FARMER'S ADVOCATE

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The Farmer's Advocate !

PUBLISHED MONTHLY BY WILLIAM WELD.

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Seeds.

THE AGRICULTURAL EMPORIUM REPORT.

The Red Fern Wheat sent out last year has, in many instances, given great satisfaction. In some localities it has not succeeded any better than the Fife Wheat. The Fife is well known to be a very valuable variety, and where it is succeeding it should be continued, and new varieties only be introduced in small quantities. The Red Fern Wheat is preferred in some sections—on our farm the Red Fern grew too luxuriant. As the season was unusually productive of vegetation, it lodged badly; no wheat could stand on such land as we put it on, and in such an unusual growing season, and the heavy beating rains and winds that set in at the time of filling prevented the grain from filling as well as it would otherwise have done; still it was not affected by rust. It is not as plump as it would otherwise have been, but it has given us better satisfaction than any spring wheat we have raised for many years. It is very hard to thresh; it makes excellent bread. The millers like it. We did not grow any of the Red Chaff Wheat. This variety yields well, but the millers do not like it. The Australian oats here yielded well; they ripen a few days later than other white oats. We had great difficulty in procuring these oats last year. If we counted the cost of the first bushel we procured of this variety it would cost us over $100. We had a shipment sent up that contained wild oats and many other foul seeds. We could do nothing with them; but sold them to a livery stable keeper to feed. We procured another lot, and, by using two fanning mills and hand picking we procured some seed that has given satisfaction, and done good to the country without harm. There are some that complain about the price we charge, but we must strike a balance from losses and costs in every way before we can make a living. We try to satisfy the majority of our subscribers and supporters. Now the ADVOCATE and the Emporium will be conducted separately. We shall continue to watch and report on any new varieties of grain, implements or plants that we can hear of or consider of benefit to our readers. As to the Bohemian Oats, we consider their value principally adapted to localities where the settlers are 50 or 100 miles from a grist mill. The Egyptian Wheat requires further trial before we laud or condemn it. We have heard of two varieties of spring wheat: one from Minnesota and one called Odessa. The reports from both are good—we hope to try some this season. There is nothing particularly new in peas or barley. The crop of new varieties of potatoes is and has been large; some are good and others are good for nothing. Our report on potatoes will appear next month.

Early Maturity of Improved Live Stock.

One of the great advantages of improved live stock, and especially of pure-bred Shorthorns, is their early maturity as compared to the common breeds; and this is not only a source of great profit to the feeder, it is a benefit to the entire community. With the constantly increasing demand for meat in the English markets, this early maturing and early fattening of cattle enable the stock feeders to send every season a much greater quantity of beeves to market, and in a much better condition, and of a higher grade, than they could otherwise do.

Some years ago, a gentleman showing us the well-bred Shorthorns in his pastures, said: "I could not afford to feed cattle of the old breed. It would not pay to feed bullocks or heifers four or five years for the Liverpool market. By feeding none but well-bred stock I can sell them in prime condition at two and a half years old, and often some months under that age. I fatten nearly twice as great a number of cattle in a given number of years for my farm, and my beef is of a superior quality and worth a higher price." In his remarks are condens d the reasons in favor of feeding well-bred stock in preference to any other.

Fattening cattle at and under 30 months is no longer a new thing. The selling for the shambles stock very much younger is not uncommon now among feeders. We meet occasionally with instances of maturing at so early an age as even in these days must be considered extraordinary. In the *Agricultural Gazette* are given the particulars of a sale of such young stock by Mr. Stanford, in Sussex. We give below a communication from Mr. Blundell, of Southampton, to an English paper, on this subject, that will, we have no doubt, be read by our readers with interest:

SIR,—Mr. Glazebrook, of Shoreham, lately slaughtered a 16 months old steer, the dead weight being 76 stone, 2 lbs. (1,066 lbs.,) with very little offal, and yielding 15 stone (210 lbs.) of loose fat. The method adopted by Mr. Stanford of rearing and fattening young Shorthorns from birth is not generally understood, although the practice is extending. I am glad to find that it is so, having myself inaugurated this method of rearing and feeding young cattle in South Hants in the year 1857. I found it very profitable, and can recommend the system carried out by myself from that time. I read a paper upon the subject before the Royal Agricultural Society, June 18, 1862, and as many of your readers may not have had the opportunity of seeing my statements at that time, I will shortly refer to them.

The calves are fed (being weaned at a few days old) with new milk at first, gradually introducing with the skim milk, linseed cake, meal, and barley meal, with a little sweet meadow hay for a time in the rack allowed them until they can safely take to green fodder, which they get in succession—1st, rye; 2nd, trifolium; 3rd, clover, with a portion of old mangel; then early turnips; to commence the winter they get hybrid turnips, carrots or swedes; and lastly, mangel until the green fodder comes in again, being supplied with clean, fresh oat or barley straw always in the rack while feeding either on green fodder or roots, the portion not eaten being removed for littering the boxes daily. As soon as they begin to take green fodder they are allowed a small portion, say 2 lbs., of cake meal per day, mixed with the old mangel, which is cut with Gardner's turnip cutter. As soon as root feeding commences, they get 4 lbs. of cake per day, and continue to receive this quantity until they are sold, at from 18 to 20 months old, having, however, during the last three months 1 lb. of bean or barley meal extra, but at no time after they once take to their green food are they allowed hay, as this would be found to absorb the profit and injure the health of the animals also, for since I adopted the method of straw feeding I have never had an animal hoven or unhealthy. The quantity of roots given the first winter is 56 lbs. per day; the second autumn not more than 64 lbs. per day, the meal being always mixed with the cut roots; in this way each kind of food is more beneficial to the animals, and when only fed twice a day they have plenty of time to lie down and digest their food, and will return to the troughs with a good appetite, and will eat a good portion of clean straw. My plan of accommodation for the latter is boxes 12 feet square in old barns, two animals in each box until they are twelve months old; after that time one in each box. The boxes are bottomed with 9 inches of earth to absorb the urine, with straw litter as cleanliness dictates. This plan, in my opinion, is far preferable to yards and sheds, as each animal feeds separately and gets its fair share of food, and is always free from annoyance by wet and cold in winter, or by the irritation of flies in summer.

In this mode of feeding I have frequently obtained prizes for young stock at the Easter Cattle Show of the Botley and South Hants Farmers' Club, and give one instance of baby beef of a Shorthorned heifer bred by myself, which took the first prize in a good class. This heifer was 18 months and 3 weeks old, was sold to Mr. Wm. Lunn, of Southampton, and weighed 98 stone, 6 lbs., with a great weight of loose fat inside. It is very satisfactory to me to see the practice extending in Sussex and Surrey, and I can confidently recommend it as safe and profitable to all young beginners in cattle feeding and rearing.

JOSEPH BLUNDELL, Southampton.

The selection of a bull should be made with special reference to the wants of the owner and the style of improvement which he desires. If he sells milk, an Ayrshire or Holstein will probably be the best to cross with his stock; if he sells butter, the Jerseys; if he wants working oxen, the Devons; while for steers, oxen or cows for beef, or for general purposes, the shorthorns will be all that can be desired.

Orchard and Garden—No. 1.

HINTS FOR MARCH BY H. ORTI.

Every fine day some work can be found to do in the orchard or garden. Examine your trees carefully for cocoons and nests of insects. Timely use of the knife and heel now will do a great deal of good to cut and crush out those crawling, devouring individuals when everything is in full leaf. On full grown trees remove all suckers and dead branches—so much towards a start in pruning. Take a careful view of the tree from different points, and wherever a limb or branch interferes with one another, remove one, leaving that which is in the best position to carry on a uniform growth. A tree should be well balanced (to use the expression) in every quarter, so as to allow the sun and air to have free access to fruit and foliage. By proper management and careful attention, from the time the tree is planted, with the knife, it will be rarely necessary to use the saw. Nothing looks worse, or is so injurious to the well-being of the tree, as the cutting of limbs 4 to 6 inches and more in diameter. Sometimes, of course, it is actually necessary to do so, and we have attempted to describe in Fig. 1 the right and wrong methods—

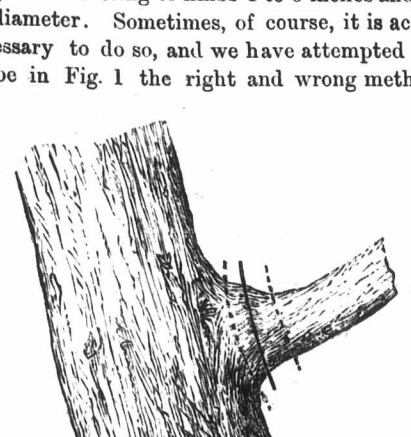


Fig. 1

he dotted lines being the wrong places to cut and the dark line the proper place. Very little observation will determine the pruner how to do so. In fact, nature seems to have made the mark, there being a natural swelling from the main trunk around the branch. By cutting right at the edge, the cut will readily heal over. It is a good plan to cover the cut with grafting wax, as this prevents the sap from running out, and has a general good effect. To make a useful wax—pliable in most weather—take three parts resin, one part tallow or oil, and 1 part bees' wax; when melted, add a gill of alcohol, and when cool the article is ready for use. Be careful who you employ to do any grafting; learn to do it yourself, if you don't know how. It is a very simple operation, and a little practice and experience soon make perfect. In April No. of this paper we hope to illustrate and describe the various methods practiced. A great many travelling tree grafters merely bring scions they cut from your neighbor's orchard to graft on yours, thus simpy increasing the poor varieties you may have, or giving you worse. In pruning young trees or dwarfs, cut back about one-third of the preceeding year's growth, making the cut from the inside, leaving a bud on the outside, as illustrated in Fig. 2.

This will have the effect as illustrated in Fig. 3. And careless pruning will result in something like Fig. 4.

Aim to produce a pyramidal form; and growth, stout, short and well ripened. Old trees should have the loose bark scraped off them at least once in every three years (nothing is better than an old hoe), which prevents insects from breeding, &c. It also creates a healthy growth, and gives the tree a clean appearance. Mark all blanks in the orchard to fill up with young trees. Give your orchard a good top-dressing of ashes, lime, manure, &c. In the garden, cut and thin out old and young wood, and shorten well back currants and gooseberries; this will give a renewal of young fruit-bearing wood, and will increase size and quality of fruit. Cut out dead wood from raspberries, and shorten young canes to about four feet high. Give the whole garden a liberal coat of any manure, so as to be well dug or forked in the ground and around all small limbs, rhubarb and asparagus beds. The

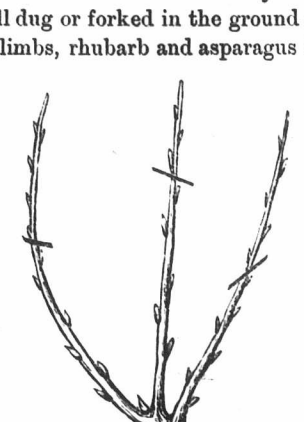


Fig. 2.

latter will be greatly improved by a liberal coat of salt. Determine what you wish to plant by consulting the wants of your family, your distance

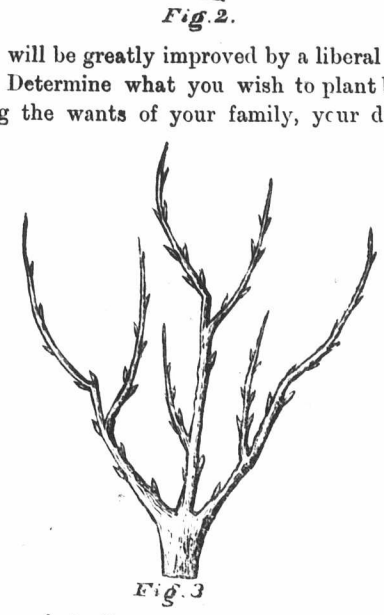


Fig. 3

from market, the aspect of your ground, the nurseryman's catalogue, and send your order in early, so as to give him time to procure anything

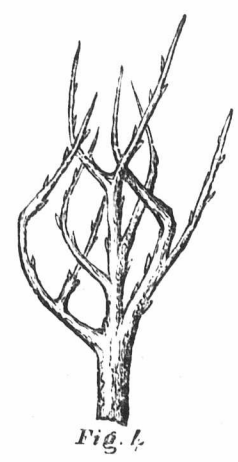


Fig. 4.

he may be short of, so as to send all together. Do not delay, but plant this year. A season lost can not be regained.

Tobacco Raising in Canada.

Few of our farmers, we believe, have any idea of the extent of tobacco culture in Canada. The habitans of Quebec not only raise all the tobacco for their own consumption, but raise also large quantities for sale. The quantity grown is estimated at not less than two millions of pounds, and the extent of its growth would, there is no doubt, be greatly increased were it not for the obstacles in the way of its sale. What they raise over the quantity required for home consumption is sold clandestinely to the dealers in it, who mix it with tobacco that has been imported from other countries and on which duty has been paid. By this means the profits of the dealers are increased considerably.

The Canadian tobacco may not be as good as that grown in more southern climes, but when mixed the difference is not observed by the consumers. Dealers are liable to a penalty for purchasing or selling the home-grown weed, but the profits made, if they escape detection, are such a temptation that they run the risk. The Legislature might, we think, devise a means whereby the prohibitory and vexatious course now pursued might be avoided, without loss to the revenue, and much of the money now paid to foreign growers might be retained in the country.

Fancy Shorthorns.

The *Live Stock Journal* (Buffalo, Jan.) gives a table showing all the sales of pure bred stock, which exhibits the sturdy progress of this "most perfect race of cattle." The sales of this year show a great increase. In 1874 there were sold 2,592 animals, at an average of $337, while, in 1875 the sales numbered 4,307, at an average of $422 per head, the sales the past year aggregating nearly twice as much as those of 1874, being $1,832,383 to $1,003,159. "This increase," the journal well remarks, "in the average prices, is noteworthy, when we consider the greater number sold and the greater dullness in general business." There may have been unwise speculation, there may even have been gambling in some of these transactions, as is said by some, but this does not in the least affect the real merits of the question. The fact is, beyond doubt, that the interest evinced in improved live stock instead of decreasing constantly increases; that the shorthorn of an established pedigree encroaches on all sides on the ground held by other breeds. What stronger proof is needed than the recorded fact that, though the number of sales in 1874 was considered large, and the prices high, the sales of the following year aggregate nearly twice as much. "The shorthorn fever," we have been told, "is at its height, and will doubtless run its course like other fevers." We can see no symptoms as yet of "the fever having run its course."

Granted that there are cattle outside the families known as "fancy shorthorns," which are as valuable for all practicable purposes of the dairy as for the butcher, there must, notwithstanding, be some ground for the continued demand, with prices steadily advancing. It is something distinct from their immediate worth for butcher or dairy keeper. It is that they are pure bred, and hence are able to transmit to their progeny their points of excellence that have added to the wealth of stock breeders and feeders more than can be estimated. By breeding from ancestors of a pure strain, unmixed for some generations, the distinguishing properties so much prized are fixed, whereas in crossbreds the progeny is liable to revert to the *status* of the ancestors of inferior breed.

We hold that the perpetuating of pure horn stock of good pedigree is most advantageous to the farmer. The value of his live stock is greatly increased by breeding from good cows of common breed and pure bred sires. The estimate that has been given on good authority that the blood of a pure bred bull increases the value of common cattle for grazing purposes $10 at two years old, and $15 at three years, is certainly not high, and at this moderate estimate the great profit to farmers of having the use of such an animal for their stock will amount to a considerable sum in a few years.

The prices paid for short horns of approved strains with long pedigrees may be high. This is a question for those who purchase and sell such stock. For the farmer the safest and most profitable stock is the good cross bred, and it is his interest to keep none but those of the very best quality. A cross breed is fattened in less time and at less cost than any of the old common breed. If bred from a dam of good milking quality, there is no better cow for the dairy. They attain maturity at an early age, are easy fed and fattened, and they will bring much higher prices when the owner thinks it his interest to dispose of them.

Jottings on February.

