agriculture, to obtain from that body, *a copy of its volume of Transactions for each subscriber to the Agriculturist for the present year!* This volume will contain an account of all the operations of the Board, abstracts from the Reports of Agricultural Societies, Prize Essays on Agriculture, Official Report of the Association, Prize List, &c., &c. It will probably make a volume as large as the *Agriculturist*, and will be printed so that *the two may be bound together.*

The sheets as they are published, will be sent by mail to all societies, clubs, and individuals, whose names are on the mail books of the *Agriculturist*, and without any *additional charge to the subscriber.* We hope the result of this offer, which we are only enabled to make through the liberality of the Board, will be to *double*, at least, the ordinary subscription list of the *Agriculturist.* It will entail on us a very considerable amount of additional labor and expense. Every Agricultural Society in Upper Canada should immediately order the *Agriculturist* (with which the "Transactions" will be sent) for each of their members. Either of the volumes will be worth more than the 2s. 6d. charged as a stimulus to the Society itself, to say nothing of the benefit to agriculture generally. Will any Society spend its funds upon *foreign* journals, when a *Home publication*, and a volume containing the official proceedings, Reports, Essays, &c., of all the Agricultural Organisations of Upper Canada, can be had for the same price? To every subscriber of the *Agriculturist*, we would say,—as a slight return for the *bonus*, as some compensation for the trouble it will entail upon us, send us the name of at least *one* of your neighbors—more if you choose—as a fellow subscriber. The effort will not cost much, and if every person whose name is now on our list will make it a point to do this, we promise to make the paper more interesting and useful than it has yet been. We shall feel much obliged to our newspaper contemporaries—to whom we are already under many obligations for their favorable remarks—if they will notice the above arrangement.

## CENTRAL HORTICULTURAL AND AGRICULTURAL CLUB

## TURNIP AND OTHER ROOT CULTURE.

At a meeting of the Club, on Thursday last, Captain Beresford, of Newmarket, read the following paper on the Cultivation of Roots:—

The uses of roots were as well known to the ancient Romans as to any British farmer; and the winter-feeding of cattle with roots was practised even among the ancient Gauls. Pliny remarks that "some Roman authors have treated of rapa in only a cursory way. The Greeks more particularly, but if a just order were observed, it should be mentioned immediately after wheat, or at least after the bean; for no other plant is so well adapted for food to all sorts of animals." But though the cultivation of the turnip was known to the ancients it has been left to the British husbandmen to make manifest its importance and in the words of an English writer, "Turnip husbandry greatly aided the transition from the barbarous agricultural usages of the middle ages to the enlightened ones of the present day; and is now well known to every good farmer to be the sheet anchor, or *anc qua non* of the modern alternate and convertible husbandry." At what time the field cultivation of Turnips was begun in Britain, is not, I believe, exactly known. They were employed for domestic purposes at an early date. The field cultivation seems to have been introduced from Flanders, and to have taken special root in Norfolk. Wortidge, in his "Mysteries of Husbandry," printed in 1669, says:—"In Holland they slice their turnips with their tops, and rape-seed cakes and grains, and therewith make mashies for the cows, and give it them warm, which the cows eat like hogs." And he complains of the great neglect of all similar uses of turnips in the farm economy of England. The usual mode of sowing turnips both in Flanders and in Norfolk was broad-cast, and continued so for many years, until the introduction of the drill system; and the benefit which that system confers in respect to quantity of produce and economy of labour, together with the facility it affords to hand hoeing and horse hoeing, and the land thereby being cleansed and fertilized by this important crop, cannot be too fully appreciated. Under due management it may be considered that almost all kinds of soils which are capable of thorough tillage may be cropped of some kind of root, either turnip, parsnip, carrot, or mangel-wurzel. In Britain the practice is to fall-plough the land intended for roots, in this country the earlier in the fall this operation is performed the better, to allow time for the grass and seeds to decompose, and as early in the spring as the season will permit, the land should be ploughed again and well worked with the harrow and the cultivator. With regard to the question of the most efficient system of manuring land for a root crop, an enquiry into it is so vast, and contains within it such abundant matter for discussion, that I shall not enter into it, as we should have to take into account that which is best adapted to promote rapid and early growth, to assist the plant to escape destruction from insect depredation, the effect upon the development of the root, the influence over the chemical constitution of the root, both with regard to the general feeding and fattening powers on the live stock, and lastly to its adaptation to the uses of the succeeding crops in the rotation—in it is contained almost the entire science of agricultural chemistry; still without entering upon it, this much I believe, is recognized, that well rotted dung is essentially necessary to the culture of the turnip, where it is used at all. The turnip is the most important root cultivated; and whatever relates to it may be applied to the culture of mangel-wurzel, carrots, etc., and as barn-yard manure is generally employed in this country, I shall direct my remarks to the mode of cultivation under which I have seen raised large crops of these roots. Where farm yard manure is used the raised drill or ridge method is probably the best, the ridges are made either with a single cast of the double mould board plough or a double one of the common plough, a cart with manure follows, the dung is deposited in the seams made by the plough, the plough again follows, closes the ridges, covering the manure, and the drill succeeds. A light roller goes over the sown ridges to cover the seeds. The distance between the drills should not be less than 27 inches, Tull appears to have used intervals of three feet. Mr. Dawson, of Goodaa, Roxburghshire, after some residence in the county of Norfolk, adopted the drill system in preference to the mode which he had seen practised in that county. Mr. Dawson began

the drilled turnip husbandry in 1764, growing nearly 100 acres yearly; he fixed upon 30 inches for the best interval for the purpose, and his practice has been followed in all the border counties. Stevens remarks, "It is not an unusual practice in England to sow turnips broadcast in the flat ground, instead of on drills, and the reason I have heard stated in vindication of the broad-cast method is, that it resisted the bad effects of drought, but for my part, I cannot see how a broad-cast crop can screen the ground from drought more effectually than one in rows, since the plants have to grow and be thinned out to proper distances, and the ground stirred to get rid of the weeds, in both cases, and as the weeding is done by hand instruments in the case of the broad-cast crop, it is not so effectually done," and I may include economically done, "as with horse hoe, in the crop in rows. And I think it cannot admit of doubt that the same quantity of manure placed immediately under the seed should promote the growth of the young plant more rapidly than when spread over a large surface of ground." I trust we shall have some remarks by some of the gentlemen present on this point, also with regard to preparing the land in the fall. The after culture of the turnip consists in thinning or singling the plants to the proper distances, and in a series of operations for destroying weeds and stirring the soil. The first is generally done by a horse hoe, when the plants have acquired the rough leaf, or are about two inches high. A few days after this operation the hand hoes go to work, and so hoe the turnip plants as to leave them standing singly at the distance from each other of not less than 12 inches between the plants of Swedish turnips and 9 inches between those of the white. This operation of singling is most important; much must be left to the judgment of the farmer. To show how important careful attention to this point is, it has been shown that the difference of one or two inches between the turnips has influenced the weight of a crop by several tons per acre. It is a delicate operation and requires the superintendence of the master and the hand of a skilful laborer. The raising of stock in this country is an important and interesting question; is sufficient attention directed to this important point? It was likewise a difficult task in Britain to support live stock through the winter months, and the practice of feeding cattle and sheep for market was hardly ever attempted until turnip husbandry commenced. The Canadian farmer experiences the same difficult task; and why, because he affords his stock nothing but dry food. How many cattle are there in this country who, from the time the snow falls on the ground in, December, until the month of April, never partake of any vegetable food? Is it possible to maintain the milch cows and other stock in a healthy condition, without a portion of roots with their dry food? I heard a gentleman, an agriculturist, not, however, a Canadian, say at a public meeting held during the time of the Provincial Exhibition at London, "that turnips were a nasty cold food,—that he was surprised to see the farmers of Canada grow them." In Mr. Hall Maxwell's Report from the Highland Society of Scotland, presented to the Commissioners of Privy Council for Trade, he reports, that the total average under crops was, in 1856, 3,545,721½; wheat, 263,328; turnips, 459,741½ acres. What has not root-culture effected in Scotland? what has not the same system wrought in England? England, by maintaining a considerable area in crops, maintains the fertility of her soil; and according to the Journal of the Royal Agricultural Society, produces four times more wheat per acre than France; yet the climate of England is not particularly adapted for growing wheat. In the United Kingdom there are 35,000,000 sheep. France has only an equal number: and a French sheep is only half the size of an English sheep. I confess, I view these facts as showing the importance of root cultivation. The land is cultivated, an abundance of food is provided for man and beast, the fertility of the soil is maintained, the land is cleaned by this preparatory crop, and a bed is provided for grass seed, in which they grow and thrive with greater vigour than after any other mode of preparation. There are many persons here present who saw the Toronto Christmas Market. Was it a show of Canadian beef? The Canadian farmer appears to be giving up raising stock—arising from his neglecting his root crop. I have stated that in England, by attention to green crops and raising cattle, four times as much wheat per acre is raised as in France. We import our beef—soon we may have to import our wheat. Every Canadian farmer could, with perfect ease, devote every year a portion of his land to roots; five acres, at least, to every hundred in cultivation; by so doing, he will be able to maintain more stock, obtain more manure, and produce more wheat per acre, than under the present system. The nutritive matter contained in an acre of turnips is great; in a crop of 20 tons, or 45,000 lbs., there were 900 lbs. of thick or woody fibre, 4,000 lbs. of starch, sugar, gum, 670 lbs. gluten, 130 lbs. of fat or oil, and 300 lbs. of saline matter—total, 6,000 lbs. A crop of 25 tons, or 56,000 lbs. per acre of carrots, contains 1,680 lbs. husk, or woody fibre, 5,600 lbs. of sugar, 840 lbs. gluten, 200 lbs. of fat,

and 800 lbs. of saline matter—total, 9,120 lbs. The quantity of nutritive matter afforded by a crop of mangel wurzel of 20 tons, or 45,000 lbs. per acre, consists of 900 lbs of husk or woody fibre, 4,950 lbs. of starch, sugar, etc., 900 lbs gluten, 450 lbs. saline matter—total, 7,200 lbs. From a crop of oats, at 50 bushels per acre—the 50 bushels weighing 2,100 lbs.—we obtain 420 lbs. of husk or woody fibre, 1,050 lbs. of starch, 300 lbs. of gluten, 100 lbs. of oil, and 80 lbs. of saline matter—total, 1,870 lbs. A heavy crop of wheat, at 60 lbs. to the bushel, the weight of grain per acre would be 2,700 lbs. The amount of nutritive matter from an acre of Indian corn, at 30 bushels, amounts to 1,003 lbs. From an acre of peas, at 25 bushels per acre, 1,392 lbs. We have, therefore, 6,000 lbs. of nutritive matter from an acre of turnips, 9,120 lbs. from an acre of carrots, 7,200 lbs from an acre of mangel, 1,870 lbs from an acre of oats, 1,703 lbs. from an acre of Indian corn, 1,392 lbs. from an acre of peas. An acre of good turnips is calculated in Scotland to keep four oxen: would an acre of wheat, or oats, or Indian corn maintain that number? I am indebted to Stevens for these calculations, taken from Johnston's Lectures on Agricultural Chemistry.

The use of carrots on a farm is well known to those who cultivate them. The seed should be sown early in the spring—the land having been well worked, for the carrot delights in depth and in openness of soil. The grand use of carrots on a farm is for strengthening and medicinal food to horses and cattle. A gentleman of my acquaintance was very successful in giving them last spring to his horses, when they were recovering slowly from influenza. They greatly promote the health of all animals. The difficulty attending the sowing of the seed of the carrot operates against any large breadth of land being devoted to its culture. They should occupy, however, some space in every root field of the farmer. The long red mangel wurzel, the globe orange and the red turnip rooted are eminently suited for culture in this country. They are suited to a much greater diversity of soils than the turnip. On peaty soils on the reclaimed bog lands of Ireland, they have produced a large amount of food. Equally a cleansing crop with the turnip, the mangel stores as well, if not better, is excellent spring food, can be sown earlier, not being subject to insect depredation. Experiments have been made of late in Ireland of substituting the mangel for part of the daily allowance of oats to working horses, and a calculation made, that by consuming in this way the mangel produced by half a rood of land, a quantity of oats will be saved, which it would require two acres to produce. This crop should be harvested early. I found them more tender than the Swede, the yellow globe more than the red. In pulling them care must be exercised to inflict upon them as little injury as possible.

The parsnip is even more productive than the carrot. In the south of England and in the channel islands, it is much cultivated. In a trial of the Altringham carrot and the parsnip, in Jersey, in 1834, the same quantity of land which produced 261 lbs. of carrots, produced 540 lbs. of parsnips. The Alderney cows are fed on these roots. Their milk is surpassingly rich, and yields more butter, in proportion to quantity, than that of any other kind of cows. Colonel Le Couteur, an experienced agriculturist, states that out of three crops of parsnips, in the island of Jersey, in competition for a premium, the prize crop amounted to 27 ton 8 cwt. per acre—a quantity nearly sufficient for 10 cows during the six winter months. The methods of culture practised in the Channel Islands, are both broadcast and drill; deep trench tillage is adopted, from 1 foot to 18 inches deep. In the spring of 1854, also in the spring of 1855, I partook of the parsnip root which had been all winter in the ground. They were free from decay and of excellent flavour. That the cultivation of roots have proved itself of extraordinary service to the farmer of Britain, is evident to every intelligent mind. It has enabled them to provide a supply of food for their stock, and maintain them in good condition during—even in that country, the trying season before the commencement of the spring feeding, to maintain the fertility of their land, produce more wheat and keep more stock per acre than even France. I am well aware that in this climate we cannot carry the culture of roots to the same extent as is followed in Britain; but when we look to the amount of nutritive matter obtained from an acre of roots, and that by their culture they are the procurers of other future good crops, I am impressed with the opinion that every farmer should cultivate, in certain proportions, the mangel wurzel, the carrot, Swedish turnip and some variety of the white. By commencing in May with the mangel and carrot, in June with the Swede, and even as late as July with the white turnip, he will be able, to some extent, to avoid those difficulties which we have to encounter in this country with regard to labour, and attend to each crop in its several stages of growth, feeding out these different roots in their several

seasons, and by it turn the earth to the uses for which it is intended, and avoid those evils which the wretched system of a continual growing of wheat is certain to insure, which has reduced the average yield in parts of the neighboring State of New York to 10 bushels per acre, and taking the whole State, the average to under 15 bushels; and even the great State of Ohio, it is said, will soon have to become an importer of food. In Scotland, where turnip husbandry is so much considered, the average yield of wheat in the 32 counties is over 28 bushels per acre, and this includes the northern counties and the Orkney Isles. I allude more particularly to Scotland, as that country, through the Highland Society, affords agriculturists a large and valuable amount of useful information.

The question, can you grow roots in this country, can you harvest them and store them? I shall not discuss. I am fully impressed with the opinion that we can do so, and that turnip husbandry is the sheet anchor or *sine qua non* of the modern alternate or convertible husbandry, that the operations of a farm cannot be conducted with profit without it. For the production of one description of food produces another,—vegetables are converted into mutton and beef to be again returned to the land in the shape of manure. Production and reproduction thus follow each other, ill conditioned farms made to produce waving fields of grain, the cultivated grasses to take the place of those which possess no nutriment and render no return. This is the return that turnip husbandry has wrought in Britain, where great flocks of sheep and improved breeds of cattle are spread over the country, and whose farmers make yearly profits exceeding the rent rolls of some of the Princes of Europe.

In Ireland the increase is most striking with respect to root crops. No longer ago than 1847 the proportion was an acre of green crops to every four acres of corn (wheat). There is now, in 1856, an acre of green crops to every two acres of wheat. The value of live stock in 1841, was computed to be £19,339,000. In 1855, it was computed at £33,508,010. Thus it is where turnip husbandry exists and the culture of roots is considered, the toil of the husbandman receives a return. Where the culture of roots is neglected we descend to 10 bushels per acre of wheat, and the toil of the husbandman receives no return.

A discussion of some length then took place upon the subject of the paper.

Mr. Armstrong observed that the proper preparation of the land, and the selection of the time of sowing turnip seed were very important points. A few days might make all the difference between securing a good crop and a failure. He would also recommend sowing plenty of seed, so that enough of the plants would be able to get away from the fly. As a general rule he found from the 15th to the 20th of June the best time for sow-swedcs, if the condition of the ground and weather were favourable. The quantity of seed he used per acre was about 2lbs. He would have been glad if Capt. Beresford had entered a little more minutely into particulars of the mode necessary to cultivate successfully in this country.

Capt. Beresford observed, as to the time of sowing, that the fly was not always regular as to the date of its appearance or disappearance. He generally endeavored to finish sowing by the 20th of June, considering that the most favorable season.

Mr. Denison observed that though only perhaps an amateur farmer, he had cultivated turnips successfully on a small scale. He sowed in drills about 27 inches apart. He thought that farmers should not allow their turnips to be lost for want of rain, but if at the critical point, in danger from the fly, and no rain came, they should water them artificially. This might be done at a trifling expense, by mounting an old wine cask upon wheels, with a proper distributing apparatus attached. He had practised this plan with great success. He had not, however, used simply water, but liquid from a tank in the barn yard, and this he thought better, as it pushed the young turnips forward out of danger.

Mr. Fleming observed, as to the distance of the drills, he had found while judging the crops entered for the Etobicoke sweep stakes last fall, that the turnips sown in drills about 27 inches apart appeared to be the best accommodated with, the amount of space they required. Those a greater or less distance apart, did not appear to be so good.

Professor Buckland observed in reference to the liquid manure cart touched upon a very important point. The getting into the rough leaf as every body knew, was the critical point in the growth of the turnip. If it hangs fire then it will never get over it. If the soil is very dry, so that the extremely minute and delicate roots of the young plant

cannot absorb any nutriment, and especially if the fly also make its appearance, the plant is then irretrievably lost. But if by any means sufficient moisture can be availed of to dissolve the manure in the soil, and convey it to the small roots; or if diluted liquid manure can be applied to answer that purpose, and so give the plant a start at the critical period, that is the great point to be looked to in the cultivation, after that all is required in proper hoeing and thinning. As to the mode of sowing, drill cultivation was undoubtedly the distinguishing feature of Agriculture at present; but he had known farmers in the south of England cultivate very successfully on the broad cast plan. He knew farmers there who sowed as much as 7lbs. of Swede turnip seed to the acre, so as to secure an abundance of plants, and thinned out into rows with the horse hoe afterwards. This plan had been followed on the same farms for the past fifty years by some who were called farmers of the old school, and a failure had never been experienced. As to the distance of the drills, that should be governed by the quality of the soil. In poor soil the plants should be closer together than in rich soil, because it was important to have the ground pretty well shaded by the tops as soon as possible. and the roots in poor soil did not require so much room to expand as in rich soil. As parsnips and carrots had been alluded to, he would state as one gentleman had remarked was the case in this country, that in England he had found it difficult to eradicate them from the ground after they were once sown. He would like to enquire of some of the gentlemen present what their experience had been as to the keeping qualities of Mangel Wurzel, as compared with turnips.

Several members replied to this point, the general opinion appearing to be in favor of Swedish turnips, as less liable to injury from frost, although it was admitted that if mangel could be secured untouched by frost, they would be in spring, and far advanced in summer, in much fresher and more succulent condition than turnips.

Some further conversation took place as to the best means of preserving roots during winter, and other points connected with the subject.

Mr. Fleming was glad to be able to state, from his knowledge of the fact as a seedsman, that the breadth of Swede turnips annually cultivated was rapidly increasing. Last year he had imported seed enough to sow 2000 acres, which was fifty times as much as would have been required a few years ago. Besides a great deal of seed was grown in the country.

The thanks of the Club were then voted to Capt. Beresford for his valuable paper.

The following gentlemen were then proposed and elected as new members:—

Hon. J. H. Price, Walter McKenzie, H. Quettin St. George, Andrew Ward, James Sanson, Jesse Thomson, Joseph Ross, Rd. Playter, Rice Lewis.

The Club then adjourned till Thursday, 19th inst. when Mr. R. Davis will read a paper on the "Comparative Physiology of Animal and Vegetable Structure."

**SPRINGHALT.**—Mr Feron informs us, that this singular spasmodic affection is esteemed graceful in some continental countries; at least when it exists in both hinder legs, as it frequently does, being however usually confined to one side: very seldom indeed is it found in the fore, of which we have seen but one or two instances at the most. It is evidently a spasmodic contraction of some one or more of the flexors of the leg, which usually ceases after the animal is in motion; it is the consequence of local irritation or of pressure on some nervous fibrila, which the excitement of exercise renders less acute; and generally restores the action of the legs to its natural condition. It is not hereditary or congenital, and seldom appears until the approach of the adult age. It is injurious inasmuch as it unfits the horse for certain purposes, as racing, delaying the start so long, as to give away every advantage. It is considered incurable; and therefore any and all treatment is useless, save for experiment.—*Exchange.*

**EVIL COMPANY.**—The following beautiful allegory is translated from the German:—  
"Sophronius, a wise teacher, would not suffer his daughter to associate with those whose conduct was not pure and upright. 'Dear father,' said the gentle Eulalia to him one day when he forbade her in company with the volatile Lucinda, 'you must think us very childish if you imagine we could be exposed to danger by it.' The father took in silence a dead coal from the hearth, and reached it to his daughter. 'It will not burn you, my child; take it.' Eulalia did so, and behold the beautiful white hand was soiled and blackened, and, as it chanced, her white dress also. 'We cannot be too careful in handling coals,' said Eulalia, in vexation. 'Yes, truly,' said the father; 'you see, my child, that coals, even if they do not burn, they blacken; so it is with the company of the vicious.'"

## TOWNSHIP OF HAMILTON FARMERS' CLUB.

At a meeting of the Township of Hamilton Farmer's Club, held at Grieve's Hotel, Court House, on Saturday, January 31, 1857.

Matthew Forsyth, Esq., in the chair. Present, Messrs. Alcorn, Underwood, Wright, White, Ball, Bennett, Burnham, McDonald, Richardson, McMurray, Johnston, Brown, Roddick, Riddell, &c &c.

Mr. Riddell read the following address on

## CHEVIOT SHEEP.

Sheep are certainly among the most useful of the domestic animals. With them prosperity and industry are introduced into a country, and there is probably no animal that contributes so much to our comfort as the sheep, as there are few, or none of the inhabitants of our country from the highest to the lowest, who are not daily arrayed in some article of dress made from the cast off covering of a sheep. Besides in every house from the cottage to the palace they furnish the most comfortable articles of furniture.

From the earliest records of our race, we find man keeping flocks and herds, and in ancient times the keeping and tending sheep was the employment of Prince and Patriarch, of Priest and Prophet. It is not however sheep in general, but one particular variety to which I wish at this time to direct your attention, a variety which has not been extensively introduced here as yet, but which I feel assured, when their many valuable qualities become known, will yet be found suitable to us, especially to the higher and more hilly sections of the country. We shall proceed to notice very briefly the history—numbers—management—quality, &c., of the Cheviot Sheep.

*History*—From time immemorial the Cheviot hills have produced a breed of sheep of large carcase, and valuable fleece, which, combined with hardiness and endurance of privation second only to the Blackfaced heath breed is justly ranked as the most valuable mountain breed in the kingdom.

Previous to the middle of the eighteenth century they seem to have been confined to the mountainous districts of the two counties of Northumberland and Berwick—approaching nearly to the sea at the latter place and reaching inland perhaps thirty miles.

From that period they spread gradually westward, and they now occupy not only the grassy hills of the Border counties but nearly the whole range of hills which have often been called the Southern Highlands of Scotland. Before the beginning of the present century the Cheviot breed of sheep had spread over nearly all the south of Scotland, and had there supplanted the black-faced breed, and though there have been pauses in the progress, when from bad seasons the farmers were deterred from changing, yet it may be said on the whole, that it has been regular and steady; and now in the hilly districts from the east to the west coast of the south of Scotland, they constitute three-fourths of the breeding stock, the other fourth being Black-faced.