The Ontario Parliament deserves the approbation of the country for attempting to check the excessive use of intoxicating liquors. It is difficult for them to enact a law that would be satisfactory to all.

The expenditure of the public money for some railroads in some parts of the country where they are not needed, deserves the condemnation of the country. Justice cannot sanction a taxation for a railway to oppose a line that has done a vast amount of good, and that has not yet reaped a moderate return. We believe one or more of the lines subsidized by our money will never pay one cent, except to fatten contractors or serve the ends of some political supporter. As we are a little acquainted with the localities and requirements, we cannot condemn in too strong terms this expenditure.

The granting of more pay to members of the Legislature will not, we believe, be approved of by the majority of farmers, particularly at such a time as this, when the financial state of the country is so much depressed. In the speech from the Throne, of the Dominion Parliament, Lord Dufferin expresses a desire to reduce the public expenditure in some ways. This may be done with advantage.

The representation of Canada at the Centennial Exhibition may be of advantage to the country, if we can get justice done to us and we do not pay too dear for our whistle.

The Dairymen's Association had a most interesting and useful meeting in Ingersoll. We believe it to have been the best meeting connected with the Association ever held in Canada. Great good must result from these meetings.

The Beneficial Effects of Snow.

Snow is no mean fertilizer of the soil, conveying to it ammonia from that well-supplied store-house, the atmosphere. The great advantage of it to the fall crops is known to all. In some parts of North America, where little or no snow lies on the plains, they are wholly unable to raise fall wheat. But there is a service performed by it not so generally known; it tends to destroy numbers of those insects that are productive of so much evil to agriculturists.

While we are lamenting that this, our winter friend, has not visited us as much as in other years, they are rejoicing at the general fall of snow in Europe. In France, while the southern and eastern provinces and the Rhone valley have been most favored in this respect, the northern and western districts, although more tardily visited, have equally participated in the welcome snow cover. Reports from all parts of the country express unanimous satisfaction in reference to the first as well as the last sown wheat plant. The rye plant, too, under the shelter of its snow covering and arrested in its growth by the frosty weather, will have more chance of escaping frosts if they occur later in the season. Moreover, they rejoice that the snow will tend to the destruction of injurious insects.

Draining—The Advantages it Confers —Its Cost.

We have had several enquiries as to the cost of draining, the best and cheapest method of draining, and if draining would so improve the land as to repay the expenses. We now reply to these queries as briefly as we can. The subject is one of so much importance, and involves so many details that it would, to treat it fully, take up a space that we could not give to it.

The first step in the improvement of heavy, wet soil is draining. As long as water remains stagnant in the soil, every attempt to improve it by more thorough cultivation, heavy manuring, or rotation of cropping, will result in disappointment. The cause of failure is in the soil, and it must be removed from it to make real improvement practicable. The first great aim of the physician is to remove the disease; when he has accomplished this, he then turns hopefully to build up the strength and vigor that could not be attained while the disease remained in the system. So is it with other matters. The first step in improvement is the removal of those causes that have been the cause of the evil; and this is what draining does: it affords a free passage and sufficient outlet for all superfluous water, so that none shall remain in it so long as to injure or retard the germination and healthy growth of plants.

To the observant practical farmers it is scarcely necessary to point out the unmistakable symtoms of land in need of draining. The difficulty of tilling the land in early spring, the feeble, slow vegetation, the hungry, sickly appearance of the stem and blade struggling for existence, the surface soaked with stagnant water after rain, and cracked in drought, are proofs positive that the land needs draining. The land is too compact.

In order to reap any benefit from the cultivation of such soil it must first be drained. The rootlets of the growing crop will then penetrate every particle of the soil which has been made mellow and pliable by the gentle filtration of the water, and the admission of the air, that the water had excluded. The decomposition of the roots in the soil will render available plant food that had, while the soil was filled with water, been of little or no use to sustain vegetable life. The more freely the air circulates in the soil, the more readily are its fertilizing elements made available for plant food, and by no other process can this circulation be induced so thoroughly as by thorough draining where necessary, followed by deep and thorough cultivation.

THE COST OF DRAINING.

The estimates for draining vary very much, and even the accounts kept by those who have had the work done under their own inspection differ as to the cost of draining. The amount of expense, depending much on the distance the drains are put apart, accounts for this seeming discrepancy. In the *Colonial Farmer* there appears a letter from Mr. R. Thompson, of St. John, N. B., giving an exact account paid by him for draining twelve acres of hard, stiff clay land. Having had three first-class drainers sent out to him from England, he gave them the job to do. The result was as follows:—

548 rods drains: 24 feet deep, 24 feet apart, at 60c. per yard	$328.80
28 rods drains: 6½ feet deep, 25 feet apart, at $1.20 per yard	33.60
Extra work: opening ditches and building outlets	9.00
Total paid for labor	$371.40
Drain pipes, 800, ½ inch, at $9.00 per m.; 6,300, 2 inch, at $10.50; 1,529, 3 inch, at $16.00, and 480, 4 inch, at $20.00	107.39
Total cost	$478.79

The expenses to Mr. Thompson, already $100 per acre, is what few farmers would be inclined to pay; but it might be reduced more than one-half. The workmen earned an average of $2.50 per day, and the ground being hard, stiff clay, the drains were not put so far apart as they might be if the ground were less tenacious. "For thoroughly underdraining stiff clay," he says, "would, at 24 feet apart, take 100 rods, or 1,815 draining pipes. Should the ground be anything of an open bottom and springy, 36 feet would answer well. This would only be 73 rods, or 1,245 draining pipes per acre. The unusual depth to which it was found necessary to sink the drains added very much to the expense."

The above is an extreme case of expenses. We know from our own experience that a good workman can open the drains, at 24 feet apart, lay the draining tiles, and cover in the drains of an acre of ground in from 25 to 30 days, according to the tenacity of the clay through which they are made. We have seen a statement from a New York paper of the son of an English farmer draining on his own land (12 acres) at the cost of $325, the work done by himself, and debiting for it in the account made by him; and using nearly 5,000 good tile underdrains. What he charged for labor is not stated—it must be very low.

Would the improvement of the land by draining pay the cost? This question is answered in the affirmation of those who have drained their farms. Mr. Johnson, near Geneva, N. Y., who has been pursuing the practice more than thirty years, says it pays for itself in two years, sometimes in one. Mr. Thompson, who paid so high for drainage, says it has paid good interest for the outlay. After draining he raised 355 bushels more turnips, 282 bushels carrots per acre, and 600 bushels marigolds more than he was able to raise before draining. One instance that came under our own observation we would mention, as corroborative of other testimony on the matter. A very wet field of stiff, hard clay was underdrained at the expense of $35 per acre. Before being drained it would never give a good crop. The first crop after draining was potatoes, giving a yield not less than 500 bushels per acre. The year following it yielded a crop of oats fully twice as heavy as it had ever given before. The improvement from draining on the annual crops was estimated at ten dollars per acre.

Canadian Barley in the United States.

The New York Produce and Exchange Committee in Grain have ruled that barley, hitherto known as Canada No. 1, shall hereafter be classed as extra Canada. No. 1 Canada shall be plump, sound and well cleaned grain, weighing not less than 48 lbs. to the measured bushel, and in color not equal to the extra. No. 2 Canada shall be known as stained, instead of slightly stained.

It will be seen from this ruling that there is a class of Canadian barley admitted by the American Board to be superior to the American, taking the rank of No. 1 in their markets; and as No. 1 is the highest grade of American barley, their appreciation of the quality of that grown in Canada is noteworthy. Though the duties levied by the American Government on all Canadian products may be said to be in many cases prohibitory of our having access to their markets, the quantity of our barley sold there is very great. They find it necessary to purchase it at a higher price than any they can raise, and on the purchaser the duty payable is an extra charge to the high price. In the Detroit market on Feb. 1, American barley was sold at from $1.80 to $1.85 per cental; Canadian barley from $2 to $2.05. The total receipts of Canadian barley at United States ports for the seven years ending 1875 amounted to not less than 34,560,000 bushels.

Hints to Dairymen—No. 2.

WRITTEN FOR THE FARMER'S ADVOCATE BY J. SEABURY.

Calving time is a critical one for the dairyman as well as the cow, and in which he will have his judgment and experience fully tested. Hence, the months of March and April will be a time of care and anxiety, and in which he will have to be on the alert and watch his herd with a keen, discerning eye, and see that they are all in a good, healthy condition. To every one who has one or more cows we would say, Watch them closely during this period. Keep them as comfortable as possible, and do not, upon any consideration, allow any of them to go back or stand still at this season of the year. By all means keep them thriving and in good heart. Every dairyman should know that it is easier to keep flesh on his cows than to put it on after they have lost it. Negligence and inattention, and the want of plenty of good feed at this time of the year, will be the means of his losing heavily the coming summer; for a cow will not and cannot milk well which is in a weak and thin condition; besides, her milk is nothing like as rich as one that is in good condition and healthy. The months of May, June and July will find her, instead of giving a good, heavy flow of milk, recruiting her system and putting on flesh which she should have previously during the winter months been putting on, and by the end of that time she will be more inclined to continue putting on flesh, and when cold weather comes in the fall, she will, in all probability, go dry. Hence the importance of keeping a close and watchful eye on your herd and see that they are all in a thrifty condition. If any are not doing as well as you would like to see them doing, find out what is the matter with them; watch them closely; see whether they are eating their share of feed. If their appetites are not good, or they are nice about what they eat, tempt their appetites with some roots, warm bran mashes, or some boiled oats or barley. Another splendid thing is boiled flax seed. Every dairyman should have a bushel or two for that purpose. A good handful boiled with two or three quarts of oats or barley for each cow, and mixed with as much or more cut hay or straw, make an excellent mess for a cow. If you have none, do not fail to get a peck and sow the coming spring in one corner of your cornfield, or some other field, and you will be pleased with the result. In fact, it is good for man and beast.—There is nothing better for horses for keeping their coat and skin in a healthy condition. If you have any roots, now is the time for the cows to get them; but by all means aim to have them last until they are turned out on the grass. Cows that have had a liberal supply of roots for a length of time and are discontinued, will go back in their milk very materially, and that is a point which every dairyman should avoid by every means in his power, for when the flow of milk is checked, it takes time to bring it back again, and every quart lost in that way is like the hours and minutes of our lives—they can never be recalled or regained. If you have not many, feed a few—ever so little every day will do them good—but be sure they are fed regularly. No dairyman should be without more or less roots of some kind—they are food for his cows, food for milk and food for the manure heap. Some farmers say that you cannot have good manure without them. One thing we do know, and that is, the farmer who has plenty of roots always has plenty of manure, and invariably a good farmer. While on this point we would say—Feed your cows as you would feed yourself—regularly, and with a variety of good, nutritious food. Take, for example, our best breeders of thoroughbred stock—look at the attention and care they give their stock. Suppose dairy cows were cared for and fed in the same way, what would be the result? It would astonish the dairyman.

There is a great diversity of opinion as to which are the best kind of roots for cows. Some writers argue that carrots and mangles are best, and that turnips are not fit to feed to cows. Others say that they never have had any bad results from feeding turnips to cows giving milk. I am of opinion they are all good for cows if properly fed and in the *proper time*. My firm opinion is, that the proper time to feed roots, particularly turnips, is immediately after milking, and upon no conditions to vary that time—better let them go without than deviate. If turnips are fed in this way, I venture to say that there will in no instance be any turnip flavor in the milk. Instances have come under my notice in which the feeder (who did not believe in this practice) fed the cows when being milked, the result of which was that the flavor was plainly perceptible in the milk and butter. Let those who have turnips try this plan, and they will be satisfied with the result. But they must not feed too heavy, and, when commencing, give a small quantity and gradually increase. Another excellent thing for feeding cows is bran and oil-cake, scalded, and fed warm. Bran is very rich in the elements of milk, more so than corn or pea meal; especially is this the case when cooked, bran being hard to digest in its raw state. Many farmers and dairymen lose sight of the value of bran by feeding it in comparison with meal in bulk, forgetting that a given measure of meal will weigh not far from three times as much as bran. Two quarts of meal would be thought a moderate feed for a cow, but six quarts of bran would be thought a large one.

It is a great mistake in feeding cows to give them all the hay that can be crowded into them. If the hay has been cut early, when in the blossom, or before, it will do very well, as well cured hay at that stage digests very easily. But when cut later on it is dry, and, being full of woody matter, renders digestion slow, and they will not give as much milk as they would on a more digestible diet. If cows are to give a good flow of milk during the winter season, they must be aided in digesting their food by giving them such feed as will be easily digested and converted into milk. The more a cow can digest beyond what is needed to sustain animal life, the more milk she will give, provided she has the proper milking qualities. That is one reason why many promising cows fail to make good milkers, because their digestive organs are not powerful enough to produce much more than is sufficient for the sustenance of animal life.

Every dairyman should have some means of heating or cooking feed for his cows, particularly in the spring; he will find it a great saving of feed as well as a great stimulent in the production of milk.

Another important thing is water for the cows. Do not allow them to go a half mile or mile, as is often the case, to some creek or ditch, and there drink a quantity of water which is the next thing to freezing, if it is not mixed with snow and ice. Cows that are not subjected to such treatment will not go to water till they are absolutely compelled by extreme thirst to do so, and then, when they do go, they will drink too much and, by so doing, they chill their whole system, and will, perhaps, stand and shiver for hours. A dairyman who gives his cows such treatment is wasting a quantity of his best feed, for they will have to eat that much more to warm up that ice water to the proper temperature. Every dairyman must know that animal heat is kept up by the food which the animal eats. Warm stables and plenty of good water from a well or cistern in the yard, are great savings of feed. There is no better investment that a dairyman can make than by putting down a good, large well or cistern, or both combined, beside his barn, so that the cows, and, in fact, all his stock, can be watered without going out of their yards. A very striking illustration came under my notice a few years ago. There was a small, low ravine that ran near the barn and stock yard, and which drained several of the adjoining fields. Into this ravine the owner put a tile drain with a number of feeders and lap drains, letting it come to the surface opposite his barn, so as to furnish water for his stock. From this drain there ran a nice stream all the winter, and never froze. To this the cattle went regularly twice a day, and sometimes oftener, whereas previous to this, when they had to drink from a hole chopped in the ice, they never went more than once, and, on cold and stormy days, not even that.

The colder the weather the more plentiful and nutritious should the feed be in order to keep up a vigorous and healthy circulation through the system. Experiments have been tried in which the giving of milk-warm water to cows has largely increased the flow of milk.

In-coming cows should be treated with great care. They should have cooling and laxative food. Scalded bran and middlings will be cooling and healthful. When the calf is expected, the cow should be turned into a loose stall or into a quiet stable, alone.

Cheese Factories.

As the season for building cheese factories and making improvements in the old one is at hand, we give a few suggestions which may be of use to those who are not very well versed in th business.

In building, select a clean, dry, airy site, high enough so that all the water, washings, &c., can be carried some distance from the buildings so as to prevent all bad odors and foul smell, which are very injurious to the milk and cheese, as well as to the health of all living in the vicinity. We think that if some of the old factories throughout the country were moved from their present sites and placed on clean, fresh ones, and every precaution taken to keep the water, whey, &c., from soaking into the ground and laying about the factory, it would be one step towards their making a very much better article of cheese. The owner of every old factory should not fail to give his factory a thorough overhauling every spring before commencing operations, and see that every article in and about the building is well cleansed and sweetened; also, all the vats, hoops, presses, &c., should receive a coat of fresh paint. It will add greatly to the appearance as well as making them much easier to be kept clean.

Also, be sure and have a good supply of pure cold water, either from a spring or well; this is very requisite, as no factory can be successfully carried on without an abundance of water.