In the Highlands of Scotland, north of the Forth the introduction of Cheviots began only about the commencement of the present century, by the late Sir John Sinclair, but they were generally introduced by farmers from Northumberland and Roxburghshire who took leases of some of the large mountains famous in Sutherlandshire, they are now found in great force over large portions of the north and west Highlands, where they have thriven amazingly, and in the hands of some spirited breeders have attained to as great perfection as in their native district. Indeed some of the five year old ewes from Sutherlandshire are admitted to be better than any others in Scotland. The Cheviot sheep has likewise been introduced to portions of Ireland and Wales, and of late partially into the Cape of Good Hope where by crossing they probably increase the quantity and quality of the carcase and wool. And there seems no doubt from their hardihood and highly improved qualities for producing both mutton and wool, that they may yet spread with great advantage over many portions of both Europe and America.

*The number* of this breed is estimated by Mr. Stewart Hillside, (in a valuable paper on this breed prepared by him for the Paris exhibition) thus: "By the statistical report of 1854 the number of sheep in the counties south of the Forth amounts to 2,231,438, of these we estimate the Cheviot including the immediate progeny of Cheviot ewes by Leicester rams at three-fourths or about 1,900,000. And north of the Forth the whole number being 3,133,299, the portion of the Cheviot breed may be 1,500,000. And there



may be added of Cheviots in the four or five northern counties of England, breeding on the hills or feeding on the lower land, perhaps 300,000, total 3,700,000.

*Management.*—The breeding of Cheviot sheep is almost entirely confined to the hilly or uncultivated portions of the country which runs across Scotland. It comprehends the upper parts of the valleys and the hills on which the branches of the rivers take their rise, and the extent is nearly equal to the half of the country south of the Forth.

The farms extend in size from seven to eight hundred acres, up to seven or eight thousand acres, but in many cases one farmer holds several of these farms though detached from each other and his own residence. The farms are mostly rated by the number of acres of sheep they can keep, some of the very best may keep a sheep to the acre, but more commonly they keep a 1000 sheep on from 1200 to 1800 acres. One shepherd is kept for about every six hundred sheep, the shepherds are paid by having kept for them a certain number of sheep their own property (*which is called their pack*) with one or two cows and a quantity of oatmeal, as theirs is a very responsible situation, they are among the best paid of rural laborers.

The natural herbage on these sheep walks varies much both in quantity and quality. On some farms heath preponderates, and the grass for food among it is scanty. On other *bents* and green sward of a coarser or finer herbage covers the hills; and on the lower slopes or damp clay sub-soils, there is a coarse green growth which affords much sustenance, particularly in winter and spring this class of soils has been much improved of late years by open drains, a mixture of all these various soils and grasses is conducive to the health of the sheep. On most of these farms the sheep is kept all the year round, each sheep keeping within a small range, but in a few high situated farms, and in severe winters with heavy snows they have to be removed to some lower situated farms where there is little snow for a few weeks, this is called *flying*, and may happen once in seven years; neither is it now so common as formerly, as on these farms subject to such snows, sufficient hay is cut from the ground to keep the stock for several weeks. Loss by disease happens on all farms, though some lose much more than others. It may range from two to ten and more per cents. It may average exclusive of sucking lambs about five per cent. The loss of lambs in ordinary seasons is likewise about five per cent, but in bad springs and lambing time, or after severe stormy winters it may reach even more per cent.

The breeder of the Cheviot sheep seldom combines the occupation of feeding them for the butcher. This is left for the occupiers of arable farms on the lower grazing ground. The wether lambs are sold in the months of July and August, being then transferred to the low country grazier, who keeps the lambs on his young grass after the grain crops are cut till about November or the beginning of December when they are put on turnips, and sent fat to the butcher when from sixteen to twenty-one months old. Their weight then, when alive will run from 120 to 160 lbs. The four quarters of mutton weighing from 65 to 85 lbs. This is particularly the case in Cumberland where Cheviot lambs are preferred to all other breeds by the low country farmers and by whom they are managed with great skill and success. It is not at all unusual with them to realize an increase of twenty to twenty-five shillings per head on the purchase price of these lambs after a twelvemonths keep. This fact is peculiarly interesting from the proof which this affords of a hitherto unsuspected capacity in Cheviots and probably in other upland breeds to attain a profitable degree of fatness and weight of carcase at almost as early an age, as any lowland breed when the same attention and liberal feeding is bestowed upon them.

Liverpool is the principal market for such sheep but many are sent to Manchester, Newcastle, Edinburgh and Glasgow. No mutton is considered better or gives a higher price, the general rate for some late years for lots averaging say 72 lbs. the four quarters is about two pounds (sterling) or perhaps two guineas. The lambs will clip in June an average of five pounds of wool which gives nearly the highest price of any British wool, being fit for the same class of manufactures as south down wool.

*Quality.*—As the Cheviot sheep are unknown to some of us, I condense the following description of them from Morton's "Cyclopædia of Agriculture" where it is said they rank as the most valuable breed in the kingdom. "The Cheviots are destitute of horns in both sexes; the face and legs are white, though individuals occur in the purest flocks in which there are mottled gray—an indication as many allege of superior hardiness.

The head is erect, long, and clean; and while the neck and throat are well covered with wool, none must appear on the head. The eye is lively and prominent; the ears long, open, and well covered with hair. These different features combined, must exhibit

a fine, open, and sprightly countenance with every indication of hardiness. The legs are moderately long, clean and fine, the hind quarters full and well proportioned; the rumps full; the tail neatly set; well covered with wool."

There is a tendency to lightness in the fore quarters, though this is a defect which careful breeding is doing much to obviate. The neck and chest should be full; the ribs rounded, and well filled up behind the shoulder. The pelt thin, and covered with uniformly fine wool, free from dead hairs, coming well down on the quarters, forward on the neck, and completely covering the belly; the fleece weighs from three to four pounds; according to the nature of the pasture on which the sheep is raised. The character of the wool as well as of the carcase of the Cheviot sheep was considerably different during the last century from what it is now.—Quantity is now more eagerly sought than quality to raise the value of the wool, and the carcase has been brought to exhibit the features which was known to indicate early maturity; and a ready disposition to fatten. Hence, instead of the close staple of former times, denoting a fine but light fleece, that of the modern Cheviot has become longer and more open—considerable heavier, but somewhat coarser instead, also, of the low shoulder and rather narrow chest, the former has become better proportioned, and that developement of chest has been obtained which at once indicates a disposition to fatten, and a vigorous constitution—that grand desideratum in every domestic animal, thus the most valuable properties of the Cheviots have been obtained by an intelligent application of the true principles of breeding, without any mixture of foreign blood. This, indeed, was unnecessary; for the Cheviot being confessedly the most valuable mountain sheep, contained in itself the best material to work upon, while great danger was to be apprehended from any cross, which should produce the desired qualities at the expense of that hardiness of constitution, without which a bred is useless for stony hills."

While on this part of my subject I shall say a few words about the weight of the common Cheviot sheep, a friend who owns this class of sheep writes to me saying: that common hill fed sheep (that is with nothing but grass) will weigh 15 and 16 lbs. per quarter exclusive of tallow, and on the farms of Moolaw or Fingland or Cassock, they are commonly 20 and 21 lbs. per quarter, but these stocks are above an average, he further adds, Cheviot wethers killed at two years old, that have been fed on grass in summer and turnips in winter average from 24 to 26 lbs. per quarter, and their wool pulled from the pelt will weigh from 5 to 6 lbs. and their tallow from 10 to 12 lbs. and further that if they are kept to two and a half years old, say killed in August they, when fed on good clover grass, with a liberal allowance of crushed oats and oil cake they may be brought to weigh from 30 to 33 lbs. per quarter, and their wool pulled from the skin will then weigh from 7 to 8 lbs. At some of the Highland Societies shows Cheviot wethers three years old have been shown that weighed 40 lbs. per quarter, but these would be from the best stock, and of course with the most liberal feeding.

I have already dwelt too long on this subject, but before closing permit me to notice briefly the crossing of this class of sheep the crossing of the Cheviot ewe with improved Leicester ram, has within the last thirty years been carried to a great extent. When speaking of their management I neglected to state that the Cheviot ewe is never kept for breeding on hill stocks, after she is six years old, and it is to these ewes for the last crop of lambs, that the Leicester ram is put as the ewes are seldom used for breeding afterwards.

This has much enhanced the value of the Cheviot sheep as they are much hardier, and better nurses than the Leicester ewes, and their progeny produces as heavy, and finer mutton than the pure Leicester, this crossing is most extensive in the counties of Dumfries and Roxburghshires than any other, but it is general over all Scotland and the North of England. These half breed lambs (as they are called) are weaned in July and August, that is such of them as have not been already sold to the butchers, for they are extensively sold near towns, to supply the markets with lambs, the best sorts will then weigh 40 lb. of mutton, they are carefully kept on fine grass till October when they are put on turnips, and fed through winter, and are sent to market as they become fat, at from 60 to 80 lbs. mutton. In May or now even some times in April, those that are not already sold are clipped, the wool of the best sorts of cross at one year old will weigh about seven pounds of washed wool per fleece and sells as high as any British wool (at present 1s. 5d. to 1s. 6d. per lb. in average years 1s. 2d). The mutton of this cross sells nearly at as high a price as pure Cheviot, and about a penny per pound higher than the coarser Leicesters.

We have before us the sales of Cheviot Rams by four noted breeders, namely Mr. Aitchison, Mr. Borthwick, Mr. Bryden and Mr. Carruthers, the aggregate number of rams above one year old, sold by them was 557, the amount of sales was £4,761 6s., or at the rate of £8 11s. per head, about 100 of the best sheep gave from £15 to £25 and there are four gave from £50 to £99 sterling they show how highly the breed is appreciated in that country, and if equaled in Britain, it is only by the Leicesters and South downs, the two celebrated breeds which occupy the richer and more level lands of England.

If a good fair size, an excellent form, a good degree of early maturity though inferior in this respect to the Leicester, a constitutional hardiness equal to the necessities of our rigorous winters, a medium of fine wool, suitable for all family purposes, a disposition to fatten easily, a productiveness equal to any other breed, and a lightness of offal, be any recommendation, this breed possesses them in a high degree, and we think that they will be a great acquisition to this country both for a pure breed, and for the purpose of crossing.

I will only add that Cheviots have been imported into this neighborhood by Mr. William Roddick and likewise by Mr. James Dixon Clark.

Mr. P. R. Wright said, The question is simply this:—"Is such a breed of sheep as Mr. R. has described, suitable for this country? My opinion is, they possess no advantage over the improved Leicester and Gotswold, which in many respect they are much inferior to these justly celebrated breeds; in weight of fleece and carcass in early maturity and a disposition to fatten few will have the temerity to venture even a comparison, and their superiority in point of constitutional hardiness (even considering this questionable point) would not amount to much here, where housing and hand feeding half the year round is forced upon us;—For their *native* hill pastures, the Cheviots are no doubt unrivalled, so it is with the black-faced breed, in their Grampian Mountains; the Kylos in the western Highlands; the lordly short horn (born with a silver spoon in his mouth) luxuriating in the rich pastures of his native England, dozing a few mild winter months in a warm and well ventilated stable, each and all of these are extremely suitable for their respective localities—but neither would be profitable if—their position were reversed;—Canada can never be a great sheep growing country, we want the genial climate of Australia for the production of fine wool, and the Grampian Hills for rearing cheap and *good* mutton; our object ought to be, to obtain a stock of sheep suited to our circumstances, and these of a kind which will produce the largest returns to the possessors;—Farmers like other men, are prone to be over sanguine, and are sometimes led away, by exaggerated statements of the benefits of newly introduced improvements, instead of narrowly watching the results, or considering whether they are at all adapted to their particular localities;—I think it will be evident to most farmers, at any rate to those who have any experience in the matter, that the wintering of sheep entails most part the expense, both as regards labour and feed, and as we are compelled to bestow this extra care, it is wise to do so on animals which return the most wool and mutton, and they are unquestionably the improved Leicester and Cotswold; fashionable epicures may prate about the superior mutton of the south-downs, cheviots, or black-faces, but it will be some time yet before such sensibility of taste be general in cold Canada!—In regard to crossing one pure breed with another, the practice cannot be too strongly condemned; this was not the way "Bakewell" went to work, nor is it the cause of the improvement in the modern cheviot "selection," has been the renovator in both cases, and in skilful hands is amply sufficient; true, the Cheviot breeds cross with the Leicester ram, with the sole view of *selling* the cross at an *early* age, thus furnishing conclusive proof of the superiority of Leicesters in that important quality; crossing Leicester Ewes with a Cheviot Ram has never been done by sheep farmers whose example or advice it would be safe or prudent to follow.