Put up your building in a good substantial manner, and finish off with some little taste, and put on a little paint; also, plant a nice lot of trees of some kind around the building and see that they grow. We believe that the temperature of curing rooms would be very much reduced in hot weather by their having a fine row of maple or some other clean trees around the factory. It would cause a circulation of air and keep the rays of the sun from striking the building. Another important thing is to have the hog yard (if one is kept) a long distance from the factory; it should be 40 or 50 rods away, or even farther. There is nothing more disgusting than to see the hog yard within a

few rods of the factory, and in some instances adjoining it. Put in a steam boiler, with or without the engine, as you may require; if water is needed, it is much the cheapest way to pump by steam. You have it when you want it, which is not always the case when pumped by hand; besides, the hands generally have plenty to do without pumping water.

Use the gang presses. They are much more convenient and take much less room than the old ones. Lath and plaster the curing room on the sides and over head, making it as tight and warm as possible. Put good, large ventilators in the roof, with a number of small apertures through each floor, about a foot square, covered with a grate and slide, so as to be made close in cold and windy weather. Use tables for curing the cheese upon. They can be put in four tiers high; the upper ones will be much the warmest in cold weather.

We give below the plan of a convenient factory, the main building being 30 x 60, and large enough for the milk of 300 to 400 cows.

A—Making Room, 25 x 30 ft.; B—Boiler Boom, 10 x 30 ft.; C—Presses, 12 x 15 ft.; D—Curing Room, 35 x 30 ft.; F—Window and Platform for receiving milk; V—Vat; S—Sink. Ice House should be near Presses.

The making room is large enough for three vats, and the curing room will hold 300 to 400 cheeses, so that with the room above, there is ample room for 1,000 cheeses, as the building should be two stories high.

The following is a list of the principal articles and materials for a cheese factory of 300 to 400 cows:—

Boiler and engine, two 500 gallon vats, two gang presses, 8 to 10 cheeses each; one 600 lb. platform scale, weigh can, milk conductor, horizontal curd knife, perpendicular curd knife, curd sink, scoops, bandages, agitator, rubber mop, two rennet jars, two thermometers, set testing instruments, graduated measuring glass, milk book, tin pails, dippers, &c.

(To be Continued).

Line Breeding.

This is the term now applied to in-and-in breeding. The old theory of crossing has been so long in vogue and so highly commended, and such beneficial results have been shown on nearly every arm, that the new system of line breeding or in-and-in breeding has scarcely been thought of as anything but injurious.. But the present high prices realized for Shorthorns and the results of recent practice have caused many an intelligent farmer to contemplate adopting this course. No doubt but hundreds of farmers in Britain and America will adopt this course for a time, and it will no doubt be brought into practice by the breeders of sheep, horses and swine.

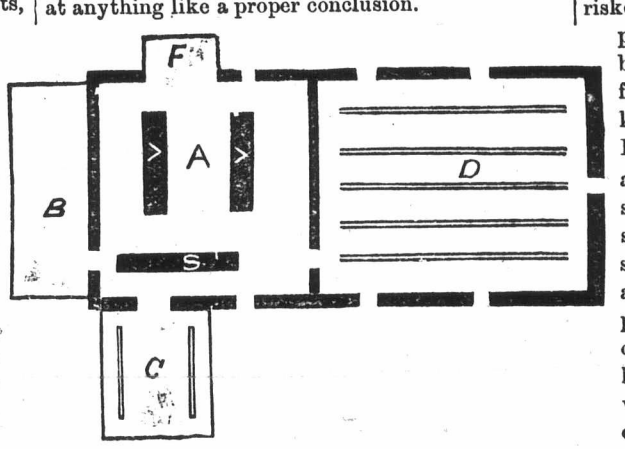
To what extent this practice may be followed time can only tell; many a farmer will try to establish a name and a particular breed. These high prices paid for Shorthorns that have been long inbred will cause thoughtful farmers to consider this plan, and when they have stock as near perfection as they desire, they will try and keep to that class. There are fine cows and good milkers, that are seldom surpassed and not often equalled by animals with long pedigrees. Should any man now establish a herd of large handsome cows, with uniformity of color and noted for milking qualities, he would realize a good return, as some complain of the size of the Ayrshires and others as lacking size, and some complain that the Shorthorns do not yield as much milk as common stock. There is an opening for some good farmers to establish a reputation and a fortune.

Perhaps we may have patent cattle ere long, as a law passed the second reading in the American Congress to grant patents to protect parties that introduced new seeds, plants or fruits.

Breeding Horses.

In your January issue you ask parties to take part with you on the horse question. I also find one signing himself "Horace" has this month touched on the same topic. Now, sir, this is a subject worthy of consideration by every one who has use for that most valuable of our domestic animals, and one on which a volume might be written, as opinion differs on this as well as all other subjects.

I quite agree with you in your January number where you remark that if the number of our horses were lessened and the weight of the general stock increased, it would be much to the advantage of our farmers as a general rule. Now, in your February number you suggest the idea of exporting horses to England, and you remark on our farm horses that they should have the spirit of the race horse and the weight of the dray horse combined. Now, let me make a few remarks on this and offer a suggestion or two, for it is only by the interchanging of ideas that we may hope to arrive at anything like a proper conclusion.



PLAN OF A CHEESE FACTORY.

In the first place, we must take a look at the duty our horse is required to perform; is our land light or heavy? Do we intend breeding for exportation to England, the United States, or simply for our own farm work? If the former, we must be careful to ascertain the class of animals which will meet the best demand and bring the largest price, for you must remember that the freight is all the same whatever the animal may be, and if you send an inferior beast you will find that the freight at present will eat up the profit, if not more. The class of horse for the English and States' market which will bring the best return at present is the heavy draught, if of proper quality —a low, thick-set fellow, with large feet, wide heels and plenty of bone and hair. They do not like too much daylight underneath; a beast 16½ hands high is quite tall enough. But in Glasgow a lighter class is wanted, as very few are bred in the neighborhood; a beast fit for cab and omnibus work is in most request.

For our own farm work in general we do not want a horse weighing less than 14 cwt., but on stiff, strong clay land we must get them a little heavier. I do not mean in flesh, but in bone and substance, for if a horse has to go too fast in the plough, no one can do work with him, nor can you keep him in good condition. He must be master of his work, whatever you may want him for.—Now, as you have stated, our horses, as a general rule, are too light. How can we do better than use heavy draught stallions on our mares? I would not say blood mares, as I am inclined to think we should keep the blood horse in his purity for this reason—he has been bred with such care as to speed, endurance and spirit that we should spoil him for what he is intended if we begin crossing. He is adapted to the road and for fast and long journeys; his spirit will not allow him to be ruffled in the way our farm horses are at times by bad drivers, almost worried to death. So I think he is better left as he is and to those who have more money to spend than our Canadian farmers. If we are going to breed for sale in foreign markets we must use, as I said before, heavy draught sires on our heavy mares, as there is no danger of getting too much weight either in England or the States; and for our own use the heavy horse on heavy land and the light horse on light land. The present general purpose horse of this country is nothing more or less than a mongrel. The old Cleveland bay comes nearer to a general purpose horse than any other I know of, and he is now almost extinct. No matter what animal we are going to breed, we should use a pure-bred sire. This axiom I believe to be admitted as correct by all parties.

I will now offer one suggestion for the consideration of all horsemen in Canada, viz.: We find all classes but the horsemen to have an association; for instance, the dairymen have their society, and the poultrymen their's, and the wool-growers their's, and so on. Why do not the men who have risked their lives and money in abundance by importing horses from England and Scotland, band themselves together for protection and form an association, so that a register may be kept, for one thing, and then apply to the Legislature to put on a duty of $100 at least on all stallions. Were this once accomplished, we should find our horses a very different lot in seven year's time, for this reason: A man starts with a broken-down, blemished old mare, and he will not or cannot afford to pay the price of a good horse, say $12, but he takes her off to some runt mongrel and gets the use of him for anything he likes to pay. If the duty was put on that would not be, and soon all those old bro-ken-down, worthless ones would in a great measure be done away with. And let me also add that no animal has done so much of late years to fill our farmers' pockets as the horse. Look at the numbers sent from Toronto city and the counties of Huron and Perth to the United States. The old saying—"What is every one's business is no one's business," is in this case truly verified.

I do wish some one better qualified than I would undertake to bring this very important matter before the public, and try if something could not be done to improve generally our farm horses.

Look at the Shorthorn men and their Convention held in the city of Toronto in December last; would that I could see one half the zeal in the horsemen of Ontario, and I well know what the result would be; we should soon have the best horses in the world! There is one thing we should do at any rate, viz., breed only from sound animals on both sides, and pay most particular attention to the feet and legs; these form the foundation of your horse, and if you have the best carcass in the universe and bad legs and feet, you have, in my opinion, only an apology for a horse. The old maxim that "like produces like" must not be lost sight of if you are breeding from a pure-beed sire, but if otherwise I think it is of very slight importance, as in cross-bred animals on both sides you cannot tell how far back they may go in the production of their offspring. They may go all as you would wish, and they may not; there is no certainty.

Now I must close for this time, but hope to send you another scribble on the management of our Fairs before long.

D. M.

Stock and Dairy.

Shorthorn Breeding.

CONDUCTED AS A SCIENCE, WITH A VIEW TO MAINTAINING THE HIGHEST EXCELLENCE IN USEFUL QUALITIES.

[Address delivered by Judge T. C. Jones before the American Shorthorn Breeders' Convention, at Toronto.]

(Concluded.)

Indeed, I insist that the argument, that by continuous incestuous breeding, we have a "concentration of blood," as it is called, which increases the hereditary power, is a mere assumption, which has neither reason nor experience to support it. I admit that incestuous breeding tends to produce certain characteristics, which are, as a rule, inherited by the offspring, such as to diminish the size and add beauty to the form of the head and extremities, as well as to improve the general appearance of the animal in style and elegance; but to assume that the power to transmit these, or any other qualities, is increased by the fact of in-breeding, is a grave error.

According to the teachings of science and experience, the hereditary power rests upon health, vigor and robustness of constitution, quite as much as upon purity of blood; and surely I need not add to what has already been said to prove that long continued incestuous breeding will impair these essential qualities. How far in-and-in breeding may be safely carried is a matter of dispute, but that the tendency of the system is to diminish the vigor and robustness of the constitution, I think the great mass of intelligent breeders admit.

Coming now, sir, to the very pith and marrow of our subject, I propound to this association of American breeders the question—what is, at this day, the pressing and all-essential matter to be attended to in our practice? Is it not true, as stated by the great British naturalist already quoted, that we have carried refinement far enough? And has not the external form been brought to all the perfection that art seems capable of communicating to it.

Have we not been wrong in assuming that we are to follow Bakewell and follow Collings, without considering the wonderful difference in the material we are working with?

If we are to credit the unsatisfactory and meagre history of the proceedings of these men, and the accounts given of the character of the stock in their neighborhoods, we must conclude that the tendency had been, as in the early history of Kentucky breeding, to increase the size without much regard to quality, and that in consequence the cattle were inclined to be coarse and indifferent feeders. Bakewell in breeding sheep found that refinement increased the fat; and he carried the practice to such an extent that it was said that his sheep were all fat, and another improver would be required to breed sheep that would produce flesh.

In the days of the Collings an animal with light, long structure, fine, delicate and well placed head, with beauty and compactness of form, was the essential model required, because the mass of the stock was coarse. Therefore, these characteristics were matters of real importance, as they were also in those days, in the absence of extended pedigrees, the material indications of good breeding.

But, sir, we find ourselves in a different era altogether. We are dealing with a well established and highly developed breed, in regard to whose purity of blood we are no longer required to guess by inspection of characteristics, but which, nevertheless, produce these characteristics with such uniformity that little or no attention is required to improve or perpetuate them. We have no well-bred Shorthorns in our day with coarse, ill-shaped heads and legs. It is rare indeed that we find a hide too thick, if it is only yielding and mellow. So that these indications of high breeding have come to be regarded as little else than mere matters of style and fancy.

And so it is, I respectfully submit, in regard to what is called "family type." We hear a good deal of the distinctive type of this or that particular strain, and of what is done, or may be done, to establish new types. What is usually meant by this? The form of the model Shorthorn—the level, round, cylindrical and deep carcass, with wide back, level hips and deep quarters, would seem to admit of very little variety in the way of types, unless we attempt something that is not essential to useful and profitable excellence. And I think it must be admitted by practical men that the modern distinctions claimed for particular families are mostly based upon these peculiarities of fancy.

I have heard it asserted that a dark blue or green colored horn was a great thing, because a certain distinguished breeder was always partial to this color in the horn! And, again, I have heard men speak of a peculiar shade of red color, with big white spots on the flank, as if they were characteristics of importance. The gay and "up standing" carriage, we have reason to believe, has frequently captivated judges and purchasers, where the more important useful qualities were very moderate indeed.

I admit that a certain degree of refinement is essential to quick feeding and good quality of flesh; but I insist that this refinement is generally found in all well-bred Shorthorns, and so universally results from pure breeding in this race that further improvement in this direction is neither necessary nor practicable.

But with useful qualities the case is very different; for, while this great breed is capable of developing the most extraordinary excellence in these essential properties, it is nevertheless true that here, as with all other varieties of farm stock, there is abundant opportunity for the exercise of all the skill and care of the most intelligent and experienced breeder in bringing up our average to the maximum of excellence and keeping it there. Therefore, as in all efforts to improve we can only advance with a limited number of characteristics at a time, it is of the highest importance that we have a clear understanding of the relative value of the properties we wish to develop.

Much has been written in reference to judging cattle by a scale of points, and although I suppose the system in the minute details that have been suggested is impracticable, especially as a guide to the judges in awarding prizes, it is believed that some general scale may be devised that will aid the judgment in determining the relative value of the different points.

By way of illustrating this matter we will suppose the valuable properties of the cow to be divided into four parts, the value of each to be indicated by numbers, as follows:

1st. Robustness of constitution, with good growing and feeding habits	20
2d. Proper form of carcass, low, deep, cylindrical, barrel-shaped, wide and level, especially the loins and hips	40
3d. Quality—thick, mossy and abundant hair, hide mellow and elastic, but not thin, well marked and fine grained flesh, which must be evenly distributed over the carcass	20
4th. Good milking quality	20
Total	100

These divisions may be subdivided to suit the fancy; but in this general form they indicate where we are to look for the real value of the animal, and how we should aggregate and balance the characteristics in judging the general excellence. And it seems to me that some method that shall direct the mind to what are the substantial and controlling points of excellence is absolutely essential it guiding the practice of the breeder, so that, instead of looking at the form of the horn, the peculiar mold of the face or muzzle, the gay carriage of the head, etc., and selecting his breeding animals with reference to his model type, in these and similar characteristics, which can only be valuable as they indicate the presence of more useful qualities, he shall rather insist upon the presence of these useful qualities themselves.

I fear I have detained the Convention too long. Gentlemen will understand that I am not opposing beauty of form, with style and elegance in their general appearance—not at all. On the contrary, I have as keen a relish for these things as any man, and for many years I attributed to them more importance than they deserved, as I think more men who have a taste for the breeder's art are apt to do, especially in the beginning of their career. My plea here is for the useful qualities, these we cannot dispense with; and I plead for that system and practice in breeding that will establish and maintain them.

I object to incestuous breeding, especially where it is practiced merely for the purpose of continuing in the line; because, when it is thus practiced, as I have attempted to show, it tends to impair constitutional vigor, and the growing and feeding properties, although it produces that high refinement of form that is so fascinating to stock fanciers.

And to this connection I submit to the candid judgment of gentlemen, whether it is not true much of the reputation which has been made by in-bred bulls has not been on account of these indications of high breeding and style in the progeny, rather than their excellence in substantial qualities? I do not object to breeding in the line so long as the line produces animals that are up to the maximum in useful qualities. I know that we occasionally find an animal that is far superior in excellence to the average of the race; and when the progeny of such an animal exhibits the same excellence they are of course reserved for breeders, and in such case we indulge in a little in-breeding so long as we are able to keep up the desired excellence.

While a breeder can show me cattle that are superior in useful properties, I have no right to condemn his system for him. And on the other hand, if I could show that his stock, though superior in style and refinement and of the most fashionable blood, bred strictly in the line, are yet defective in robustness of constitution, or in thrifty, growing kind feeding qualities, it is obvious that his system as faulty and should be changed.