Mr. Underwood observed—I agree to what Mr. Riddell has said concerning the Cheviots. I am glad to see them imported into this country, as I am confident they will answer very well, they are easily kept and hardy to stand the winter, I have lived among some of the best breeders of that class in Scotland; as for the Leicesters I cannot say much about them, as I never saw a flock of them together at home.

Mr. McDonald agreed to what Mr. Riddell had said concerning the Cheviots. He thought their mutton was before the Leicester, but he did not think they were as heavy, and would prefer the Leicesters, although a cross might answer very well.

Mr. Ball said he could say very little about the Cheviots, as his experience had been

with the native breed and the Leicesters. He thought he would prefer the Leicesters, as they were the largest he found when travelling in England lately; the Cotswolds were preferred, or a cross between the Cotswolds and the South-downs, which made a fine large sheep. I think as we have to feed them all winter, we may as well keep a large sheep as a small one.

Mr. Richardson said he would not like to say anything against the Leicesters, but he thought the Cheviots would answer well, he had five ewes at Mr. Roddick's Cheviot ram last season, and he thought them the finest lambs he had ever seen, indeed every one that saw them said they were very good; if he had the chance he would prefer putting them to the same ram again.

Mr. G. Roddick said, although he was a breeder of Leicesters himself, he approved of the Cheviots as they were hardy and easily kept. He had no doubt they could keep three Cheviots for two Leicesters, no doubt they are better to be well kept; he thought them a suitable breed for this country, he intended to get into a breed of them as soon as possible.

Mr. Alcorn said he had no experience of Cheviot sheep, as his were all improved Leicesters, but he thought they should be kept pure, and not crossed, as he thought the pure breeds best. After what they had heard from Mr. Riddell he thought little more could be said.

Mr. G. Underwood said—I think Mr. Riddell has set forth the qualities of Cheviots better than I can. I have been all my life amongst the Cheviots, I would prefer them before the Leicesters as they are hardier, and as we have a cold winter I am confident they will answer well. I am happy to see them come into the country; the Cheviots have been considered as a wild race, but when brought into fields they are as tame as other sheep.

Mr. Pratt said he greatly approved of the Leicester, although Cheviots were a breed he was not acquainted with, seeing we have to house our sheep in winter he liked a good large one, one that would have both a large carcase and a large fleece, he was afraid that they would be troublesome on our fences.

A vote of thanks was given to Mr. Riddell for his excellent address.

W. ALCORN, Secretary.

#### "OUR FRANK."

It was a costly marble,  
The fragrant sod that graced;  
And on the polished tablet  
Two simple words were traced.  
I brushed aside a rose-vine  
That shadowed o'er the dead,  
And read the brief inscription:  
"Our Frank!" was all it said.

But O! how much of sorrow  
That little sentence told!  
I knew some smiling cherub  
Lay 'neath that marble cold.  
I knew in some sad household  
There stood a vacant chair;  
And that a voice was silent,  
That once made music there.

And O! the smile of beauty,  
That sweetly beamed of yore,  
Had faded from their hearthstone,  
To be its light no more.

I know, too, there were playthings  
Laid by with tender care,  
And tear-stains on the garments  
The loved one used to wear.

Perhaps his childish tracing  
Was still upon the wall,  
His little hat and mantle  
Yet hanging in the hall.  
My heart was full of sorrow,  
My eyes with tear-drops dim,  
Thinking how deep the heart-grief  
Of those who mourned for him.

And as I turned in sadness,  
My eyes a cherub met,  
Whose fairy form and features  
Are in my vision yet.  
I clasped him to my bosom,  
With love's ecstatic thrill,  
And blessed the sovereign Giver,  
Our Frank was with us still.

**CURE FOR CHILBLAINS.**—To cure chilblains, simply bathe the parts affected in the liquor in which potatoes have been boiled, at as high a temperature as can be borne. On the first appearance of the ailment, indicated by inflammation and irritation, this bath affords almost immediate relief. In the more advanced stages repetition prevents breaking out, followed by a certain cure, and an occasional adoption will operate against a return, even during the severest frost.

## THE COST OF MANURE—WHAT IS TO BE DONE?

Although artificial manures are as yet but little used in Canada, the time will soon come when they will be sought after with considerable anxiety. Our best soils are being rapidly, and in many cases, *recklessly*, exhausted of their fertility. The ordinary sources of supply can not make good the exhausted elements, and, therefore, artificial or imported manures must be obtained, or lands will go out of cultivation. In England, millions are paid, yearly, for Guano and other manures, imported or manufactured elsewhere than upon the farm. We notice that a "rise of prices" in manures is treated by the English agricultural journals, as a matter of even greater importance to the farming interest than a *fall* of prices in breadstuffs. Gibbs & Co., the great dealers in Guano, have announced a rise of £2 per ton in their future importations of that almost indispensable manure. The alleged reason is, the limited quantity of the article and its rapid diminution. This announcement comes like a thunder clap upon the English farmer. The *Mark Lane Express*, and other agricultural journals, call loudly upon the Government to make search for other Islands, from which this invaluable deposit—more valuable than gold—may be obtained. The hopes once entertained, that a valuable manure might be manufactured from the Sewage of large towns, seem to be abandoned. If the Sewage could be transported to the field and applied in its fluid state, without detriment to the public health, it would, no doubt, prove a most valuable manure. But when deodorized by milk of lime,—the most available substance for that purpose—it loses its ammonia and becomes, comparatively, valueless. The Sewage Commissioners of London, after various experiments, have concluded to empty the fertilizing sewage of that immense city into the Thames, rather than to risk the public health by collecting and disposing of it to the farmers as a manure.

In the middle and Southern States, large quantities of Guano and other special manures have been used within the last half dozen years.

The *Rural New Yorker* states that "eleven million dollars are expended in the United States, for one variety of imported manure in a single season!" This manure is guano. It has been found useful in the worn out fields of the southern section of the United States, as a dressing of it will in most instances there produce a pretty fair crop when nothing at all would have grown had nothing been applied. It is certainly a liberal expenditure. But a serious question arises—how long can such a state of things continue? The guano thus used does not seem to conduce to a permanent fertility. This, therefore, does not seem to be good husbandry, for good husbandry will aim at and ultimately effect the permanent fertility of exhausted fields. Again, it cannot last forever, for the guano islands will in time become exhausted, even if others are discovered. It may not take place in this generation. The expenditure therefore, must be looked upon as a tax for momentary relief, not as a thorough cure for the evil; and yet it might aid essentially to a new system of operations,—might give a spring, a first impulse to the efforts of permanent improvement, if those who use it would be wise and properly preserve the grain of fertility, however small it may be, and use the strength thus gained for the collection of still more.

The Editor of the *Rural* reads a lecture to those who neglect this all important branch of good farming, and such are to be found all over the continent. They are not confined to the class of guano buyers. "Not one farmer in ten," says he, "collects the manure that he might, and not one in fifty gives to this product the care and attention he should. Agriculturists toil with all the energy possessed by them—work is made the equivalent of a profitable crop, and the only means by which such labor can be made to pay, saving

every thing that will enrich and invigorate the soil, is overlooked almost altogether," and he asks this important question: "If an improper and wasteful system of agriculture imposes an annual tax of eleven million dollars for the supply of food to impoverished land in only a portion of the Union, to what immensity will this sum grow when the entire country needs supplies commensurate with its extent of surface?" Let the farmer ponder upon this question and resolve, and by practice prove the sincerity of his resolves, that, as far as his labors will go, this necessity shall not come. That the spot of land on which he operates shall not become poorer, but that by care in collecting fertilizers, by skill and knowledge in applying them, his farm shall be more and more productive as long as he shall till it.

### FARM WORK.

It is a matter of great importance to the farmer, that he should lay out the work of the season before hand, and now is the time to do it. We need much more thorough system in our farming operations. Determine upon the fields you will cultivate, and what shall be allotted to oats, corn, rye, wheat, buckwheat, potatoes, and other root crops; what walls shall be reset, and what ditches shall be dug; and how much labour will be needed to accomplish the work. Leave nothing to be decided upon in haste. A great deal of time and mental labour will be saved, by making your plans deliberately at the beginning of the year. If there are doubtful matters, consult the best farmer in your neighbourhood, and give his opinion due weight in your decision. A neighbour's experience will often save a useless expenditure of money and labour. When your plans are laid, carry them out, month by month, and week by week, until the year is completed. If you need capital for your legitimate business, hire it. You can as well afford to pay interest for this purpose as well as any other business man. Turn not aside to speculation in any thing that you do not understand. Glory in the farm and live by it.

**TO SWEETEN RANCID BUTTER.**—An agriculturist, near Brussels, in Europe, having succeeded in removing the bad smell and disagreeable taste of some butter by beating or mixing it with chloride of lime, he was encouraged by this happy result to continue his experiments by trying them upon butter so rancid as to be past use; and he has restored to butter, the odor and taste which was insupportable to all, the sweetness of fresh butter. This operation is extremely simple and practicable for ail. It consists in heating the butter in a sufficient quantity of water, into which had been mixed 25 or 30 drops of chloride of lime to two pounds of butter. After having brought all its parts in contact with the water, it may be left for an hour or two; afterwards withdrawn and washed anew in fresh water. The chloride of lime used, having nothing injurious in it, can safely be increased; but after having verified the experiment, it was found that 25 or 30 drops to two and a half pounds of butter, were sufficient.

**CEMENT TO MEND EARTHEN AND GLASS WARE.**—The cement sold about the country as a great secret, is nothing more than shellac, melted and drawn out into sticks. Heat the article a little above boiling water heat, and apply a thin coating on both surfaces of the broken vessel, and when cold it will be as strong as it was originally.

**TO PROTECT HENS FROM VERMIN.**—It is said that *pennyroyal*, woven into their nests, will perfectly and certainly protect hens from the annoyance of vermin. Some poultry raisers make the nests entirely of this strong-scented herb.

**ASPARAGUS BEDS.**—A good depth of soil is necessary—say from 2½ to 3 feet—well enriched with rotten farm yard manure. Thorough and effectual drainage should also be provided. Early in every spring apply a dressing of salt, to the extent of one or two pounds to each square yard. An additional dressing of rotten stable manure should also sometimes be given. Asparagus is a marine plant; hence an occasional application of salt should by no means be omitted.

**ENRICH THE SOIL.**—It should be the object of every tiller of the soil to leave his land in good condition after the removal of a crop, and, at the same time, obtain as remunerating returns as possible. This can be done only by husbanding all the sources of fertility upon the farm and adding thereto in every available manner. This is the Alpha and Omega of progressive agriculture.