I beg the indulgence of the Convention, for a moment longer, to add a word or two in reference to the public registry of pedigrees, because I conceive it to be so intimately connected with a main point I have attempted to urge in these observations, to-wit: the practical utility of our vocation as breeders of Shorthorn Cattle.

As we have seen, succession of good ancestors insures excellence in our stock, and the account of such succession is furnished by the pedigree. The written pedigree and its registry, though of recent origin, which have been found very important aids in the improvement of live stock. The idea that the publisher of such register had the right to determine what was and what was not thoroughbred, is quite modern; and it is amazing that a private individual should assume such authority. In the beginning the pedigrees of all animals that were claimed to belong to the race were recorded without any other condition of restriction, and that they should be accurate and truthful. But it was found that generally only such pedigrees were presented as shown good breeding—say four or five crosses of bulls of recognized merit. And thus, by a sort of general consent of the breeders, this number of crosses came to be regarded as the maximum that would justify the application of the term "blood," in the sense before explained. The same custom was observed in the registration of the lineage of the thoroughbred horse.

This liberality resulted from the judicious method so often observed by our British friends in dealing with public questions. That is, instead of pressing arbitrary enactments in advance of public necessity, their practice has been, in many instances, to allow custom to ripen into law, thus insuring a code, founded upon great principles, deducible from the necessity of the people. In this case the custom was based upon the most intelligent understanding of the public policy involved. The practice of keeping written pedigrees and their public registration was found to have a marked influence in stimulating improvement in the care and management of stock, and, therefore, it was obviously important that as large a proportion of breeders as possible should be encouraged to record their pedigrees. It was also known that every animal of approved excellence, and of such breeding as would penetrate that excellence, ought to be reserved for use as a breeder.

Here, then we had two powerful reasons, founded upon consideration of pubilc policy, demanding the adoption of the most liberal rule for the admission of pedigrees to the public record. Experience had demonstrated that four or five crosses of the blood of an established race would insure the presence of the characteristics of such race, with reasonable uniformity, in the subsequent progeny. This, therefore, was established as the maximum from which the recorded pedigree should begin. The breeding, of course, advancing with each subsequent cross, nearer and nearer, to the absolute purity of blood that is so much talked of, but is never realized!

The Great Shorthorn Society of Brita in has recently, by unanimous vote, indorsed and approved this liberal rule, and resolved that it shall apply to the publication of National Herd Book, now owned by the Association. It is possible that any considerable number of American breeders, in the face of all this, will insist upon or defend the harsh requisition, in all crosses, of connection with imported animals, though it require a genalogy of twenty generations, and consign one half

our Shorthorns to the condition of mere grades, and, consequently, to slaughter? And this, too, when it is admitted that a large portion of this stock is equal in excellence, and, as breeders, to any Shorthorn in the land!

Standing as I do, as a humble advocate of the best and most liberal policy for the improvement of our stock, I am bound to state here that we as breeders are driven to face this question —whether this restriction and the extraordinary avowal that it is the criterion of what constiutes "thoroughbreds" will not exercise a powerful influence in retarding the progress we are making by the diffusion of the blood of this matchless race in the improvement of American Cattle?

Mr. President, in view of what has been accomplished by the enterprise, intelligence and liberality of the American breeders represented by this association, it seems to me we have just cause for saying that we are "proud of our constituency."

When in all the world's history has so much been done in the same length of time to improve and add to the value of the farmer's stock? And, sir, looking at these grand results, whatever may have been the necessity for increased care in keeping and recording pedigrees, there can be no cause for adding restrictions to the registry of pedigrees that must exclude such a multitude of animals of substantial merit, whose increase we are bound by every consideration of public policy to aid and encourage!

Cabbages for Stock.

Cabbage are rich in nitrogen, and for making milk or flesh are valuable. In gathering a patch of cabbage for market, there will always be more or less soft heads, which are unsaleable, but will answer for stock feeding, and where heads are cut off and sold instead of being pulled up by the roots, the leaves make good feed. It is very hard work to induce farmers to change their practices, but we think that if they would try the experiment of raising an acre or two of cabbages for stock-feeding, they would be so well pleased with the result as to make it a part of their system of farming. When cabbages are high, the larger, firmer heads could be sold, and the poorer, with the leaves, fed.

The above clipping we take from the *Rural Home* on "cabbages for stock feeding." Cabbages are very highly valued for this purpose, and in European countries are planted in large quantities. The quantity of food for stock from an acre of cabbage is greater than from almost any other vegetable. Some farmers plant acres of cabbage and feed them to horned stock and pigs, and they say they pay them better than any other crop on the farm. When given regularly to milch cows, a feed once or twice a day, they serve to increase the quantity of milk, and at the same time improve the condition of the animals. There is no more healthy food. We have known them to be used medicinally, and with good effect, as in the following instance:—A horse had taken a bad cold, and, from being neglected, there was a mucous discharge from his nostrils. He was induced to eat cooked cabbage by mixing it, at first in small portions, with his food, and afterwards increasing the quantity given. After continuing the use of it for a short time the mucous discharge ceased, and the horse was restored to health. It was so serious a case that, a veterinary surgeon having been called in, he expressed his fears that it was incipient glanders, and yet, with no medical treatment further than the feeding with cooked cabbage, he was soon as well as ever.

The only obstacle in the way of growing crops of cabbage as extensively here as in some parts of Europe is the severity of our winter, which prevents us sowing the plants in the autumn and leaving them in the plant beds through the winter months, in the open air, and transplanting them early in the spring. This obstacle, however, can be got over. The seed can be sown, as it is now, in small quantities in spring, and the plants protected till the time for transplanting.

A heavy, sandy soil, from which the water passes freely, is most suitable for the growth of cabbages. To grow them to perfection a large amount of time is required. When thus in the soil, the cabbages are free from disease, mature earlier, and form larger, closer heads. Where there is no lime in the ground it should be applied; and the ground, when dug for this crop, should be subsoiled. Cabbage planted 24 feet by 16 will grow from 12,000 to 13,000 plants per acre. The root grub, black fly and wire worms are sometimes destructive to the plants, but they are harmless if the following remedies are applied. As soon as the cabbages are planted the root grub commences at the surface of the ground and gnaws in two the stem of the plant. To guard against this, place around the plant a piece of paper two or three inches square, half of it under the surface; the grub will then leave the plant untouched. The black fly attacks the plant as soon as the seed puts forth the first leaves, and until the rough leaf is fully formed the plant cannot be safe from its ravages. To guard against it, sprinkle wood ashes, soot or bone dust over the plants while the dew is on them, or after a shower. The wire worm lives and works beneath the surface, and is very injurious. When the lower leaves of the plant turn yellow and die you may be sure the wire worm has been at work. Mix hen manure, one part with six parts of water, pour the liquid mixture from a watering pot around the root of each plant, taking care that it does not drop on the leaves. Large York, Early York, Jersey Wakefield, Oxheart, Winningstadt, Australian, Flat Drumhead and Flat Dutch are among the best varieties of cabbage.

American Meat in London.

Good market for Canadian beef necessitates beeves of good quality, improved stock, well fed, and improvements in agriculture, all depending on each other. From our last receipt of English papers, we clip the following article from the *Farmer*, London, headed as above:—The last received cargo of American meat, treated by the dry cold air process, did not reach London until Wednesday last. It was evident that the salesmen in the market were much interested in what must still be called an experiment—the attempt to contribute stocks of fresh meat for London consumption from New York. Only one opinion was expressed on Wednesday, and that was that, with respect to the meat then seen, the experiment was perfectly successful. As the quarters were stripped of their canvas wrappers, and hooked up, the people gathered about, looked and handled, and had to admit that, in quality and in clean marketable condition, the meat was equal to anything else then on sale. The consignors had prepared a small surprise for their friends here. It is intended to send carcasses weighing an average of about 800 lbs., as that is supposed to be about the best weight for this country. But with the last four carcasses, weighing an average of about 12 cwt., were sent, and the meat was exceptionally firm. The fore ribs of one of these was sent to the Lord Mayor, and Mr. Sheriff Knight also had a portion for his table. The whole weight of the American beef in the consignment was about 50 tons, and it met with a quick sale to dealers at from 4s. 4d. to 4. 8d. per stone of eight pounds. In the same "dry, cold room" of the vessel which brought this beef were the carcasses of 20 pigs, which were, like the beef, good in quality, and in first rate marketable condition. They met with a ready sale, at about 6d. per lb.

This does not refer to Canadian meat, but if the experiment be successful of shipment of fresh meat for New York, we may look on the question as solved for our meat as well as for others.

The Lung Worms of Sheep.

R. H. Saunders, of Illinois, writes to the *N. Y. Tribune* on this subject, having lost from five to eight per cent. annually for three years of his lambs from tape-worm, and sheep from one to eight years old from parasites in the lungs, the latter being the more difficult to contend with. His flock, he says, are all in excellent condition with the exception of those affected. The affected sheep show no symptoms of parasites in the bronchial tubes, but are suddenly taken with dullness and loss of appetite; the wool becomes loose, many of them pine away and die in a few weeks; others become poor. their appetites return, and they live several months. In the latter stage of the disease a watery serum appears under the root of the tongue and dysentery sets in. Upon examination after death he finds thread-worms, from two to four inches long, coiled up in bunches in the air passages of the lungs. Do these parasites, he asks, have a separate existence, and do the pastures or water become infected, or are they due to the condition of the sheep? He has observed the sheep to have been more infected when confined several years to the same pasture.

In remarks in the same paper by Prof. Jas. Law, he says that 20 years ago the lung-worms of sheep were almost unknown in England, whereas to-day there is scarcely a flock in the southern and midland counties but suffers severely from their ravages. It is a mere question of the introduction of the parasites, as their eggs and embryos will live in almost any soil, and increase in proportion to the number of systems (sheep and goats) in which they can pass the adult period of their lives. The most important points are that not only do these worms live in their embryo condition in water, soil, vegetation and fodder out of the body, but when once introduced into the system they will reproduce themselves without limit throughout the whole lifetime of the sheep without any new ingestion of worms or eggs; and, as they rarely prove fatal to old sheep, one infested animal may stock any number of fields with these destructive creatures.

TREATMENT.—Turpentine may be given in oil for the intestinal worms, and sulphur fumes inhaled for the lung parasites. The affected sheep should be put in a close building and a pinch or two of flowers of sulphur burned on a piece of paper laid on an iron shovel, the sulphur being added pinch by pinch until the air is saturated as far as can be breathed without violent irritation and coughing. The administrator should remain in the building with the sheep, and thereby avoid the risk of an over-dose. This should be kept up for half an hour, and should be repeated at least once a week. It is only partially successful, as eggs and encysted embryos still escape destruction and are ready later to start a new brood. Abundance of nourishing food, including oil-cake or dry grain, is an important element in treatment. A tonic mixture of equal parts of sulphur of iron, ginger, gentian and common salt, may be given daily at the rate of an ounce to every five sheep.

PREVENTION.—1st. No infested sheep should be allowed to leave the pasture alive. They should all be fed off and slaughtered where they are. If any loss is incurred, it ought to be met by the state, as the object is to prevent an extension of the parasite to other grounds. The propriety of this will be seen when we consider that the killing out of the lung parasites in a single animal is a long and uncertain process; that if the sheep are kept on the old pastures the worms are perpetually finding their way into the system from without, while if turned on new land they stock that with the parasites from their own lungs. 2nd. No other sheep or goats (camels nor dromedaries) should be turned out on that land for several years, nor allowed access to water which has run through it. The land may be safely pastured with horses and cattle, for they do not harbor the lung parasite of the sheep. Hogs were also supposed to be exempt, but Mr. Saunders' experience seems to throw doubt on this matter. It would be better still to plow up the ground, and subject it to a rotation of crops. 3rd. The carcasses of those dying of the affection should be deeply buried or better still, the head, throat, wind-pipe and lungs may be carefully removed and subjected to prolonged boiling. 4th. Hay roots or other aliment grown on the infested pastures should on no account be supplied to sheep or goats, stored near fodder or litter designed for them, or in any place to which sheep may afterward have access. Such would be the main elements in the absolute prevention or stamping out of this affection, but if a restriction of the increase of the parasites only is aimed at, and not their extinction, then suggestions may be obtained from the conditions above named as favoring the propagation of the worms:—1st. Let salt be eaten at will; this destroys the young worms if brought in contact with them. 2nd. Avoid turning lambs on land occupied or vacated by the old sheep. 3rd. Avoid overstocking. 4th. Drain wet land. 5th. Don't sow clover for sheep pastures. 6th. Shut out from water coming through infested pastures. 7th. Keep lambs off pastures when covered with dew. 8th. Give artificial feeding when necessary to keep up vigorous health. 9th. Fumigate frequently, both old and young, with the fumes of burning sulphur.

A series of carefully conducted experiments has shown that boiled sugar beets, tops and all, fed to hogs three times daily without the addition of other food, caused an increase in weight at the rate of two pounds per day.

The *Western Rural* says: "The noted Devon herd of William Mattoon, of Springfield, Mass., was sold at Sheriff's sale, Dec. 27. The cattle sold at very low prices. The bull, Duke of Hampden, famous as a prize-taker, brought only $55." Pity this "noted" animal and "famous prize-taker" was not sent to Kentucky or the interior of New York, where, according to published statements, many thousands of dollars might have been obtained for him.

22nd Duke of Airdrie.

The annexed drawing was made by Mr. H. Young, of this city, and is a good representation of the animal. This is one of the most valuable bulls in Canada, and is the property of Richard Gibson, Esq., London, Ont. Mr. Gibson is establishing a fine herd of the purest bred animals procurable. Mr. G. is the gentleman who was manager of the celebrated New York Mills herd. He has some stock advertised for sale in this paper.

Ontario Dairymen's Association.

NINTH ANNUAL CONVENTION.

The Ninth Annual Convention of the Ontario Dairymen's Association assembled at Ingersoll on the ninth of February. The attendance was large, although the inclement weather kept those in the immediate vicinity, who usually drive in, from attending.

Among the American gentlemen present, and who took part in the addresses, were L. B. Arnold, of Rochester; Hon. H. Lewis, of Herkimer Co.; Prof. Wetherall, of Boston; D. H. Burwell, of Little Falls; J. M. Peters, of New York; L. S. Harden, of Kentucky; also Prof. Bell, of Belleville; and W. H. Fraser, Secretary of the Ontario Advisory Board, Centennial Exhibition.

The Association was organized in 1867, and since that time it has steadily improved and increased, until the present membership is about four hundred and fifty. There was a deep interest and good feeling pervading the whole attendance.

And a large number remained over for the third day's proceedings. The managers deserve great credit for their judgment in selecting the subjects and the talent which they secured for the occasion.

Bro. Bell gave the opening address, which was good, there being some very valuable information in it. He referred to the state of the past season's markets and the state of trade in England, and strongly advised dairymen to accept the market price for their goods when they were fit to ship, let the price be what it would, and not attempt to try and regulate the price of cheese in the English market, for the trade was too extensive to be modified by their operations.