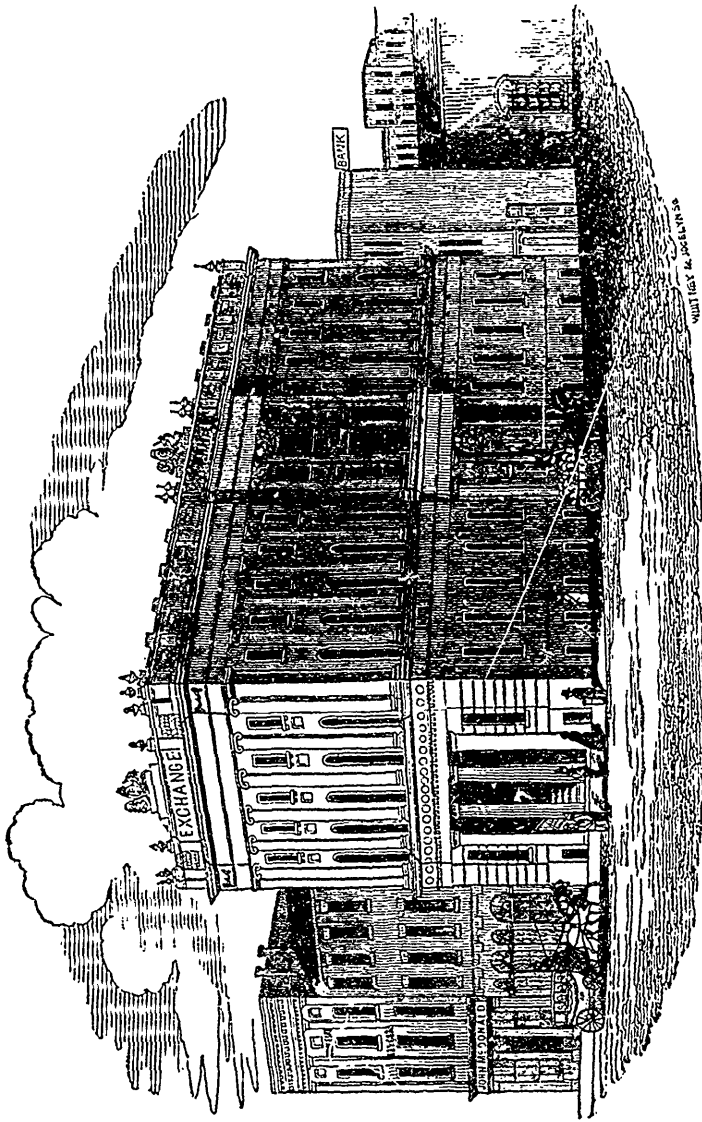
## DEATH OF WM. EVANS, ESQ.

It is our painful duty to record the death of this esteemed individual, who was so long and favourably known as a zealous promoter of Agriculture in Lower Canada. Mr. Evans had been, we believe, connected with this important interest in Canada for upwards of forty years, during which he devoted himself with untiring energy to the advancement of the agriculture of his adopted country. His treatise upon Canadian Agriculture published many years ago, was a means of awakening a spirit for improvement, and of attracting attention to the undeveloped resources of the Province; while his pen did much for the same object through the periodical press. He has gone from among us full of years and good works. The following notice in the *Montreal Gazette* was evidently by one capable of appreciating the worth and character of the deceased:—

"We are deeply pained to announce to-day the death of W. Evans, Esq., the venerable Secretary of the Agricultural Society for Lower Canada. It has been our fortune to meet few worthier or more patriotic men than he, few more diligent in the promotion to the uttermost of his ability the prosperity of this his adopted country. Enthusiastically devoted to Agricultural pursuits, it has been his endeavour for many years past to raise the standard of Agriculture in Lower Canada from the position to which it had sunk, to teach and to lead the way in a system by which the worn out farms of the long settled districts might recover their fertility, and farming in the Eastern Province be made to rival in profitableness that of the West. Nor have his efforts been altogether in vain we hope. He has spent over twoscore years, we believe, as an Agriculturist in Canada. Long ago, he furnished agricultural contributions to the columns of this journal. Afterwards he became Secretary of the Lower Canada Agricultural Society and editor of the Agricultural journal published under the auspices of that Society. Lately having retired from the direction of that journal, he renewed his connection as a contributor with this paper,—a connection only now dissolved by death. Elsewhere will be found his last communication, addressed to us a few days since, and crowded out of our columns until now, when the brain that conceived and the fingers which wrote it have alike ceased to have life or motion. How touching are its concluding sentences now, in which, promising to resume the review of Mr Nesbitt's lecture, he says:—"I cannot now expect that I shall be spared many years to continue these labours, but while it may be the will of God to spare me, I shall persevere in the good cause of endeavouring to promote the improvement of agriculture in Canada." Alas! even as he wrote, his vow was fulfilled; the span of life allotted him by his Maker was even then coming to an end. We have not learned the immediate cause of his death, which must have been somewhat sudden, though he has been ailing for some time, and suffering much. We are aware that during the early part of the autumn he suffered from an attack of paralysis, which he spoke of to us as a warning that 'he had not long to stay.' He was fitted and prepared, we believe, for the long, long journey he has taken. Full of years, enjoying the esteem of all who knew him, and surrounded by a large circle of tried friends, he has passed peacefully away: a man whom many loved while living, many will regret in his death; one who strove faithfully to do his duty in that state of life to which it had pleased God to call him."

**SIMPLE CURE FOR CROUP.**—When a child is taken with croup, and a physician cannot immediately be had, let the mother instantly apply cold water, (ice water if possible,) suddenly and freely to the chest and neck with a sponge. The breathing will almost immediately be relieved. So soon as possible, let the sufferer drink as much as it can; then wipe it dry, cover it up warm, and soon a quiet slumber will relieve the parent's anxiety, and lead the heart in thankfulness to the Power which has given to the pure gushing fountain such medicinal qualities.

**SMOKING HAMS.**—To do this, the smoke house must be well ventilated at the top, the hams hung at least ten feet above the fire, and the smoke given out in moderate quantity, and issuing from the burning of corn cobs, or hickory wood. It is important that the hams be kept cool and dry through the whole operation. Proper ventilation of the smoke house insures this; if they be kept moist by improper ventilation, or are placed so near the fire as to become warm, it greatly injures their flavor.



THE TORONTO EXCHANGE.

We present our readers with a view of the Toronto "Exchange," erected in 1855, by the Merchants, Millers, and Brokers of the city and surrounding country, for the convenience of barter and exchange, in wheat, flour, stocks, &c. It is a plain, but neat and substantial structure, and is situated on the corner of Wellington and Berczy Streets, on the site of the old Post Office. It cost, for building and site, £15,724, and is well worth the notice of Merchants, Millers and Farmers, when visiting Toronto. It contains the Telegraph Offices, News Room, Board of Trade Rooms, Brokers' Offices, Exchange Room, &c., and is therefore the head-quarters of trade, especially in those products which come from the soil.



## TWINS—FREE MARTINS—ENQUIRY.

*To the Editor of the Canadian Agriculturist.*

Toronto, 17th February, 1857.

DEAR SIR,—A brood mare of mine had twins last Spring, a Colt and a Filly; and the question has lately been discussed amongst my friends, whether either of them will ever be of any service for breeding purposes? Some people maintain that the Filly will never breed; others, again, say that *neither* of them will be of any use for that purpose. In Mr. Stephen's Book of the Farm, I find the following observation in respect to twin calves; but whether the same rule applies to twin colts, I am not aware. Mr. Stephen says—"A heifer calf of twins of bull and heifer calves is a *free martin*, and never produces young, but exhibits no marks of a hybrid or mule."

Now, Sir, will you be so good as to give me your views on this interesting subject? As these colts are remarkably fine, and it being my present intention to raise the Colt as he is, in consequence of his showing so many excellent points every day, I feel more interested in the solution of this question than perhaps I otherwise would.

I am, dear Sir, &c.,

S. B. S.

REMARKS.—We mentioned the subject of the above enquiry at a recent meeting of the Central Agricultural and Horticultural Club, and asked the opinion of the members on the point. There were several gentlemen experienced in breeding, &c., present, but no case of barrenness, from the cause mentioned, could be cited as to horses. In the case of cattle, opinion was divided. Instances were mentioned where twins, male and female, had both proved prolific. But *generally*, the statement of Mr. Stephens was confirmed. We cannot speak from our own knowledge, except in the case of the genus *homo*, where, so far as our experience goes, there appears to be no impediment. Perhaps some of our correspondents may be able to answer the enquiry of S. B. S. from their own observation.

HOT WATER FOR HOUSE PLANTS.—A correspondent of the *Boston Cultivator*, writing of the management of house plants says:

The way to have healthy plants is to shorten in all straggling growth, and remove every leaf and flower as soon as the least symptom of decay is perceivable, washing them occasionally with warm water from the fine nose of a watering pot held high above them, thus giving them the benefit of a warm shower at any time or place.

But the thing of all others important, is to water them with warm water at all times; yes, hot to the touch, even beyond what is supposed to be prudent—and it is only necessary to watch the result on the health and vigor of the plants, especially when in bloom, to be convinced of this "grand specific."

The writer says he has fuchias now in bloom, mere cuttings about six inches in height, not one failing out of seven, or even more cuttings, planted in a single pot and watered with hot water.

RECIPE FOR MENDING BROKEN CHINA.—Take a very thick solution of gum arabic in water, and stir into it plaster of Paris until the mixture becomes a viscous paste. Apply it with a brush to the fractured edges, and stick them together. In three days the article cannot again be broken in the same place. The whiteness of the cement renders it doubly valuable.

## TILES—DRAINING—PRICES, &amp;c.

*To the Editor of the Agriculturist.*

February, 17th, 1857.

SIR,—Would you be kind enough to inform me in one of your coming numbers, at what price Draining Tile can be furnished at the Kiln? what sizes are suitable for underdraining land? the number used for laying a rod; and what the total cost of underdraining in this manner should be? also, whose machines are the best for making them?

Many farmers in this neighbourhood would use tile extensively, if they could be got at a reasonable rate; and it has been proposed to try and establish a manufactory of them somewhere along the line of the Northern Railway. Any respectable man, who could be depended on, could get orders for a large quantity to be ready for draining wheat lands this summer; and in connection with brick-making it would doubtless pay. I have drained a considerable number of acres last summer, using cedar rails and slabs, cutting the drain three feet deep, but would much rather use tile; and make a more permanent job of it.—Yours truly, "EAST GWILLIMBURY."

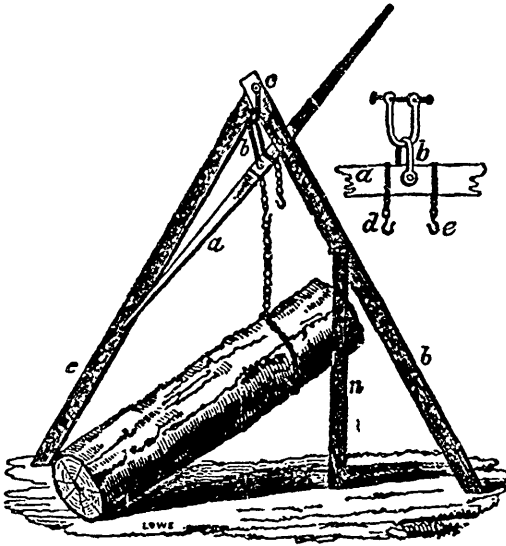
*Remarks.*—We refer our correspondent to the advertisement of Mr. William Lea, of the "Strawberry Hill Works," which appears in the present issue. Mr. Lea has reduced the prices of Tile nearly 20 per cent. since last season. His two-inch pipe tile, suitable for field draining, are furnished as low as at most of the establishments in the adjoining State, where the demand is much larger than it is, or will be for some time, in Canada. We have endeavoured to impress on Mr. Lea the importance of reducing his prices to the lowest paying point; we believe he has done so, and we hope the farmers will encourage him in his undertaking. One thousand (\$10 worth) will lay 60 rods of drain, and, if properly placed, will last an age. The cost of opening the ditch will depend upon the price of labour, the process adopted, skill of workmen, &c. We can give no rule that would hold generally. The best machine with which we are acquainted, is Scragg's; cost about £50.

## LABOR—AN ODE, BY G. W. B.

Toil swings the axe, and forests bow;  
The seeds break out in radiant bloom,  
Rich harvests smile behind the plough,  
And cities cluster round the loom;  
Where towering domes and tapering spires  
Adorn the vale and crown the hill,  
Stout Labor lights its beacon fires,  
And plumes with smoke the forge and mill.  
The monarch oak, the woodland's pride,  
Whose trunk is seamed with lightning scars,  
Toil launches on the restless tide,  
And there unrolls the flag of stars;

The engine with its lungs of flame,  
And ribs of brass and joints of steel,  
From Labor's plastic fingers came,  
With sobbing valve and whirling wheel.  
Tis Labor works the magic press,  
And turns the crank in hives of toil,  
And beckons angels down to bless  
Industrious hands on sea and soil.  
Here sunbrowned toil, with shining spade,  
Links lake to lake with silver ties,  
Strung thick with palaces of trade,  
And temples towering to the skies.