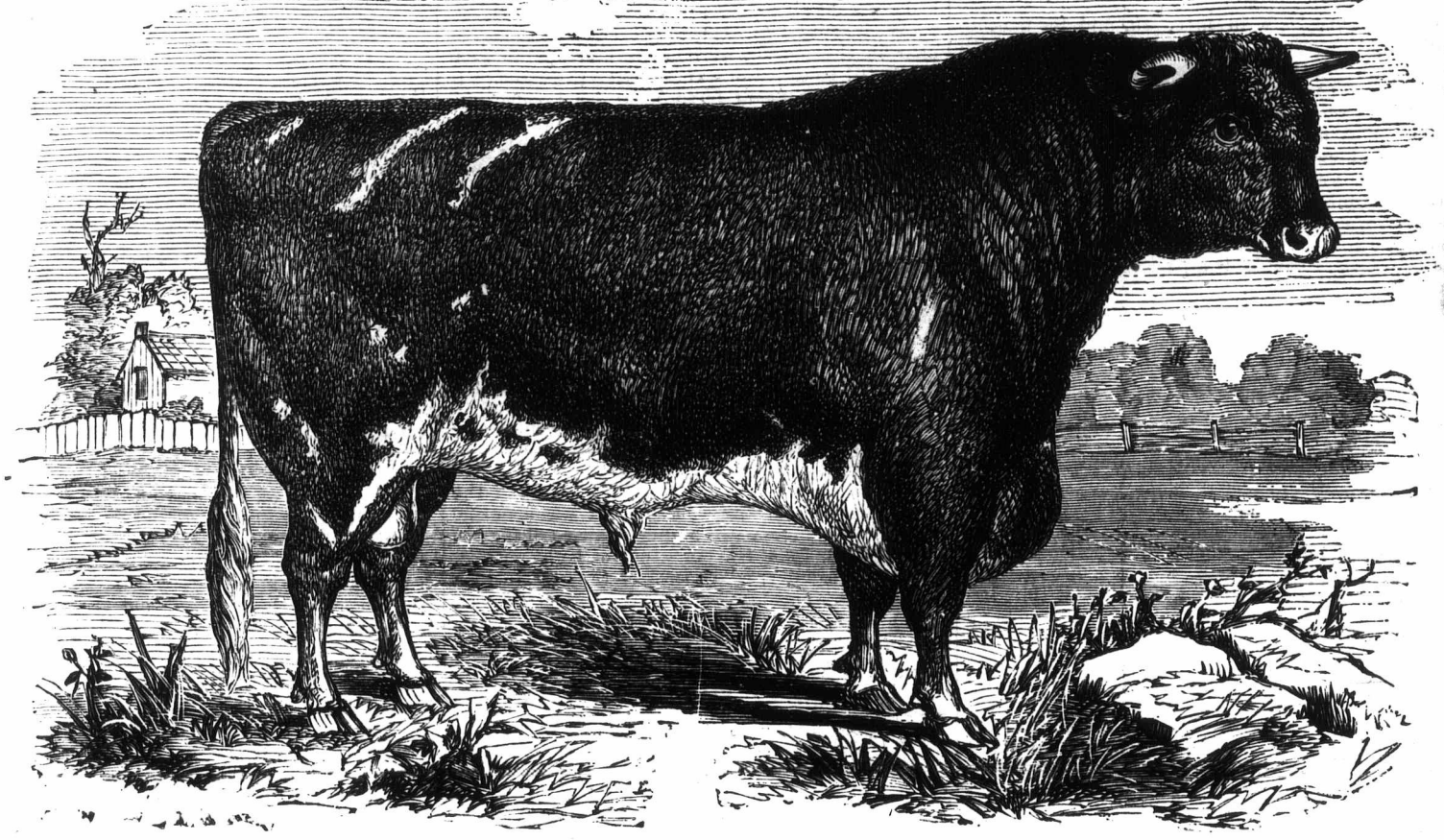
He also reviewed the make and shipments of the past season, and gave the shipments from the Province of Ontario to be 744,229 boxes, or 48,580,000 lbs., which, at an average of 10c. per pound, would amount to $4,580,000. This was 180 per cent. of an increase over the make of 1872.

Mr. W. H. Fraser addressed the convention on matters respecting the sending of dairy products to the Centennial Exhibition, explaining the advantage that would result from having a good representation of dairy goods there, as the exhibition would be visited by large numbers from the West Indies and South America, and they would be only too glad to open up a trade with Canada. Large quantities of our products go there, being first sent by us to Liverpool, and then reshipped back again by Liverpool houses to these countries. He hoped the dairymen of Ontario would do all in their power to assist the Board in making a good exhibition at Philadelphia.

The subject of butter-making was opened by Prof. Arnold reading a paper on "Gilt Edged Butter." He presented several diagrams, showing the udder of the cow and the milk veins and arteries through the same, and how the milk and butter globules were formed. Good treatment, food and breeding had much to do with the production of good milk, and hence good butter. Frightening and irregularity of milking and feeding had a most injurious effect, both on the quantity and the quality of the milk. A mixture of linseed meal, corn meal and the refuse of flouring mills was probably the best milk-producing food.

Thursday morning the convention was opened by Prof. Arnold reading a paper on "Fancy Cheese Making." He remarked that to make a nice, nutty, "salvy" cheese it must contain all the cream, as that was what contained the aroma of the cheese. This aroma was from the essential oils of vegetables and was entirely distinct from the cheesey flavor which was communicated through the rennet in curing. Hence skim milk cheese had the cheesey flavor but not the nutty. Cheese curing was simply a digestive process. He urged upon dairymen the importance of carrying milk to the factory in ventilated cans, as it was impossible for the factoryman to make a clean, nutty cheese out of poorly-ventilated, impure milk. Curing rooms in general were altogether too dry—they should be moist enough to develope mould to a certain extent. He concluded by saying there were several important points requisite in the manufacture of first-class cheese:—1st. Use nothing but the milk of well fed and healthy cows. 2nd. It should be free from all kinds of impurities. 3rd. None but clean and healthy rennet should be used. 4th. The action of the rennet should take precedence of acidity by the early removal of the curd from the whey. 5th. The curd should be cured in an even temperature, the atmosphere of which is not too dry.

Prof. Wetherell, editor of the "Boston Cultivator," then addressed the meeting on "Dairy Stock, and how to Breed It." He claimed that the shorthorns were in every respect the aristocracy of the cattle tribe, and referred to a number of cases in which large returns of butter had been made by cows of the shorthorn breed. He gave some very interesting statistics of the sales of shorthorn cattle, both in England and America, and the enormous prices that have been realized for certain strains of fancy or fashionable blood. He also compared the yield of milk from the various breeds of milking stock, giving some of the enormous yields that had been obtained from particular ones among them, thereby showing how fine milkers could be obtained by careful attention to breeding and feeding. The best authorities claimed for the shorthorns the largest returns in proportion to the expense of keeping them. He did not think they could get a good herd of cows without close breeding. The best strains of shorthorn blood, such as the Duchess and Princess families, had been obtained by close breeding. Stock, besides, should breed from none but animals of a fixed and ascertained type, bred in a line for years. An important point to be observed was the selection of bulls from herds of good milking qualities.



22ND DUKE OF AIRDRIE

In the evening, the Hon. H. Lewis delivered an address on "Dairy Cows—Their Care and Food." This address was delivered in a genial and amusing style, full of practical common sense ideas, and was listened to with the greatest attention. He said that a mean, close-fisted man should never own a cow. Grass was the natural food of the dairy cow—the perfection of cattle food. Pastures upon which cows were turned early in the spring would support more stock than those upon which they were turned later in June. Cows should be kept perfectly clean, it made them happy and healthy. They should be carded once a day, and always treated with kindness and gentleness. The law of kindness was as applicable to cows as human beings. Milking should be done at regular intervals by the clock, and they should always be milked in the same order every day.

Mr. Fanington moved a very important resolution, and one which, if carried out, would bring about some very good results. It was as follows: "That this Convention recommend that clubs be formed in every dairy centre to discuss questions that may arise in connection with the practical work of dairy manufacture, and that each club ap-

point delegates to the Annual Convention to impart the results of their experience and conclusions." If Mr. Fanington's ideas were carried out by the members of each factory forming a club and meeting once a fortnight or once a month, and then discuss all important points in the breeding, rearing and feeding of the cows, and also the proper way to care for and handle milk, laying down rules for the guidance of every one sending to the factory, we venture to say the result in that section or factory, would be as marked as they are from the "Dairymen's Association," which has done a great work in improving the make of cheese in the factories.

The Convention, on the whole, was a most interesting and instructive one, and a deep interest was taken in all the debates, and we only wish that it was within the reach of every dairyman. The general conclusion which was brought home at each debate was, that to make the dairy business a grand success the dairyman must be made to understand the importance of his keeping nothing but the best cows, feeding and caring for them properly, and then sending their milk to the factory in the best possible condition.

Typhoid Fever in Pigs.

The best of veterinary surgeons have given the diagnosis, or in other words a description of the disease among pigs known as the typhoid fever. One of the first symptoms of this fever is, that the hogs refuse their food and seem to be very thirsty. They are usually taken with a diarrhœa, the discharges being of a dirty yellow color. The external indication are red patches or spots on the skin. In some cases the redness varies from small spots to very large ones. A post-mortem examination of hogs that have died of this disease, shows the mucous membrane of the stomach to be ulcerated, the ulcers being more or less covered with thick layers of effused lymph. The top of the large intestines, as well as the ends of the small ones, are more or less ulcerated. The lungs are more or less consolidated and covered with black and blue spots, and the liver is more or less congested. An examination of the parts named, as soon as one of the hogs dies, will enable you to determine pretty closely whether it is the typhoid fever or not.

A New Food for Horses and Sheep.—A favorite and rather new kind of mash for horses is coming into use, composed of two quarts of oats, one of bran, and half a pint of flax seed. The oats are first placed in the stable bucket, over which is placed the linseed; add boiling water, then the bran, covering the mixture with an old rug, and allowing it to thus rest for five hours, then stir the mass well up. The bran absorbs, while retaining the vapor, and the linseed binds the oats and bran together; a greater quantity of flax seed would make the prepartion too oily and less relished. One feed per day is sufficient; it is easily digested and is specially adapted to young animals, adding to their volume rather than to their heighth—giving substance to the frame. Prof. Sanson reminds us not to overlook the food, in the nourishment question in connection with the amelioration of live stock. He considers oats, as so generally given to sheep, as objectionable, and approaching the unprofitable; rams generally receive one pound of oats daily, ewes half the quantity. Oats, forming an exciting food, are especially suited to rams during the season when they are to serve, but for hastening the development of young sheep, they only build up the bones, not the flesh.

Cut Feed for Horses.—An accurate farmer has furnished the *Country Gentleman* a statement of his experiment with feeding cut feed and meal to his horses, accompanied with weighing and measuring. He cuts oats and straw about an inch long with a rawhide cylinder machine, and this chopped straw is then treated with corn meal and bran mixed in about equal quantities as to weight, so that each horse has about a bushel of cut feed and three quarts of the meal and bran twice in each day. Sometimes hay is cut instead of oat straw, or both are mixed. It is found that 200 pounds per week of this mixture of corn meal and bran, added to the cut feed, will keep a pair of working horses in the best condition. This, he is satisfied from experiment, is less than two-thirds of the cost of keeping them on uncut hay and whole grain. The corn meal alone is not so good for horses as when mixed with bran. An excellent meal is made of ground oats. The fodder is cut by horse-power, on stormy or spare days, and stored away in large bins, so as to furnish always a supply on hand.

THE LYNX.

The Naturalist.

The Lynx, or Wild Cat, as it is generally called, are still quite numerous in the northern parts of the Dominion, and occasionally we hear of their capture in parts of Ontario and Quebec, from where, one would suppose, the advance of civilization had vanished them. Our engraving represents the Canadian Lynx, the largest of the American species. It is about as large as a setter dog, or, 3 feet long to the base of the tail, the latter being 6 inches to the end of the hair. The head is short and arched; jaws short; ears short and erect; fore feet with five toes, and hind feet with four, with retractile nails; tail as long as or shorter than the head; body short and stout. The triangular ears have an erect tuft of coarse, black hairs; the general color is gray above with darker clouds, and lighter beneath; the feet very large, with naked pads underneath, densely furred in winter, and then making a tract in the snow nine inches long and almost as large as that of a black bear; the eyes large, nose obtuse, ears with a narrow margin of black, whiskers stiff and chiefly white; in summer the fur is shorter and more rufous. This Lynx lives in the deepest woods, rarely approaching the habitations of man, and is most abundant in the regions north of the great lakes, its thick fur enabling it to resist the greatest cold. It is very strong and active, an excellent climber and a good swimmer Its flesh is eaten by Indians and hungry trappers, and its fur is prized for robes, muffs, collars, &c.; it is most often caught in steel traps, which it readily enters. It feeds principally on grouse and birds of similar size, and other northern rodents. When hard pressed it will attack as large an animal as a deer, and sometimes prowls about the pioneer's cabin in search of lambs, pigs and poultry, and annoy the early settlers considerably, to which many Canadians can bear testimony.

Warts on Cows Teats.—Warts at the end of the teat are occasionally found, and are a great annoyance, not only obstructing the milk, but from their soreness causing the cow to become fidgety and uneasy while milked. In such cases they must be removed, either by the knife or by a ligature of fine silk tied round it; the latter is the preferable mode, as warts when sloughed off, are not so liable to return as when excised off with the knife.

Frozen Milk.—A chunck of milk, "solidified by the Hooker process," and weighing about one hundred pounds, and which "has been exposed to the action of the air for four years and three months," was lately shown at the rooms of the Society of Art in London, and the *Agricultural Gazette* of that city says: "Its quality was still so excellent that in a few minutes it was resolved by churning into good fresh butter.

Meat is much better for family use when at least one week old in cold weather. The English method of keeping meat for some time has great merit. Experts say hang up a quarter of meat with the cut end up, being the reverse of the usual way, by the leg, and the juice will remain in the meat, and not run to the cut and dry up by evaporation.—*College Gardener.*

Reports and careful estimates from all the hog districts of the west confirm our previous statement that the hog crop is much below that of last season, and good prices may therefore be expected. *Indiana Farmer.*

Season and Crop Report.

February sixth up to the present time the winter has been the mildest and most changeable ever know by the oldest inhabitant. We have had very little snow; very little lumbering or teaming of any kind has been done. A considerable portion of last year's crop remains on the farmers' hands, principally on account of bad roads in back townships. Much damage has been done to the clover. A great deal has been destroyed by freezing and thawing. The winter wheat we hear is injured in some localities—on our farm a field badly exposed does not appear to have lost a plant, but the color of the blade is getting rather brown.

Stock have thriven well this winter, as the weather has been generally dry. Some dairymen anticipate lower prices, because buyers have lost between one and two thousand dollars this year, but we do not consider dairymen should relax their operations, as the demand will be as great as ever, though buyers may act with more caution. Heavy cattle and heavy horses will pay better than light ones. Shipping wheat to Europe will increase. Clover has been in good demand for shipping. A great deal will be required to re-seed in spring.

Agriculture.

Mingling the Manure of Cattle and Horses.

There are few practical farmers who are not aware of the benefits derived from the different manures made in the barn yard, but it is well to recall betimes the very first principles of the different branches of agriculture. All farmers have not the knowledge, of which the best teacher is experience, and it may not be amiss to jog the memory of others on what they know by theory but may not have reduced to practice. Among our clippings from our contemporaries the following on the subject is pertinent and seasonable:—

The accumulations of the horse stables, and also of the stables of cows and other neat cattle, should always be mingled together in the yard or compost heap. Hence stables should open into yards over which the litter from the horses and cows should be regularly spread every day. By this means alone will a good result be obtained. The respective merits of boxes and foldyards for fattening cattle in a great measure depend upon the quality of dung they turn out. The box is economical in the matter of straw, and will be esteemed for this reason in suburban districts. It is also favorable for the manufacture of good manure, as being under cover, the liquor is wetted by the droppings of the animals only. The byre, says the *Agricultural Gazette*, is still more economical of straw, but it is not favorable to the manufacture of good manure, owing to the animals being tied up. Litter from byres ought to be thrown out into courts and trodden down with young stock. Foldyards require much litter, as they are always more or less open, and are for this reason preferred in rural districts, where the value of straw is not yet felt. Excellent manure may be manufactured in small troughed folds, with a considerable proportion of shedding. Cattle will do well in any of these forms of accommodation, but if tied up in byes it will be humane, as well as profitable, to have them brushed and curry-combed daily. It must be remembered that animals thus confined cannot lick or rub themselves, and that they are deprived of the cooling effects of air and rain. The skin under these circumstances becomes irritable, and especially where, as is often the case in byres, dirt adheres to the animal. Brushing and clensing the skin and attention to the state of the feet cannot be too strongly enforced.

Orchard Grass.