## HOISTING MACHINE.



The above is a cheap, but powerful machine, for raising logs or other heavy bodies a short distance. It will be found very convenient about a saw-mill for loading logs upon a waggon or truck. It consists, as the reader will see, of two pieces of strong scantling, connected together by a clevis. A short brace *n*, is attached to one of the legs, to keep the machine upright, while being made fast to the log. The power is obtained from the lever *a*, which power can be increased, either by increasing the length of the lever, or by shortening the distance between the short chains *d*, *e*, and the clevis, or fulcrum *b*. The mode of operating will be seen at a glance. By depressing one end of the lever, the short chain on that side will be brought down towards the weight to be lifted; it is then hooked into the chain attached to the weight, and by reversing the lever the weight is raised, and the opposite chain made slack; and so on until the object is attained.

## TESTIMONIAL TO ROBERT RUSSELL, ESQ., KILWHISS, FIFESHIRE.

We learn from the *Fife Herald*, that at a recent meeting of the Trafalgar Agricultural Society, of which Mr. Russell has for several years been the Secretary, a valuable piece of Plate was presented to that gentleman, as a token of gratitude for his efficient services.

Mr. Russell is favourably known on this side the Atlantic. Many of our readers will recollect him when we state that he attended our Provincial Show at London, in 1854; acted in the capacity of a Judge on Implements; and took part in the Agricultural discussion in the Court-House. Subsequently he spent several months in the United States, and delivered a course of lectures on Meteorology in the Smithsonian Institution. Mr. Russell combines with a correct knowledge of scientific, an enlarged acquaintance with the best systems of practical agriculture. Since his return to Scotland, he has contributed several very interesting and elaborate papers to the *Journal of the Highland Society*, embracing subjects of much scientific and practical interest; some of them touching on matters pertaining to this Continent.

The Chaitman, on presenting the testimonial, concluded in these words—

“We are proud of Mr. Russell as our Secretary. He is known to you all, and known to the whole agricultural world. We have lost one eminent agriculturist, and it becomes us therefore to value all the more highly those men who yet shine out amongst us. Mr. Russell, though a young man, has a world-wide fame. He is known to the leading men

of science, on both sides of the Atlantic. I will not attempt to say more. He does honor to us, and we do honour to ourselves in recognising his services."

The plate, which consisted of a silver salver and jug of rich and elaborate manufacture was displayed upon the table. The salver bore the following inscription—"Presented to Robert Russell, Esq., farmer, Kilwhiss, by the members of the Trafalgar Agricultural Society, in testimony of their unanimous and grateful sense of the zeal, scientific knowledge, practical sagacity, and uniform courtesy, with which, as their Secretary, he has for a long period so successfully connected the business of the Society and led its discussions, extending its efficiency as an instrument for the advancement of science. Trafalgar, 21st October, 1856."

Mr. Russell, after returning the customary thanks, &c., remarked—

"By acting in the capacity of Secretary to this Society, I have enjoyed a closer friendship with many of its members than I perhaps otherwise would have done, and I have thus reaped much benefit in coming in contact with those who know their profession so well, and who are ever ready to communicate; and, indeed, there is not a more interesting agricultural district in Scotland for variety of soil than the one which embraces the farms which you occupy. In studying the principles of agriculture, I have tried to gather up your maxims that are founded on long experience, to learn their meaning, and to translate them into the technical language of science. Agriculture has already derived great benefit from a knowledge of principles, which is the only means that can lead us to true economy in the art; for more empirical dicta sometimes confound cause and effect, and they are also apt to mislead when conditions are changed."

#### CEMENT WATER PIPES.

Excellent and cheap pipes for conveying water, may be easily and cheaply made of Hydraulic Cement mixed in the same manner as when used for making cisterns. Any one can make these pipes. We have frequently directed their construction successfully, and presume we can direct our readers.

Having a ditch wide enough for a man to walk in, and deep enough to be secure from frost, leaving the bottom with a concave excavation in the centre according to the size of the pipe required, put mortar in the concave sufficient in quantity and quality to make the bottom of the pipe from three-quarters to one inch thick, and three feet in length. In this mortar bed a rod, made smooth and true, with a slight taper, about three feet long, when more mortar may be put on this rod, rounded up with a trowel, to correspond in thickness with the bottom; then carefully draw out the rod, spread more mortar for three feet more in the bottom of the groove as before, insert the end of the rod in the pipe previously made, bed the rod in the mortar, cover over and draw out again, and so on till the pipe is completed.

The mortar should be fresh mixed, a little at a time, so that the cement may set as quick as possible: mix one part of cement to two or three of *clean coarse sand*. If it contains some fine gravel, from the size of wheat kernels to beans, no matter. The thickness of the pipe should correspond to the amount of pressure it will be required to contain. If only two feet pressure is required, water may be admitted in two weeks; in three or four months, a pipe one inch and a half in diameter will bear a passage equal to twelve or thirteen feet perpendicular. This pipe will grow stronger for a year, when it will be like a rock in solidity and strength.

These pipes are admirably adapted for carrying water from eave-trough spouts to cisterns, and for carrying water in any other situations where no very great amount of pressure is required immediately after they are made. Very frequently in placing hydraulic rams, a short lead pipe next the ram will overcome the greatest elevation, reaching a short distance to the top of a bank, after which for a long distance, the pipe is nearly horizontal, and has much pressure to resist, when it may as well be made in this cheap manner of cement. And for purposes of irrigation, when it is desired to convey water nearly in a horizontal direction, as from one reservoir or elevation to another, and where no very great amount of pressure will be required, the cement pipe is admirably adapted.—*Country Gentleman*.

## USES OF SNOW.

We are indebted to the *New England Farmer*, one of our most valued exchanges, for the following remarks on the uses of snow—a subject of interest to Canadian readers, for they are usually well supplied with the article:—

In this community, where the people are trained to believe that there is a wise purpose to be accomplished by all the phenomena of nature—the religious as well as the philosophical mind is curious to search out the advantages to be derived from them. The beneficent influence of rain, by giving moisture to the earth and purifying the atmosphere, is apparent to all. But the uses of snow are less obvious, though it truly is one of the greatest blessings of Providence. Our readers will recollect the unprecedented quantities of snow that fell during the last winter; let us carefully note some of the phenomena that attended it. Through this uniform mass of snow, which fell simultaneously over the whole North American continent above the latitude of 36°, the heat of the earth's surface could not escape, being confined as by a thick blanket. Hence a nearly uniform degree of cold suddenly pervaded all this large extent of territory, because the atmosphere was no longer warmed by the radiation of heat from the earth's surface. The principal sources of heat were from the region south of the snow-clad territory, and from the ocean; but the currents from the north, containing a dense and heavier atmosphere, were sufficient to overpower any current that might pass against them from any other direction. Hence snow-storm followed upon snow-storm, until the winds from the ocean were reduced to nearly the same temperature with the overland atmosphere, and were exhausted of their superfluous moisture. By this time such a mass of snow covered the whole continent, as to make it evident that the power of the sun's rays in the spring must be present, before it could be melted away.

The first apparent consequence of this body of snow was the uniform cold temperature of the weather that prevailed. There were no sudden changes, as usual, from thawing, mildness to extreme cold. One unchangeable temperature but a few degrees above zero prevailed throughout the winter. The wisdom of physicians and the common sense of mankind agree in considering this uniformity of temperature as highly favourable to health. Colds, fevers and consumptions are always the most prevalent in a changeable climate, and during a changeable season. Hence it has been lately thought by some physicians that consumptive patients would do better to spend their winters in Canada than in Georgia. Last winter, was healthy, because the weather, though severely cold, was even; and this evenness was the effect of the universal covering of snow. The heat that would have ascended from the earth was shut in; and the rays of the sun could not produce an extraordinary amount of heat, because they acted only upon a bright reflecting surface. Thus it is evident that a general covering of snow is favorable to health by promoting an evenness of temperature.

Let us look still deeper for other advantages. Let us consider whether its action is favorable or unfavourable to vegetation, during the following seedtime and harvest. It is evident that the surface of the earth cannot well be robbed of so much heat as escapes from it in open winters. This should be made clear by a process of reasoning on chemical principles, as we will soon attempt to prove in the language of Count Rumford, who took a great deal of pains to investigate this subject. It was declared by workmen who were employed in excavating underneath the snow, that the earth which is usually penetrated by frost to the depth of 10 or 12 inches, was last winter observed only by a mere incrustation. Indeed, we observed this more than once ourselves.

"The snows," says Count Rumford, "which cover the surface of the earth in winter in high latitudes, are doubtless designed by an all provident Creator, as a garment to defend it against the piercing winds from the polar regions which prevail during the cold season.

"The winds, notwithstanding the vast tracts of continent over which they blow, retain their sharpness, as long as the ground they pass over is covered with snow; and it is not till meeting with the ocean, that they acquire, from a contact with its waters, the heat which the snows prevent their acquiring from the earth, the edge of their coldness is taken off, and they gradually die away and are lost.

"The winds are always found to be much colder when the ground is covered with snow than when it is bare, and this extraordinary coldness is by many supposed to be commu-

nicated to the air by snow; but this is an erroneous opinion: for these winds are in general much colder than the snow itself. They retain their coldness, because the snow prevents them from being warmed at the expense of the earth; and this is a striking proof of the use of snows, in preserving the heat of the earth during the winter in cold latitudes.

"It is remarkable that these winds seldom blow from the poles directly towards the equator, but from the land towards the sea. Upon the eastern coast of North America, the cold winds come from the north-west; but upon the western coast of Europe, they blow from the north-east.

"That they should blow towards those parts where they can most easily acquire that heat they are in search of, (in the efforts of nature to produce an atmospheric equilibrium) is not extraordinary; and that they should gradually cease to die away upon being warmed by contact with the waters of the ocean, is likewise agreeable to the nature and causes of their motion; and if I might be allowed a conjecture, respecting the principal use of the seas, or the reason why the proportion of water upon the surface of our globe is so great compared to that of the land, it is to maintain a more equal temperature in the different climates, by heating or cooling the winds, which at certain periods blow from the great continents."—*Essays*.

As an illustration of the truth of this remark by the learned and observing Count, the farmer, all through New England, might point to his young fruit trees, most of them leaning to the east, by the prevailing and strong north-west winds, which give them that tendency before their roots have taken sufficient hold to keep them in an upright position. Some careful persons place props on the easterly side of choice trees to prevent their getting out of the perpendicular. It ought to be some compensation to the orchardist who sees his trees a little out of shape, to remember that the winds are on errands of love, and will faithfully perform their mission, though they may touch him a little rudely as they pass.

There are many species of plants that vegetate under the snow, in high northern latitudes. Among these may be found the land moss. "This moss," says Dr. Darwin, "vegetates beneath the snow, where the degree of heat is always about 40°: that is in the middle between the freezing point and the summer heat of the earth: and is for many months the sole food of the reindeer, who dig furrows in the snow to find it, and as the milk and flesh of this animal are almost the only sustenance which can be procured during the long winters of the higher latitudes, this moss may be said to support some millions of mankind."

But in our own latitude, when the snow fall so early as to cover the earth before it has become frozen, all the perennial plants slowly vegetate under the snow; their roots send some new rootlets into the earth, and are thus prepared to vegetate with extraordinary quickness, on the arrival of spring. The rapidity of vegetation that occurs on the melting of the snows in the arctic regions is undoubtedly attributable to this cause; and not to the severer cold to which they have been exposed. The plants during winter, while covered with a deep bed of snow, are constantly increasing in vitality; but when exposed as in open winters in our own latitude, to alternate freezing and thawing, the plants become exhausted of their vitality, and when spring opens, they vegetate slowly, because they cannot all at once recover from the injuries they have received from alternate heat and cold.