The high opinion we entertain of orchard grass for soiling, hay and pasture, is known to our readers; but though we have ere now spoken of its value to the farmer and of its culture, it may be well to know what is said of it by other agricultural writers. The following we clip from the *Country Gentleman*:—

Two bushels of seed to the acre (14 pounds to the bushel) is not too much; but 20 pounds of nice clean seed will insure a good set. To sow less than 20 pounds is "penny wise and pound foolish," for less than 20 pounds will not produce a perfect sod, and all the ground not sodded over is, of course, lost. I believe August to be the best time for sowing orchard grass. I sowed this year a small lot in August to rye and orchard grass. About the 25th of next April I shall mow the rye, which will make a fine lot of feed, and by mowing so early it will not interfere with the grass, and will protect it during the winter. I believe this to be even better than sowing the grass alone. Most farmers wish to sow grass seed with wheat or oats; if orchard grass is sown with either of these, it should be sown in March. I soil all my stock, and consider orchard grass the best of all grasses for soiling, for the following reasons: its earliness, lateness, rapidity of growth and the preference stock have for it. All these qualities combined make it the best of all grasses for soiling. It does not make as much feed as corn fodder, but it does not require the work that corn fodder does, and you are obliged to manure your corn fodder land to keep it up, while orchard grass improves land every year. Stock never tire of the grass as they do of the fodder. If sown about the first of March, it is not necessary to harrow the seed in, although a light harrowing will do no harm.

When to Sow Clover.

Harris, of the *Agriculturist*, writes as follows on this subject:—

My own practice is to harrow the wheat three times in the spring. We go over the wheat both ways with the harrow, and then sow the clover seed and follow with the harrow to cover the seed. If the ground is very hard, the harrows do not break up the crust sufficiently to afford a good covering for the seed, and if dry weather follows we have a poor catch on these hard spots. I have my doubts as to which is the better plan, but am inclined to think that so far as securing a good catch of timothy and clover is concerned, it is better to give up harrowing winter wheat in the spring and to sow timothy seed in the fall and clover seed very early in the spring. It depends very much on the soil and season. The harrowing helps the wheat and kills a good many weeds, and on sandy loam the harrow leaves a good seed bed for the clover, and if we are favored with a few showers, we are pretty sure of a good catch of clover.

Last year all my clover failed. My wheat also is a poor crop. And I do not feel like giving advice. I am enjoying a short spell of humility. I have to whistle and keep working. I try to look at the bright side. I have thirty two acres of capital barley seeded down with clover and timothy, which seems to be a good catch. But my clover last fall was just as promising, and yet it was all winter-killed except along the fences and dead furrows, where the snow protected it. I do not like to own it even to myself, but I think I weakened the young clover plants by letting my sheep and pigs pasture it too close last fall. I shall at any rate keep them out of my clover this fall.

I had an old timothy meadow which I pastured last fall pretty close. This year the hay was not over half a ton per acre. I had another meadow, which, owing to the fact that we sowed part of the field to rye, we could not pasture after the first of September. The grass on this meadow was as thick and heavy as it could grow. We got more hay from one acre of this meadow than from four acres of the other. I have always thought that it did not hurt meadows to pasture them in the fall, but last winter was so unusually cold and the soil so dry, with little or no snow to cover it, that a slight coat of grass was of great value as a protection from the severe cold winds, and also probably proved useful as a mulch during the dry weather of spring.

I have also twenty-two acres of good rye seeded down last fall with timothy and the dryer portions sown also with clover in the spring. The field has a cheerful look. Three or four acres, where I manured heavily for mangolds four years ago, is a particularly pleasant spot to visit during a fit of the blues. The rye is six feet high and as stout as it can grow. It is the cheapest and most profitable crop I have raised for years. It was a rough piece of low land which we sowed with oats two years ago and seeded down. But the seed did not take well, and so I concluded to plow it up and seed it down again early in September with timothy alone. But after the field was all prepared, the Deacon persuaded me to sow rye and seed down with it. I am glad I took his advice, though I am not sure but I should have done better to have sown timothy alone.

A Farm of 25 Acres.

Mr. B. F. Farnham, of Bucksport, Me., has a small farm of 25 acres, five in tillage and the rest in pasture. He cut, the present season, eight tons of good hay, and raised from eighty-nine rods of land, 2,500 lbs. of squash, 80 bushels Mangold Wurtzel beets, 40 bushels carrots, 40 bushels potatoes, 5 bushels beans, 60 bushels rutabago turnips, besides sweet corn, pole beans, green peas, &c., for summer family use.

The first ten rods was planted with squash, hills 8 feet apart, made broad and deep with the spade, and potatoes drilled between the hills, from which he raised 2,500 lbs. squash, and 15 bushels potatoes. Twenty rods in Wurtzel beats yielded 80 bushels; nine rods in carrots, 40 bushels; sixteen rods in potatoes, 25 bushels; twenty rods in turnips, 60 bushels; fourteen rods in beans, 5 bushels; seed planted, 6 quarts. No fertilizers were used except stable manure, and he believes we should make our own fertilizers in our own stables. He has used phosphates in years past by way of experimenting, but believes good hard wood ashes as valuable as the phosphates we generally purchase.

After the ground is prepared for the seed, about all the work and weeding is done with Harrington's patent seed sower and hand cultivator, of which Mr. Farnham speaks in the highest terms. After harvest, his land was thoroughly plowed and cultivated and laid down to grass in November. Mr. Farnham keeps two cows, from which he has sold, the present season, $50 worth of milk, two calves for $4, and made 240 lbs. butter, besides what milk and cream has been used in his family of five, and they are "good livers." He believes cows do quite as well in the winter on good hay and roots as on oil cake, cotton seed meal or shorts, which no farmer can afford to buy—we can raise roots much the cheapest. In feeding, Mr. Farnham makes a change in roots each day, feeding turnips, wurtzels, and carrots alternately.

It must be remembered two calves were kept to the age of four weeks, and 1,200 qts. of milk sold, besides what was used in the family, which would take the milk of one cow at least. He has made two cords of excellent manure from his pig, which was applied to the land before laying it down to grass in November.—*Rural New Yorker.*

Old Wheat for Seed.

Several years ago, when I lived in Saline county Mo., my attention was called to an article in the *Rural World*, which set forth that the previous years' growth of wheat, was better for seed than that grown the season of sowing. Also, that it would mature sooner and produce several bushels on an average more to the acre. I have given it a trial and found it to be the case. I consider old wheat for sowing worth one-third more per bushel than new wheat. Particularly so this season, as we had so much rain during the period of harvesting.

Wheat, in order to produce a healthy plant, should be sound. This season the wheat, most of it, has been wet and then dry several times, and the vitality of the chit, which has thus been frequently swollen and shrunken, has been seriously impaired. In purchasing old wheat, be careful to ascertain whether it has been in large bulk or not. It would be a good plan to test a sample, say a pint of the seed, and see what proportion of the seed fails to sprout.

If the seed is perfectly sound and rains are frequent, when the time comes for sowing, I think one bushel of seed will be enough to the acre. I intend to experiment some in this direction. I take particular pains to sow only the largest and plumpest grains, and run my wheat through the fan—turned rapidly so that only the heaviest kernels work down into the discharging spout. I use a drill, which gives the wheat plants ample room in which to tiller and spread. Where my fields are exposed, say to a strong southwest wind during the winter, I run my drill from the southeast to the northwest regardless of the fences which surround the field. This is a little more trouble, but it pays, for then the dirt on the little ridges between the drill rows, is blown toward and upon the roots of the wheat plants.

A word about the management of wheat in the shock in wet seasons like the present one. After the wheat is shocked and capped, no matter if it does begin to grow, let it alone and not be continually spreading it in the sun to dry. My experience is, if wheat is let alone, there will be a greater proportion of sound wheat when you come to thresh it, than there will be if you keep all the time to work at it. I think my experience this season has convinced some of my neighbors of the correctness of my practice. I hope other wheat growers will send their views for publication—it is by a comparison of the views of practical farmers that progress can be made.—*E. W. H., in Rural World.*

STRAW AND HAY.—Good clean straw, carefully stacked, is supposed to represent a value, in comparison with the best meadow hay, of three to one. That is, an animal must eat three pounds of straw to get the same subsistence as would be afforded by one pound of hay. Now, since it is required that cattle must consume all the hay they can eat to bring them through the winter in the same condition they were in at its commencement, it is evident that, if wintered largely on straw, they must subsist largely upon the fat and flesh previously stored up; but, if fed with corn or other concentrated food, the case becomes widely different, since it acts as a devisor to the other food, and at the same time furnishes whatever nutriment it may possess to the animal.

Prof. Wilson on Bone as a Fertilizer.

Each plant requires for its full and complete development not only a proper preparation of the soil for the seed, but the presence of the mineral or earthy matter, which enters into its structure in sufficient quantity, otherwise the agriculturist has no reward for his labor, time and capital.

From every spear of grass, from every grain of corn, the animal derives the mineral portion of its structure; the excess necessary for continuance of life is again voided and returns to the soil, or, when the final dissolution takes place, each, through the process of decay, is resolved into its elementary or simplest form to be again re-assimilated in the other.

Experience has taught you all that by the continuous cropping of your soils without the application of the excrement of animals in some form, they become rapidly exhausted and cease to yield, yet the land may apparently have the same appearance as when in its most fertile condition.

These remarks are particularly applicable to the agriculturist of this country. Vast tracts of land but sparsely inhabited, in comparison with European countries, are kept in the highest cultivation; large crops are harvested far beyond home consumption; they are transported to our seaports, and sent in ships to foreign countries to feed millions of the old world. Each crop removes a certain per centage of fertility from the soil, and if this fertility, as it were, was not replenished, our land would be a barren waste. Every bushel of wheat, of corn, of oats, each ton of hay the farmer sells contains a certain amount of mineral wealth of his land; he is actually selling his land in another form—its fertility. The country containing people or cattle consuming this grain and hay are not only sustaining life but replenishing the fertility of their soils.

The mineral constituents or plant food proper is generally distributed over the surface of the earth, although in limited quantities. Two important ones—the phosphate and potash—are rapidly exhausted. These must necessarily be returned after each crop is grown, or the land soon becomes barren; less so, however, in grass producing districts, from the fact that grass roots penetrate to a great depth, absorbing their food ten or fifteen feet below the surface, and by the fine capillary tubes or sap cells is brought to the surface, held in solution in the sap, there to develope the weed.—Hence, very poor lands are, in a great measure, regenerated if allowed to remain in grass during many seasons. On the other hand cereals and roots grow and mature rapidly, and must have their food on or near the surface, properly prepared, and in sufficient quantities for their complete development. This character of food being immovable, has to be returned to the soil by the agriculturist, while the movable carbonic acid, nitrogen and ammonia compounds are being returned through the medium of the atmosphere, according to the immutable laws of reproduction, for the continuance of life in both the animal vegetable kingdom.

Phosphoric acid is an important constituent of all plants. England imports annually from 250,000 to 3,000,000 tons of raw material, at the cost of millions of dollars, besides taking care to save and return to the soil all the excrements, human and animal, produced not only from the food she cultivates, but added to it, the large quantities of grain imported from the United States and other countries. Not one atom of material, valuable as a manure, is allowed to go to waste there. A contrast to husbandry here.

Bones are the most available source of phosphoric acid. Every farmer has it within his power to save this valuable fertilizer, provided he exercises a little care, and has the importance of doing so impressed upon his mind. As it is, thousands of tons go to waste in this country, while our lands are becoming rapidly exhausted. Manufacturers of fertilizers have to resort to insoluble minerals and fossils for their source of supply, and to convert them into an asimable condition as plant food, through the agency of chemicals and expensive machinery.

It would be well at this point to notice the difference in the physical properties of substances having the same chemical composition. For instance, the mineral apatite, the Charleston phosphate rock and bones have the same combination of phosphoric acid and lime; the first two are insoluble in the soil; even if ground to an impalpable powder, and applied to the land, would remain inert for two years, while the bone placed under the same condition would be immediately available as plant food. Why this state of cohesion no one has been able to solve, yet you have no more familiar illustrations of the difference in physical structure before you every day. Take, for instance, chalk and marble, they have the same chemical composition; the one is hard and compact, the other soft, and disintegrated by the slightest touch.

Farmers, individually and collectively, should give the strictest attention to the use of bone manure—an important source of wealth to them—for the improvement and continuance of the fertility of the land. To this end the strictest care should be given to having them properly and finely ground under their immediate supervision, as a guarantee of obtaining them free from adulteration. In the indiscriminate collection of bones, especially those obtained directly from slaughter houses and butchers in our large cities, quantities of fat still adhere to them. This should be previously removed, the fat having no agricultural value, and, unless extracted, the bones are deteriorated, being so completely impregnated that, no matter how finely ground, they will resist the disintegrating action of the moisture and saline compounds found in the soil, for a number of years.

Bones contain, on an average, 45 per cent. phosphoric acid, and one per cent. of ammonia.—*Abridged from the Michigan Farmer.*

Seed Per Acre and Seasons for Sowing.

The table annexed, as amended by us, with time for sowing and quantity per acre, will be found valuable for reference. The letter "a" signifies the month when they may be sown:

Wght per bushel.	SEED	March.	April.	May.	June.	July.	August.	September.	October.	Quantity per acre.
60	Red Clover	a	a	..	..	..	..	..	..	8 to 10 lb.
45	Timothy	a	a	..	..	..	a	a	..	¼ to ½ bushel
14	Red Top	..	a	a	..	..	a	a	..	1 to 2 bushels
14	Kentucky Bl. Grass	..	a	a	..	a	a	..	..	.....
50	Hungarian Grass	..	..	a	a	..	..	..	..	½ to ¾ bushels
50	Millet	..	..	a	a	..	..	..	..	¼ to ¾ bushels
45	Sorghum	..	..	a	a	..	..	..	..	2 qts.
56	Flax Seed	..	a	a	a	..	..	..	..	1 to 3 bushels
56	Corn	..	a	a	a	..	..	..	..	4 to 6 qts.
56	Rye	a	a	..	..	..	..	a	a	1 to 2 bushels
60	Wheat	a	a	..	..	..	a	a	..	1 to 2 bushels
48	Barley	a	a	a	..	..	a	..	..	1½ to 2 bush.
32	Oats	a	a	a	..	..	..	..	..	2 to 3 bushels
52	Buckwheat	..	..	..	a	a	..	..	..	½ to ¾ bushels
60	Potatoes	a	a	a	a	a	..	..	..	10 to 15 bush.
60	White Beans	..	..	a	a	..	..	..	..	½ to 1 bushel
60	Peas	a	a	..	..	..	..	..	..	1½ to 2½ bush

Below we give the weights per bushel of other seeds and products, which will be found convenient for reference:

	Weight per bush.		Weight per bush.
Bran	20	Fine Salt	55
Castor Beans	46	Hemp Seed	44
Coasse Salt	50	Malt	38
Corn Meal	48	Onions	57
Dried App'es	24	Plastering Hair	8
Dried Peaches	33	Stone Coal	80
Ear Corn	70	Unslacken Lime	80

It should be remarked here that in forming a table such as this the range of season for sowing can only be given. Thus the larger quantity of flax should be sown on very rich land; and, also, where the lint for fine weaving is wanted. If a crop of seed is wanted, the smaller quantity of Hungarian and millet should be sown on clean land; or, better, drilled in. So, potatoes should not be planted in June, except very early maturing sorts; and our experience is that these are surer planted in March or April. So, also, the quantity of peas given is for sowing broadcast; if drilled from one to one and a half bushels only will be required.

Again, the greater number of pounds or bushels per acre are used only upon very rich land. And the earlier all spring crops not affected by frost are sown, the better as a rule will be the yield. This rule will apply to any crop in the West, for the earlier we seasonably sow any given crop here, the better will be the return; for instance, it is better to plant any variety of potato in March or April than in May, but with turnips and buckwheat, the later they are sown—so they will mature—the better, for both of these require cool weather to mature.—*W. Farm Journal.*

Plaster and Salt.