This explains why our winter grains—such as wheat and rye—usually flourish so well after a winter when the ground has been constantly covered with snow; for as we have already observed, the plants have been all the time increasing in vitality, and when exposed in the spring, are green, vigorous, and start at once into a rapid growth. Some critical observers have also thought that young fruit trees, during such a winter, continue more plump, and are in better condition in the spring. It is certain that the sharp winter winds rob some plants of their moisture, and that slightly covering half-hardy shrubs, and such fruit plants, as the raspberry and blackberry, with leaves or earth, has the same effect as a covering of snow.

It is not unusual in our climate for quails and partridges to be buried in the snow, sometimes during several days; in this way they are preserved from the severity of the storm while it continues; after which they emerge into the light and air. Sometimes a thick incrustation of ice upon the surface prevents their escape and causes them to perish. These are a few of the uses and influences of Snow—but the subject is worthy of further and careful consideration.

## MR. SOTHAM, AND HIS CRITICISMS.

*To the Editor of the Canadian Agriculturist.*

Whitby, 17th Feb. 1857.

DEAR SIR,—On perusing Mr. Sotham's letter which appeared in the Feb. No. it struck me forcibly that—Canadian agriculturists in general, and the Messrs. Miller in particular, may justly congratulate themselves, and feel proud that there are in Canada "Short Horn" cattle worthy of the commendation and praise bestowed on them by a judge and breeder so distinguished and infallible as Mr. Sotham, Oswego, Tioga Co., New York. One whose former opinions as expressed in the *Agriculturist* were wholly antagonistic to that breed. Surely all sensible people will agree that it is incumbent on the Directors of the Board of Agriculture to make every possible endeavor to induce Mr. Sotham to come over to Canada, and kindly instruct "novice judges," breeders, and editors in the mysteries of the art, so that wisdom may not die with him. As to his remarks on Mr. Miller's bull with the "Leathery Skin," he may have forgot, at the time, that the powerful rays of a summer sun serve as an excellent substitute for the ordinary tanning process. And although Mr. S. seems doubtful if Mr. M. has judgment to select a proper male for his fine female stock; so that his progeny would enable him to rank as a first class breeder, still, he may have learned by experience that males, when tampered, often prove impotent—thence the trough of "Leathery Skin" may not have received the same attention as some of the others. Should Mr. S. be prevailed upon to come over, by an urgent appeal to his philanthropy, backed by something more tangible, he will confer an everlasting benefit upon us—and I will frankly give up my favorite oxen "Buck and Bright" to the pinching inspection of his pupils, so that by practice they may become perfect, even as he is. The press would derive great advantage, as the style of his written articles—so modest, so courteous, so free from the very semblance of egotism, would serve for a model to "Novice Editors."

I am, Sir, your obedient servant,

JOHN DOW.

A "Novice Judge and Breeder," but not an Editor, nor a "puffed man."

EFFECTS OF DRAINING.—All the rain that falls upon our fields must be carried away either by natural or artificial drainage, or, having thoroughly saturated the soil on which it falls, be left upon the surface to be carried up by evaporation. Now, every gallon of water thus carried off by evaporation, requires as much heat as would raise five and a half gallons from the freezing to the boiling point! Without going to extreme cases, the great effects of the heat thus lost upon vegetation cannot fail to be striking, and I have frequently found the soil of a field well drained, higher in temperature from 10° to 15° than that of another field which had not been drained, though in every other respect the soils were similar. I have observed the effects of this on the growing crops, and I have seen not only a much inferior crop on the undrained field, but that crop harvested fully three weeks after the other; and owing to this circumstance, and the settling in of unsettled weather, I have seen that crop deteriorated fully ten per cent. in value.—*Journal of Royal Ag. Society.*

CHARLES LAMB'S OPINION OF WATER CURE.—"It is is neither new nor wonderful, for it is as old as the deluge, when in my opinion it killed more than it cured." Yes: but it saved all that were worth saving: that is our opinion.

## FRUIT RAISING IN LAMBTON—INFORMATION WANTED.

Bosanquet, Feb. 26th, 1857.

Sir,—I frequently hear questions asked in this part of the country about fruit raising. Now, Sir, I shall take the liberty of repeating them to you. In the first place,—this part of the country is quite new; there are a great many fruit trees planted out here, but they appear not to thrive well. A great many died in 1855 and 1856. I have seen the leaves of Cherry Trees totally killed with frost in the month of June, and the trees completely ruined. Can fruit be raised here to advantage? and what kinds, and on what location, and when, and how planted? By casting your eye on the map you will at once see our situation. I live ten miles from Lake Huron.

Yours, &amp;c.,

C. H. CASE.

REMARKS.—As we have but little personal experience of the climatic and other influences of that part of Canada to which our correspondent refers, we are unable to offer more than a *conjecture* as to the cause of the difficulty he mentions. We see no reason why fruit trees should not thrive even better in the western part of the province than in this neighborhood. We are inclined to think that the trees were *bad* to begin with, purchased perhaps from a Yankee pedlar sent into Canada to get rid of the refuse of some American Nursery. Such trees never do well any where. Or if purchased from a Canadian Nursery, they may have been tender sorts, not adapted for exposed situations. Mr. Case should have stated the *name* of the sorts that failed, where grown, &c. Mr. Dougall, of Amherstburg, must be well acquainted with the peculiarities of fruit culture in the western section of the Peninsula—perhaps he will enlighten us on the subject?

## THE NEW SUGAR PLANT.

While we would caution our farmers against believing all the stories told about new plants, especially by those who have seed to sell at a high price, we recommend a trial, and a fair trial, before passing sentence of condemnation. The following remarks upon the Chinese Sugar Cane are from an American journal of high standing. They deserve attention:—

The cultivation of the *Sorghum*, or Chinese sugar-plant, has thus far proved so decidedly successful in this country, not only in the South, where it seems to have been demonstrated that two crops or cuttings of sugar-bearing stalks can be obtained in one season from the same roots of that year's planting, but even so far north as Minnesota, where it is testified that good syrup was made in 1856 from stalks hardly a hundred days from the seed, that we are impelled to urge upon our farmers and gardeners the importance of early attention to the procuring of seed and planting for the season just before. Let us all grow the seed this year, so that it can never more be so scarce that speculators may run it up to an enormous price. A great deal remains to be settled with regard to this plant, especially the best mode of converting its saccharine properties into crystallized Sugar; and it is highly probable that better varieties of it will ultimately be discovered, at least for certain localities, than that now current in this country. For the present, however, it is advisable to continue and extend the cultivation of that which is accessible, and thus test the effect of acclimation on the character of the plant, and the sweetness of its juices. We suspect that for Louisiana, Florida, and Texas, the *Sorghum* of Southern Africa will ultimately be found preferable to that obtained from France by our Patent Office, and from China by France. If it prove true that this plant,



or certain varieties of it, can be grown in semi-tropical latitudes from the same root, as the cane is grown in the West Indies, and that two or more crops of sugar-yielding stalks may be cut from that root each season, then there can be little doubt that our Southern States are destined still to lead the North in the production of Sugar. For the present, however, it suffices that the Sorghum may be grown wherever Indian Corn will usually ripen—that its abundant juice makes a very pleasant syrup or molasses, to which it is easily reduced by boiling away four-fifths of it in the ordinary mode of sugar-making from the sap of the maple—and that the leaves and stalks, whether green or dry, of the Sorghum make an admirable fodder for cattle, horses, or hogs, while the seeds are eaten with avidity by fowls also, to justify the general interest evinced in its cultivation. We propose, therefore, to condense into the smallest space some practical directions to the prospective cultivator—as follows:—

1. *Seed*.—If there be a seed-store within your reach, your easiest way is to send and buy what seed you want. In planting to raise seed (the first year's object), a pound will suffice for an acre; and this ought not to cost more than a dollar. But beware of impostors and swindlers, for bushels of broom-corn and kindred seeds will be palmed off as that of the Sorghum. Where you cannot readily obtain seed in this way, write to your Member of Congress, asking him to send you a paper, and he will generally be able to do so. If not, the Secretary of your State Agricultural Society may be able to supply you.

2. *Planting*.—Choose a warm, mellow soil, such as you would confidently expect to grow at least fifty bushels of Indian Corn to the acre. Plough early, plough deep and thoroughly. Plant as early as you could venture to plant corn. If you have a hot-bed, start a little seed in one corner of it. If you plant considerably, put in your seed at different times—say, in this latitude, one quarter each on the 1st, 10th, and 20th of May and 1st of June respectively. Plant (for seed) in hills, six seeds to the hill, and at distances of four feet each way. Try some five feet apart east and west (so as to let in the sun between the rows), and some in drills—say four to five feet apart east and west, with the seeds six inches apart in the drill, and thin the plants to one foot apart. If you have seed in abundance, sow a little in drills two feet apart, the seeds in the drill but two or three inches apart. Cover lightly, as the seed rots if covered deeply. Keep the hens at a distance, or it will come up too soon.

3. *Tillage*.—The Sorghum comes up looking very puny—much like broom-corn or barn-grass. If you set a blockhead to weed it, he will probably pull it up and report that it never germinated. Cultivate like Indian Corn—only faithfully. If suckers start, a majority say pinch them or pull them off—that is, in growing for seed. This need not be done in growing for sugar.

4. *Harvesting*.—Whenever the seed shall be hard and black, cut off the upper part of the stalks, say three feet long, and hang them up like broom-corn, in a dry chamber, suspended from the ceiling, so as to be out of the way of rats, &c. Now cut up your stalks, pull off the leaves, and satisfy yourself that all manner of stock will eat them: cut up a few of the stalks as you would corn-stalks, and try a like experiment with them: and put the rest of the stalks through any kind of a crushing-mill that may be handy—a cider-mill would be better than nothing—catch the juice and instantly warm it over a slow fire in a large kettle, skimming off the scum so long as any shall rise. Then boil the juice about four-fifths away, as if it were maple sap. Use a little lime or lime-water to neutralize the phosphoric acid, which otherwise will give a slightly acid but not unpleasant taste to the syrup. Save some syrup *without* thus neutralizing the acid, as you may like it better that way. Don't waste the scum, but throw it to the pigs, where it will make at least excellent manure. Feed the pumice or crushed stalks to your cattle and, having thus cleared the ground, be ready to plant or sow extensively next Spring.

5. *Fodder*.—We estimate that, whenever seed shall be sufficiently abundant, any rich, warm land will produce a third more fodder per acre if sown with Sorghum than if sown with Indian Corn, and that the Sorghum is at least twenty-five per cent more nutritious than the corn. But all that can be effected this year is to grow a good supply of seed, and prove that this plant is valuable both for Syrup and Fodder. Next year will be soon enough for most cultivators to think of sowing for fodder or grinding for sugar.

One word of caution to experimenters: Don't run the thing into the ground. The Sorghum will prove a valuable addition to our crops, if we don't render it odious by some Multicaulis foolery. But wheat, Indian corn, and clover are not going out of fashion for some years yet.

## BLOOD AND BOG SPAVIN.

The above diseases are of common occurrence in this country, and considerable speculation is afloat regarding the nature and treatment of the same. Many valuable horses have to submit to very harsh treatment, without any benefit; and in view of giving the reader a correct idea of the nature of these enlargements, we introduce the following article from "Elementary Lectures on Veterinary Science," by Surgeon Percivall:—

"In the human subject, the veins of the legs now and then become varicose, by which is meant, dilatation of their coats in consequence of preternatural distention. Under these circumstances, the valves in them perform but imperfectly their offices; the veins themselves becoming tortuous, bulge, and occasionally burst in various places, forming small tumors, or bloody ulcers, in the skin, which from the appearance of blood through them are of a purple color.

"Such have many Veterinary writers\* conceived to be the nature of bloody-spavin—a disease that has no existence but in the pages of their works.

"The horse, as far as our observations have gone, is not troubled with varix; and we much doubt that the veins of this animal have become spontaneously varicose, though we have none whatever, that something like varix may have been produced in them by the remedies commonly recommended for the removal of a blood-spavin. We allude here to the use of ligature—a practice long exploded by the scientific Veterinarian.

"If you examine a horse said to have blood-spavin, (for it is by no means a very common occurrence,) you will perceive a soft fluctuating tumor upon the inner and forepart of the hock, in the course of the principal vein, which is at that part superficially placed. At first view of it you are convinced, from the unnatural prominence of the part, that there must be disease—and so there undoubtedly is—though it is not of that kind which its name so emphatically expresses.