A farmer was applying a little plaster of Paris to corn in the hill after the plants were up, but before he had finished he was driven from the field by a shower of rain. After the shower he returned and finished the piece, but those rows which received the dressing before the shower were very much benefited by the application, while the others were not.

Is salt manure? If the testimony of distinguished agriculturists, both English and American, is of any weight, then common salt used as a manure is not sufficiently appreciated.

Sir John Sinclair, whose practical knowledge and sound judgment are well known, wrote at the commencement of the present century as follows:

"It is proved by a variety of experiments that sea salt properly applied acts as a manure." "It is particularly useful when mixed with a dung hill or strewed over farmyard manures, at the time when they are carried out into the field." It increases the crop of mangolds two or three tons per acre.

Mr. John Johnston, the celebrated Scotch farmer of western New York, says, in regard to an experiment with salt: "The line of demarcation between the salted and the unsalted portion is very distinct throughout the whole length of the field; it is some four or five days earlier."

Other instances might be given to prove the benefit of using salt, either on mowing or pasture lots, and it is the testimony of others that it is especially adapted to wheat crops, giving a brighter and stiffer straw and heavier grain. The quantity recommended to the acre, both in England and this country, varies from three to twenty bushels.

CLOVER-SICK SOIL.—In treating of "clover-sick soil," Mr. Bruce, an Aberdeenshire farmer, states that in some districts of Scotland the clover plant dies out after taking root. Having noticed in several fields where this occurred that there was a good growth of plants near the gate, and head, and end ridges, which was much trodden upon, Mr. Bruce procured a heavy roller and rolled the field twice before putting in the grass seeds. The experiment was perfectly successful, a full plant of clover being the result, although the field had for years before shown signs of sickness. The farmer got a roller which weighed fifteen cwt., and rolled his fields, leaving in one field a ridge which was not rolled, in order to prove the efficacy of the operation. The result was that, while there is abundance of clover where the soil was rolled, on the ridge that was left unrolled scarcely a plant is to be seen.

REMOVING STUMPS.—A friend asks us what can be done to get rid of stumps in fields—whether crude oil would not cause the stumps to burn readily. In our experience we have found it preferable to remove stumps with machines made for that purpose, and burn them afterwards, if desired. It is slow work burning isolated stumps in a field, and the same amount of time spent in uprooting them will be much more effective. A good team—horses or oxen—with a stump machine, will clear quite a space of ground in a day, and if the ground be stoney, the work may be further progressed by filling the holes where the stumps came from with stones to within eighteen inches or two feet of the surface. Crude oil is not very inflammable, and, unless used in large quantities, its only effect is to clear the surface of the stump and make it last longer than it otherwise would.—*Rural New Yorker.*

FALL OAT THRESHING.—Last week Mr. Alex. Graham threshed for John Campbell, lot 22, con. 8, Caradoc, 3,300 bushels of oats in 24 hours' work. The machine was fed by D. McKellar, "Pompey." The work is so well done that the oats are sufficiently clean for marketing. The oats are of the Norway variety, and are for sale for seed.

"A proposal is now before the Prussian Minister of Agriculture to award prizes for well-managed small farms, as is the custom in East Flanders, as a means of encouraging high farming among small proprietors." This is just what ought to be proposed here, among our country societies, and we hope that it will, with other reforms that are indispensably necessary to make these societies valuable to the general interests of agriculture.

I have seen the application of a liberal dressing of muck give that part of a field on which it was applied a decided appearance of fertility over the rest of it thirty years after the application was made.—*N. E. Farmer.*

Garden Orchard and Forest.

How to Promote the Hardiness of Plants.

In the following article from a correspondent of the *N. Y. Tribune*, he justly remarks that all that we can do to promote the hardiness of plants is, by all needful care, to induce perfect health. The numerous instances of valuable trees having been killed by frost, throughout the whole country, the last few years, makes this article on the effect of frost unusually interesting.

FREEZING AND THAWING HARDY PLANTS.

Nordmann's Silver Fir was discovered on the summit of the Adshar Mountains, 6,000 feet above the sea. Thuiopsis Borealis—Cupressus Nutkaensis of some authorities—is found along the north-west coast of North America. Perfectly hardy in those situations, it may be supposed that they would prove hardy with us, if the endurance of cold alone constitutes hardiness. Both, however are sometimes injured, sometimes killed by our winters. Evidently neither freezing nor intense cold is the cause of this injury, since their native habitats are colder than the localities to which they have been introduced. The same may be said of other evergreens, and many deciduous shrubs and trees might be added. It is not uncommon that, during the mildest of our winters, those shrubs and trees—natives of what section soever—that we have grown to look upon as among our hardiest, are those which have suffered most. We have often noticed that, as a rule, it is the southerly portion of such plants that suffer most—we speak now of evergreens—while the northerly portion remains quite fresh and sound. Dead patches of bark, and sometimes corresponding sections of the wood underneath u on the south side of the trunks of fruit trees and willows may frequently be seen in the spring. Many kinds of hardy bulbs, such as tulips and hyacinths, if stored in an ice house and preserved frozen until the time of spring planting, will grow and bloom the same as if they had been planted in the fall, while, if permitted to freeze and thaw they will speedily rot and die. Of two heaps of boggy earth—the one exposed, the other concealed from the sun—the former will be found, in the spring, ready to crumble to pieces, the latter comparatively intact. Water percolating through the fissures of the hardest rocks will, after repeated freezings, split them asunder. It is very evident that many plants are not injured in the least by being frozen alone. Unlike a rock, their tissues are susceptible of distension without rupture. But they are not susceptible of unlimited distention. A single instance of freezing swells the wood-cell just in the proportion that the bulk of frozen water is greater than that of liquid water, and if, after thawing, the cell has time to contract to its natural caliber before its contents again freeze, no injury is wrought. But if a tree or shrub is frozen this morning—thawed to-morrow—frozen again the next day, and so on, the cells have not time to resume their normal dimensions. Partial vacuums induce by endosmatic action a flow of sap, that fills the enlarged tissue, which, when again frozen, is again further distended until rupture *must* result.

It is in this view that the value of outer bark is apparent. One of the best of non-conductors, by its porous, corky structure, we are indebted to it that the liber and alburnum are not lacerated by excesses of heat and cold, even of brief duration. Thus we see that late shoots of last season are the first to suffer. While their substance is more elastic than older wood, for which reason, taken alone, it should better endure the effects of frost and sunshine—its thin skin renders it sensitive to every change. The newly-formed cellular tissues are still green and soft, and, gorged with sap that has not had time to thicken and harden their walls by concentration, are the more readily frozen and thawed by extremes of temperature. There is seldom a winter in this latitude but what the roots, as well as the stems of plants, are frozen through and through. Though roots are far more tender than the stem, it often occurs that while the latter is killed by the winter the former are uninjured. But while the stems of plants are frozen and thawed many times during the winter, it is seldom or comparatively seldom, that this alternation occurs with the roots. The earth, when once well frozen in the fall, usually remains so until spring, and, the frozen roots, though still affected by increased cold, are not exposed to a temperature above freezing. We place manure, or litter of any kind, about the roots of trees, not for the purpose "of keeping them warm," but rather for the purpose of keeping them cold; and it will prove more efficacious, perhaps, if the protecting material be applied not until the ground has become well frozen, or not, indeed, until warm weather threatens to thaw the frozen earth. The temperature of the earth is not changed by external covering, which merely offers an obstacle to the communication of a different temperature. Flannel blankets about ice interpose a non-conducting substance that tends to exclude the warmer air without and to confine the colder within. Snow, except that it furnishes water to the earth, is in no way valuable, only as it preserves the existing temperature and prevents the disruptive action of alternate freezing and thawing upon all roots and herbage beneath it. It may often be seen that shrubs and trees have passed through an exceptionally cold winter without injury, that are harmed or killed by the vicissitudes of spring. They defied the steady cold, but they succumbed to the alternation of winter mornings and evenings and summer middays.

Plants vary in their powers of withstanding cold the same as animals—and cold of itself suffices to account for the death of shrubs and trees which are not hardy, as we term it, in the situations to which they have been removed. The evidences of a constitutional adaptation in some plants to various climates, though obscure in some parts, is apparent enough in others. In the horse-chestnut, Lilac, Magnolia, Grape vine, Beech and Hickory for example, the terminal bud is enveloped by downy or gummy scales, that serve to mitigate the effects of sudden changes upon the tender leaves within, though ineffectual against a prolonged uniform temperature. They are not protected against being frozen but against being frozen and thawed in quick succession. We need not hope, by any care or by any attempt at acclimatization, to make a tender plant hardy—or, in other words, to change its organization by gradual steps, so that it shall endure in an uncongenial climate more than it could have endured in its native home. A seedling apple, Juniper or Hemlock, will prove no hardier if reared in Maine, than if reared in Florida. All that we can do to promote the hardiness of plants is, by all needful care, to induce perfect health. It seems absurd to state that if two men were exposed to cold that neither can long endure, the less healthy man will first freeze to death. And yet how often is it deemed strange that, of two trees of the same variety, one of which is noticeably more vigorous than the other, the latter should be killed by a severe winter, the other in no way injured! If alternate freezing and thawing will account for the partial or total destruction of trees that thrive in colder climates than ours, it will account for the fact that our mildest winters are sometimes the most fatal to those hardy trees and shrubs which we know have passed through our most rugged winters in safety. For the rest, plants are so constituted that, like all other living things, they can endure just so much cold and no more; and this ascertained in individual instances, we have but to select them accordingly. If we would provide against the effects of freezing and thawing upon the hardy plants to which we have referred, a northern exposure suggests itself. If planted in southern exposures, a temporary shelter against the winter sun, leaving the north quite open, would perhaps answer the same purpose.—E.T.C.

Dwarf Apples.

On my *Pommier de Paradis* stock, apples may be planted eighteen inches apart each way, and when they begin to touch each other may have each alternate tree removed, leaving the plantation at three feet apart each way. At this distance they will do to stand many years. I had nearly 1,000 sorts in the season of 1868 in fruit, many of them bearing six to twelve apples, the trees being twelve inches by eighteen inches apart, and most of them only one foot to one and a half in height. The great thing with this stock is that all the large apples, which are generally strong growers and slow bearers, bear abundantly in two or three years, and produce fine, handsome fruit, generally better flavored than when from the Crab or Doucin stock. The management of these trees is very easy and simple—that is, if any of them should have an inclination to grow too luxuriant, merely lift them out of the ground, *tread down the place firmly*, and then place the tree on the part so hardened, covering its roots with a few inches of the surrounding soil, thus raising the tree on a little mound, which will prevent the roots striking too deep into the cold crude soil, and, as a consequence, the work will be well ripened and a fruitful tree be formed. Little pruning is necessary; a few over-luxuriant shoots pinched back slightly once in summer, and a neat and th n regulation of its branches in autumn and winter is all that is required. Avoid too much summer pinching and pruning, otherwise your trees will become ugly little stunted scrubs, with their skins so tight that the life is strangled in its ascent, and deformed abortions will be all you will have. Be generous to your trees; do not overpinch, overprune or overload them, and they will repay you with interest.—*Scott's Orchardist.*

Sulphur for Grape Mildew.

W. J. Flagg, Freestone, Sciota Co., Ohio, recently stated at the meeting of the Ohio Grape Growers' Association, the following reasons why those who have tried sulphur as a remedy for mildew on grapes have failed, without their failures proving anything against the value of the remedy when properly applied.

1st. The applications may not have been timely or sufficiently frequent. They should be made either immediately upon the appearance of the disease, or before it has been able to work serious damage, or, if such appearance cannot be early enough detected, then there should be a sulphuring every twenty days, beginning as early as any mildew has ever been observed to show itself on the particular vines to be treated, and continued till the grapes begin to change color. However much sulphur one may blow upon his vines, if he allows the fungus to get the start of him by a few days, there will be a failure of the experiment.

2nd. The sulphuring may have been carelessly done, or, being well done, rains may have washed off the powder before it had time to work its proper effect.

3rd. After properly dosing his plants, the vine-dresser may have been frightened by the appearance of "black rot" (which sulphur will not cure), and confounding that with the fungus disease, for which alone sulphur is prescribed, abandons the remedy in despair. That is not the malady that some call the *oidium*, which, however named, is, I insist, perfectly curable with sulphur; if we can control it, the black rot will scarcely hinder our progress. And yet, with certain varieties, on low lands, on compact and undrained grounds, badly aired and subject to fogs, the black rot alone, in a very wet season, may nearly destroy the entire crop.

Grape Rot.

The Alton, Ill., Hort. Society have been discussing this subject. Chas. V. Riley, State Entomologist of Missouri, thinks the rot in the berry may be attributed to some constituti nal defect in the vine. Mr. Starr, of Alton, does not believe it due to any constitutional defect in the vine, nor to the mode of preparing the soil, as some believe. J. M. Jordan, of St. Louis, a successful cultivator, said:

"I have lost all confidence in the statements of our scientific men. I have seen grapes grow where our scientific men say they can't be grown. I do not disapprove of scientific investigation, but I do disapprove of stating as facts what are merely suppositions. I have grapes growing this year where you could not pick a handful of rotten grapes. I believe I can take any vine and make it produce rotten grapes, or I can make it produce sound fruit, free from rot. Close pinching is the main thing. Keep the foliage in check. The soil should be well underdrained, as I don't think one can grow fruit or vegetables with the feet of the plants in water. The rot this year is extensive, but on underdrained soil, where a careful system of close pinching has been followed, we find the grape nearly exempt, as compared with those vineyards where a different system has been followed."

Pots of Forced Flowers.

The *Garden* says:—Among the prettiest things we have ever seen in the London flower market are small pots containing growing plants of forced lillies of the valley, and a few crimson tulips, growing with a healty little tuft of maiden hair ferns. Again the same journal says:—Among the most beautiful of all pot plants now brought to Covent Garden market is the little Siberian quill, with drooping flowers of the clearest and most vivid blue color imaginable. Nothing could be prettier than the pots of the lillies of the valley and tender young ferns, neatly but not too regularly margined with this beautiful little Alpine bulb.

Kerosene for Borers.

The destruction wrought by borers among our shade and fruit trees becomes more wide spread every year, and every apparently successful attempt to check their ravages will be heard of with pleasure by all, for all have an interest in the preservation of the trees that shade our homes in town and country; and there are none who do not prize the mellow or delicious *magnum bonum* or Duchess Dangouleme, beautiful and luscious, fresh plucked from the trees. The following letter to the *Prairie Farmer* tells us of a successful application of kerosene for the preservation of trees. We would like to hear of further experiments for the purpose.

"The borers have been troubling us here for several years, more particularly near Chicago, where the maples have been destroyed in great quantities. It remained for the year 1874 to show us their destructive power. You remember that year was the hottest and dryest on record. The borers then made terrible havoc with our trees. All the mountain ash were destroyed, about four-fifths of the soft maples, two-thirds of the elms, and one-half of the ash-leaved maples. The true ashes, willows and poplars were not attacked. A great many trees were killed by the dry weather. I think not a single tree of the kind they attacked escaped without more or less injury. We came to the conclusion something must be done to destroy or counteract the borer, or that we must stop planting trees.

"We found that in this section the mass of eggs were laid from the last week of May to the first week of July (inclusive), on the south and south-west side of the tree, seldom on the east and never on the north side. A shaded tree they do not attack, unless it is dying or dead. To shade all our trees was impossible. Soap, if properly applied, we found would keep them out, but would not destroy them once they had obtained a lodgment; we found also that a fresh application had to be made after each hard rain to be effectual.