"Dissection has fully developed its nature. There is placed here a little membranous bag, called a bursa mucosa, which contains, in a natural state, a certain quantity of synovial fluid; from a too copious secretion of which, it happens, now and then, that this sack becomes distended, preternaturally enlarged, and in this condition constitutes a disease, called bog-spavin.

"The vein, passing immediately over this bag, compressed and diminished in calibre by enlargement of it, cannot transmit blood, at this part, with the usual facility of quickness; the consequence is, that a preternatural distension of it happens immediately below the tumid bursa, thence extending as low down as the first valve; and this has been taken for a varix, or some such thing, and denominated a blood-spavin.

"A blood-spavin, then, is purely a distension† of that vein which passes superficially over the inner and forepart of the hock-joint: solely produced by, and consequently co-existent with a bog-spavin.

"Be the cause of such obstruction, however, what it may, the same thing will happen; hence, if we tie this, or any other vein, we shall produce instantly, in truth, a blood-spavin, and probably, by allowing the ligature to continue, in process of time a varix."

**TO STOP BLEEDING FROM THE CAVITY OF AN EXTRACTED TOOTH.**—Noticing the case of Mrs. Locke, who bled to death in consequence of the extraction of a tooth, Dr. Addington of Richmond, Va., says he never fails to stop the bleeding by packing the alveolus from which the blood continued to trickle, fully and firmly with cotton moistened in a strong solution of alum and water. He cured a brother physician in this way, whose jaw had bled for two weeks.

The Boston Medical Journal mentions the following simple and economical apparatus for overcoming bad odours, and purifying any apartment where the air is loaded with noxious materials. Take one of any of the various kinds of glass lamps—for burning camphene, for example—and fill it with chloric ether, and light the wick. In a few minutes the object will be accomplished. In dissecting rooms, in the damp, deep vaults where drains allow the escape of offensive gases, in outbuildings, and in short in any spot where it is desirable to purify the atmosphere, burn one of these lamps. One tube charged with a wick is sufficient.

\* Bracken was the first who detected the fallacy of such an opinion.

† We would call a varix a dilatation.

## CONTRACTION OF THE HOOF.

A Correspondent informs us that he has a valuable mare, the subject of *contracted feet*, and desires to know if faulty shoeing is not the cause of the same.

Altered structure, corns, and various other affections of horse's feet, are often attributed to the above cause, and no doubt a rational, and improved method of preparing the foot, and adjusting a suitable shoe for the same, may lessen the liability to some such diseases, yet we contend there are other causes than the above, over which the blacksmith has little if any control. We allude to that universal law, termed the hereditary predisposition; which provides that "like shall produce like." We know that the "Black Hawk," "Messenger," and many other permanent varieties of breeds, transmit to their offspring a peculiarity of form, temperament, quality and color, by which the lineage of the latter can with certainty be determined. And should the parent labor under any *permanent* disease, defect or vice, the same is very apt to be, directly, or indirectly, transmitted. The very color of the hair, accompanied by particular and distinctive marking, often extend and re-appear through several generations. Hence, a colt begotten by a sire defective in so important a part of the animal economy as the feet, ("no foot no horse,") must necessarily, in accordance with *nature's* immutable law, inherit the same *idiosyncrasy*. Therefore, the very best system of shoeing practised on *nature's* criminals, would fail, when attempting to reverse *her* decrees.

A horse, inheriting the least predisposition to faulty feet, is at all times liable, when used for draught, or speed, or pavid thoroughfares, to disease of the same, which may end in *contraction*, it being, in nine cases out of ten, the result of primary disease of the foot.

A defect in the conformation of a horse's foot, may be so slight as to escape *ordinary* observation, yet the defect is there, liable to augmentation, and sooner or later the evil is discovered.

That a tendency to contraction of horse's feet does lurk in some breeds, we have abundant authoritative proof to offer, if necessary; consequently, faulty shoeing cannot be classed as the direct cause of contraction.

A point-blank argument in favor of the blacksmith in this view, is founded on the fact that contraction of the hind feet, which undergo the same system of shoeing, seldom, if ever, become the seat of this deformity. Among our truck horses, may be found many of the Pennsylvania, New York and Vermont breeds, that have to endure all the evils of shoeing, as well as of domestication; yet a great proportion of them enjoy immunity from *contracted feet*. Therefore, the latter are not predisposed; they have good open heels, the foot is well proportioned in all its parts, and bears a symmetrical relationship in size, form and action, to the limb and body, which it aids to support and move.

Hence contraction, as well as many other forms of disease which are observed in the feet of the horse, have their origin in hereditary predisposition; therefore, it is a matter of impossibility for a smith to make a good foot out of one that was originally defective.

## CLEANLINESS.

There is a proverb in the Levant, that "no prince ever died of the plague," which means that the many resources which opulence affords are preventives against contagion. Accordingly we find that in those Mahometan countries, where the plague rages with the greatest violence, but few of those who enjoy the first of the State are ever attacked with the distemper, although according to the precepts of Mahomet, they are obliged to appear in public at all times, and must comply with general custom in giving their hands to be kissed indiscriminately by every Moor who comes to beg justice, or throw himself under their protection.

At a time when the plague at Algiers destroyed many thousands of the populace, who easily caught the infection from their negligence respecting their persons, but *two* out of *three hundred* officers, belonging to the Dey's household, were attacked with this mortal sickness.

Nor is cleanliness beneficial only in contagious disorders. Filth engenders corruption, taints the atmosphere, and predisposes the system to disease. And when an epidemic prevails, those persons who are particularly cleanly in their habits, are less likely to become victims to indisposition, than those who pursue an opposite course.

The importance of well ventilated rooms, cannot be too strongly urged upon the attendance of the sick. A free circulation of air is not only beneficial to persons labouring

under severe attacks of illness, but the preservation of those who linger by the bedside of a diseased friend. It is said by medical men that there is no kind of *malaria* more pernicious and fatal in its effects, than the *poisonous atmosphere of an unventilated chamber where a person is suffering from a violent attack of an acute disease*. Here lies the mystery of the contagiousness of epidemics.

A celebrated English physician, (Dr. Smith on Fever,) says that "the room of a fever patient, in a small and heated apartment, in a populous city, with no circulation of fresh air, is perfectly analogous to a stagnant pool in Ethiopia, full of the bodies of dead locusts. Nature with her burning sun, her stilled and pent up wind, her stagnant and teeming marsh, manufactures plague on a large and fearful scale; poverty in her hut, covered with rags, surrounded with filth, striving with all her might to keep out the pure air, and to increase the heat, imitates nature but too successfully! the process and the product are the same—the only difference is the magnitude of the result. Penury and ignorance can thus, at any time and in any place, create a mortal plague."

### RULES FOR RESTORING THE DROWNED.

BY MARSHALL HALL, M. D. F. R. S.

The following rules are the result of half a year's investigation of apnoea and asphyxia—a subject which I prosecute still further, knowing that truth only comes of long continued labor and research. I wish especially to put to the test of careful experiment, the correctness of the dogma, that if the heart has once ceased to beat, its action can never be restored—a dogma calculated to paralyze our efforts in many cases in which hope may really not be *totally* extinct:—

1. Treat the patient instantly on the spot, in the open air, except in severe weather, freely exposing the face, neck and chest, to the breeze.
2. Send with all speed for medical aid, and for articles of clothing, blankets, &c.
3. Place the patient gently on the face, with one arm under the forehead, so that any fluids may flow from the throat and mouth; and, without loss of time:—

#### I.—TO EXCITE RESPIRATION.

4. Turn the patient on his side,—and (1st.) Apply snuff or other irritant to the nostrils. (2d.)—Dash cold water on the face previously rubbed briskly until it is warm. If here be no success, again lose no time; but

#### II.—TO IMITATE RESPIRATION,

5. Replace the patient on his face; (when the tongue will then fall forward, and leave the entrance into the wind-pipe free;) then,
6. Turn the body gently, but completely, on the side and a little beyond, (when inspiration will occur,) and then on the face, making gentle pressure along the back, when expiration will take place alternately; these measures must be repeated deliberately, efficiently, and perseveringly, fifteen times in the minute, *only*; meanwhile,—

#### III.—TO INDUCE CIRCULATION AND WARMTH,

7. Rub the limbs *upwards*, with firm pressure and with energy, using handkerchiefs, &c., or towels.
  8. Replace the patient's wet clothing by such covering as can be instantly procured, each bystander supplying a coat, waistcoat, &c.
- These rules are founded on physiology; and whilst they comprise all that can be immediately done for the patient, exclude all apparatus, galvanism, the warm bath, &c., as useless, not to say injurious, especially the last of these; and all loss of time in removal, &c., as fatal.—*London Lancet*.

HEALTH OF AMERICANS.—De Bow's mortality statistics, compiled from the last census, show that the people of the United States are the healthiest on the globe. The deaths are one hundred and twenty thousand per year, or one and a half per cent. of the population. In England the ratio is near two per cent., and in France nearly three per cent. Virginia and North Carolina are the healthiest of the States, and have six hundred and fifty-eight inhabitants over 100 years of age. These figures, however, may all be reversed at the next census, for the medical schools were never more flourishing, twenty-six colleges having graduated last year, about thirteen hundred doctors.

## HINTS FOR MARCH.

In the opinion of some of our best orchardists, this is the month in which pruning may be done to advantage. There is more leisure than at any later period. The trunks of the trees in the orchard should be examined, and any that are mossy should be scraped; and it would be as well to give all a good scrubbing with a brush and soft soap. If the ground is thawed, all suckers that appear around the roots of the trees can be removed; and all shoots on the trunks should be carefully cut away. For standard trees, little is necessary beyond thinning out the small branches, to admit light and air freely to all parts of the tree, and removing all straggling branches and those that cross each other. In doing this, aim as far as possible to obtain a handsome, well-balanced head. Grape vines, and trees bearing stone fruits, may also be pruned in this month. *Dwarf Trees* may also be pruned now, and it should be done thoroughly. Pruning and manuring are essential to the growth of fruit from dwarf trees. If the weather be favourable, *Hot Beds* may be started, if designed for growing cucumbers or melons. If intended only to raise plants for the open ground, the first of April will be time enough.

*Fences*, as every good farmer knows, should be looked after at the earliest possible moment. When the spring fairly opens, there is always enough to engage the attention, without being obliged to repair rickety or broken-down fences. Those who intend to plant fruit trees this spring, should be looking about them. Send your orders to the nursery early, so that you may get your trees in the ground before they have begun to bud. Late spring-planted trees seldom do well.

*Marketing*, if any remains to be done, had better be got through with now. Prices are surely high enough for every kind of produce. Wheat is not likely to go up much beyond present rates. At all events, those who are holding over for better prices are just as likely to lose as to gain by the operation.

The following are the prices, at Toronto, for the leading agricultural products:—*Wheat*, from 6s. 6d. to 6s. 10d.; from one to two thousand bushels per day. *Flour* in active demand, No. 1 Superfine, 26s. 3d. to 26s. 6d.; Extra and Double Extra, from 28s. 9d. to 32s. 6d. *Spring Wheat* is worth 5s. 2d. to 5s. 4d. *Barley*, 6s. *Oats*, 2s. 8d. to 2s. 10d. *Peas*, 3s. 9d. to 4s. *Potatoes*, \$1 per bushel. *Pork*, high and scarce; Dressed Hogs, \$10 to 10½ per 100 lbs; Mess, from \$23 to \$25 per barrel. *Hay*, \$12 to \$18 per ton.

To CORRESPONDENTS.—We have received several communications for which we could not find room in this number. One from Mr. Parsons, on a variety of subjects, and much too lengthy for our columns. Some of his remarks on Turnip Culture are interesting and we shall therefore endeavour to make room for them in the April number. We must impress on correspondents the importance of making their communications *short*—i. e. not to extend beyond a page, or at most two pages. Rarely indeed should an original communication exceed a page. In a paper like the *Agriculturist*, short articles and variety should be the rule.

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