"Being told that an application of kerosene would be effectual, we determined to try it, but as no one appeared to be thoroughly posted as to its effects upon the trees, some affirming it would kill, while others thought not, we concluded first to test it with two soft maples, just at the time the leaves were starting. We cut the bark of one of these in several places, the other we left entire. We saturated them with kerosene on the south and southwest sides. During the first week the kerosene was distinct to taste and smell; during the second week a slight trace only could be perceived, which entirely disappeared the third week. The buds which were touched by the kerosene were killed, but new buds at once pushed out and grew vigorously, and the trees grew as well as others in the nursery. We applied kerosene the middle of June to over four thousand trees, with apparently good results. The trees grew well and have commenced healing wherever previously attacked. There was no sign of a borer on trees washed with the kerosene; even where the trees were dead, the bark was stripped off and no sign of the borer seen. We shall continue the experiment this year (1876), and note the result. A number of trees were planted on the north and east side of a board fence, and some directly opposite on the south and west side; those on the south and west side were attacked in proportion to those on the north and east side as three to one, yet the only difference was the partial shade afforded those on the north and east.

"Notwithstanding the foregoing facts, I would not recommend the indiscriminate use of kerosene until the experiment has been more thoroughly tried. C. THOMAS."

Brilliant Foliage in Plants.

In the village of Union Springs, New York, a tree planting society was formed many years ago, and several hundred trees of the Sugar and Red Maples were planted along the different streets. Nearly every autumn these make a gorgeous display of crimson, scarlet, pink and orange, in an almost endless number of shades and different modes of blending. The absence of frost till late in autumn, owing to the proximity of Cayuga Lake, increases the effect. There are two or three trees of surpassing splendor, which maintain this distinction every year. Why would it not be as desirable to give a brilliant termination to the foliage of the season, as to plant for the two or three days of the blooming season in spring?—*Cultivator.*

The Codling Moth.

In Prof. A. J. Cook's paper on the codling moth, read at the Michigan State Pomological Society, a brief notice of which appeared in the *Western Rural* for Dec. 19th, he said that the bands should be placed on the trees by June 20th, as very soon after that date the larvæ will commence to leave the apples. The first examination of the bands should be made the first week of July. Every varieties of apples are first attacked by the moth, and bands on the Early Harvest, etc., should first be examined for the larvæ. The examination should be made at intervals not greater than ten days, as this will cover the briefest period of preparation.

Experiments made during the excessive heat of last season showed that an interval of twelve days between the examinations was too long, as many empty pupa skins were found. As the first brood are developed by the last week of August, and as the second brood do not leave the cocoon until the next year, no examination need be made after the last week of August, until nearly winter, when a very careful examination should be made by unwinding the bands and crushing all larvæ and pupa with the fingers.

Without the removal of the rough bark by soaping and washing, the bands cannot be effectual. The removal of all rubbish from beneath the trees is also important. Those who have not yet used the bands should seek out and destroy the larvæ under the rough bark, and in all other places where they may be found.

The paper closed with an amended summary from Prof. Riley's third report on injurious insects, as follows: There are two broods of codling moth every year; the second passes the winter within the cocoon in the larvæ state. Use sheep or hogs on the orchard whenever it is possible to do so. Put no confidence in lights or bottles, but rely on bandages. Have these in place by June 20th, and destroy the cocoons, larvæ and pupa underneath them every ten days, commencing as early as July 8th, and continuing until August 30th, and again at the close of the season after the fruit is harvested. As soon as the ground thaws in spring, destroy all insects within cocoons found around storehouses or under bark where trees were not bandaged the previous year. Urge your neighbors to combine with you in your work.

Two Requisites for House Plants.

One of our lady readers remarkably successful with her house plant in the winter season, gives us two points in their management. Every gardener and florist knows the value of what is called "bottom heat." A warm atmosphere—especially if a dry one—is often sufficient to bring about healthy growth, and is sometimes injurious. What is wanted for many kinds of plants and flowers, is *moist heat at the roots and fibres*, where growth early starts, and from which the stimulus is conveyed to every other part of the plant. A thrifty growth below the ground is sure to be followed by fruit and flowers above.

Our lady friends accomplishes this by filling the saucers of her flower-pots *with hot water*. This is, of course, absorbed and carried up to the roots and fibres, giving the required bottom heat. Unthrifty plants, in addition to this, she places on the mantle-piece over the kitchen range; keeping them, of course, well watered. It supplies heat where it is most wanted—at the roots—and the benefit is marked. In warm rooms the higher temperature is at the top, and the coldest near the floor, where the pots are. This reverses the proper order, giving the roots of a plant the coldest place.

Another important matter in house plants is to give them the morning sun. Windows, where flowers are kept, should, therefore, face the east. The reasons are not known, perhaps, but the fact is patent to all whose business it is to develop healthy growth in plants and flowers, that an hour of morning sun is worth three hours of afternoon sun. Every one observes this, and it may be owing to some increased electrical action at that time.—*Practical Farmer.*

CURING HABITS OF SOME PLANTS.—The Goat's Beard, *Tragopozon pretensis*, will not expand its flowers in cloudy weather. From its habits of closing its flowers at noon, it has received the name of Go-to-bed-at-noon, and in England, in many places, the farmers' boys regulate their dinner hour by the closing of the flowers of the goat's beard. The lovely *gentianella* opens its blue eyes to greet the midday sun, but closes them against a shower. The stems of trefoil intimate the approach of rain by swelling and growing more upright than at any other time.

Common Mistakes.

What a common mistake it is, among even some of most intelligent men, to select low, sheltered warm places, if possible, whereon to lay out their orchards, quite forgetful of the fact that, by so doing, they are laying their fruit and other trees all the more liable to the ravages of frost. This may seem paradoxical, but let us examine the philosophy of it. On the hill where the wind blows freely it tends to restore to plants the heat lost by radiating, which is the reason that hills are not so liable to sharp frost as are still valleys. When the air is cooled it becomes heavier, and, rolling down the sides of the valleys, forms a lake, so to speak, of cold air at the bottom. This adds to the liability of frosts in low places. The coldness is still further increased by the dark and porous nature of the soil, in low places, radiating heat faster to the clear sky than more compact upland. A knowledge of these properties, therefore, teaches us the importance of selecting more elevated localities for fruit trees, and all crops liable to be cut off by frost; and it also explains the reason why the muck or peat of drained swamps is more subject to frosts than other soils on the same level. Therefore corn and other tender crops upon such porous soils must be of the earliest ripening kinds, so as to escape the frosts of spring by late planting and those of autumn by early maturity.

Fruit Growing in Ontario.

Mr. E. Smith, Grimsby township, raised, the past season, on 24 acres of ground, 375 bushels of apples, at 80 cents; 200 bushels of peaches at $2 per bushel; 13 bushels of pears at $2 per bushel; 30 bushels of cherries at $1; 3 bushels of plums at $1.50; 250 bushels of grapes at $2; 30 bushels of beans at $2; 700 bushels of onions at $1; 200 bushels of beats at 50 cents. 225 bushels of carrots at 25 cents; 500 bu hels of turnips at 25 cents; 175 bushels of potatoes at 75 cents; 50 bushels of cucumbers at $1; 50 bushels of tomatoes at $1; besides 100 bushels of buckwheat at $1; 7 tons of hay at $12 per ton; 3,000 water melons at 13 cents each, making in all 3,000 bushels, besides the hay, musk and water melons, amounting altogether to the value of $3,492, being over $145 per acre.

Transplanting Evergreens.

Why writers on horticultural topics should, with almost one accord, advise planting evergreens later in the season than deciduous trees, is something that I cannot understand. The frost is barely out of the ground, but I have begun to transplant evergreens; this has been my practice for the last twenty years, and I do not believe any advocate of late planting was ever more successful. Trees put into the earth in time to receive the benefit of heavy spring rains in settling the soil about their roots, are more likely to live than if the operation is delayed until later in the season, all the fine theories to the contrary notwithstanding.—*Cor. Rural New Yarker.*

OXFORDSHIRE DOWNS.—The face and legs of an Oxfordshire Down sheep should be of a nice dark color; the poll well covered with a top-knot on the forehead; the fleece should be thick on the skin, of moderate length, but not too curly. The average of a well bred flock in wool should be 7 lbs. per fleece; rams of this breed will not unfrequently clip as much as 20 lbs. each. Combined to a round, well-formed barrel, there is generally considerable length and immense substance of frame. Tups are sufficiently wealthy in grazing characteristic as often to develop carcasses weighing from 20 to 25 lbs. a quarter ere twelve months old. The mutton partakes of the closeness of texture and good quality of the Down, while in bulk it well nigh equals the immense joints of Cotswold sheep. That such animals should be in high favor amongst graziers is what naturally might be expected on all soils sufficiently fertile to maintain the affluence of such a productive sort in full development. Oxfordshire Downs answer best for mixed soils, consisting of good heavy, or light loams, but with management and tolerable high feeding, they are adapted to prove more remunerative than most sheep under other circumstances, and over rather a wide diversity of districts. I fully expect to see them extend, ere long, much further than they have hithert done, as they answer so fully the wants of English farmers, in combing large quantities of best quality meat and wool; to be obtained, too, without any detracting features involving either loss of time or sacrifice of food.—*London Live Stock Journal.*

Correspondence.

[The Editor does not hold himself responsible for all articles that appear under this department.]

ARTIFICIAL MANURE — SUPERPHOSPHATE.—Knowing that you feel a great interest in all matters connected with the advancement of agriculture, I send you my experience in the use of artificial manures—a subject which I think will not be uninteresting to your readers. I rented the farm which I occupied last year, as is the usual custom in England. I was much pleased with the superphosphates and the bone meal I had from the Brockville Chemical and Superphosphate Works last year. These articles gave me good satisfaction. I have had large experience in England in using artificial manures; have used as much as 15 tons in a year; have used G. B. Larvi's manures and dissolved bones, and also guano, and I find the Brockville Chemical Works manures as good as I ever used during an experience of 30 years. I look upon them as being equal to Peruvian guano. On carrots and turnips I took two of the best prizes in the county; of the former I had 800 bushels, and of the latter 900 to the acre. These were grown on broken-up green sod that did not formerly cut 1,000 lbs. of hay to the acre. I planted 40 rods with Early Rose potatoes, and used 100 lbs. of superphosphate on same; I had 100 bushels (equal to 400 bushels to the acre). These were a beautiful sample of large, sound potatoes; not one was rotten. I tried barn-yard manure and superphosphate side by side on a crop of oats, and I found the superphosphate to be the best. I used last season of artificial manures, on my course root crops, only 300 lbs. to the acre. The coming season I intend to use 500 lbs., as they do in England. I intend to purchase a large supply of artificial manures to use next season, as I intend to use them largely on roots and other crops. I have a machine which I have had made after an English patent, which sows the turnip (or other seed) with the superphosphate. The machine, with one man, a boy and a horse, will drill in six acres in a day. I am sure if this machine were known it would be found to be of great service in Canada.

JOHN DYMOND, East Dunham, P. Q.

CANADA FOR CANADIAN CATTLE—IMPORTANCE OF AGRICULTURE.—The exclusion of stock registered in the Canadian Herd Book from the Centennial Exhibition is only another instance of the unfriendly and exclusive spirit in which Canadians have always been treated by the American authorities. When they could not refuse to admit our lobsters free of duty, they took advantage of an accidental omission in the fishery clauses of the Washington Treaty, and levied a duty on the tin cans in which the lobsters were packed. Our merchants and millers are allowed to import wheat and flour duty free, whenever a difference of price makes such importation profitable whilst a heavy duty is levied on our exports. We want no American cattle imported into Canada. We can raise enough cattle and sheep to consume our own root crops and coarse grains, if we can only obtain a good price for them—not only for our own use, but also to supply the English market, and for this reason no American cattle—Texan cattle especially—should be suffered to pass through Canada, not even for exportation to England; but I fear our Governments, both Dominion and Local, think more of obliging the great railway companies than of assisting our farmers in building up a prosperous future empire. The late Emperor, Napoleon III, rightly observed that "agriculture was the foundation of national prosperity, and that on its success or failure depends the rise and fall of Empires." What caused the rapid decay of the great Empires of the Old World, the Babylonian, the Assyrian, the Grecian and Roman Empires, but that they were military powers only. They were engaged in continual wars, so that the husbandman could never be sure that he should reap what he had sown, and consequently paid little attention to his business. To the destruction of life caused by continual wars add the frequent and extensive famines, caused by neglect of agriculture, and you have ample cause to account for the effect produced. Agriculture demands and will always receive encouragement from a truly wise and paternal Government. I have noticed that several failures have occurred amongst the Granger stores on the Pacific slope. This only confirms the opinion which I have repeatedly expressed, that co-operative stores are never likely to be beneficial to farmers, and I hope our Canadian Grangers will take warning by the errors of their Californian brethren, and not meddle with speculation in any shape or form. Meantime, I am glad to find that their numbers are fast increasing, and if they faithfully act up to their principles, they cannot fail to produce an enlightened spirit and more intelligence amongst our farmers, who, taking them in the mass, are their own worst enemies, in too many cases driving their sons away from home by hard work and hard living, and hoarding up their money in banks, with the risk of loss if a panic should occur, instead of investing it in improving their farms, in under-draining, wherever necessary, and the judicious use of artificial manures, thereby increasing the quantity of available produce, and consequently profit, and making home what a farmer's home ought always to be—attractive in its surroundings and comfortable within, so that when the children come to be settled in life they may still have pleasant memories of the spot where their early years were spent; or else our farms will be continually changing hands, instead of remaining, as they might do, in one family for successive generations.

SARAWAK.

STUMP EXTRACTION.—I have been informed that by boring holes in the stumps of trees and filling said holes with saltpetre, and then plugging the holes tight up again, the stumps will decay and rot in 12 months' time. Have any of your correspondents ever tried this plan, and is it effectual? I should also like to be favored with any information likely to be useful with regard to the speedy extraction of stumps, and also in regard to stump machines – especially the least expensive.

J. B. PICTON, Port Carling, Ont.

[We have somewhere seen a statement that saltpetre put in holes in a stump will cause it to rot in a short time, and some time afterwards we read a contradiction of it in an agricultural journal. In a late number of the ADVOCATE we gave, in reply to the query of a correspondent, two methods for getting rid of stumps, both of them strongly recommended. A writer in a Southern agricultural paper recommends another method—boring an auger hole in the root of the stump beneath the surface, bared for the purpose, and then setting fire to the root; the hole made acting as a flue, the stump, it is said, will burn out freely and entirely.—ED.]

RAPE SOWING.—Will you inform me through your next number when is the best time to sow rape, how much it will take per acre, what is the best way to sow, if it is as good for milking cows as for sheep, and what is the best way to feed it off? We wish to sow about five acres. You will oblige by giving the fullest information at your disposal. Also, the price of seed, and where I can get the best. I want to put it into wheat next fall.

H. BEST, Dearham, Ont.

[Rape is as good for feeding milch cows as for sheep. It is extensively sown in Europe, and mowed for soiling for horned stock as well as for sheep pasture. We have sown it in large quantities for both purposes, nd also as a crop to be harvested for the seed; and in every instance we found it fairly remunerative. We prepared the ground as we would for turnips, and sowed the seed in June. Grass and clover seeds we always found to do well when sowed with it. Sheep preparing for the butcher for the Christmas markets throve and fattened well on it. For soiling we fed it to cattle late in October and through November. We found it very serviceable at that season, especially for milch cows, when other soiling was getting to be scarce and turnip-feeding had not commenced. It may be sown broadcast and harrowed, or drilled—the method generally practiced now. A few pounds of seed per acre - little more than of turnip seed - are enough.—ED.]

PLOW FOR NEW LAND.—Would you please inform me through your valuable ADVOCATE, whether you consider a metal or a wooden beamed plow the most durable for new land? Also, what size harrow is best for the same? Any information or recommendation will be thankfully received.

T. A. ROTHWELL, Colpoy's Bay.

[We would prefer the wooden beam to the iron beam plow for new soil, and a V harrow with teeth standing backwards. In new soil that is newly cleared, there is not the same necessity for thorough plowing and tilling as on land some time under cultivation, the surface soil being, in great part, vegetable mould, formed from decayed leaves, needs to be stirred a little—enough to get the mould to cover the seed.]

NEW SEEDS, &c.—I am going to tell my last year's experience of new seeds, &c., of potatoes. I planted the Snowflake, Brownell's Beauty, Compton's Surprise and Green's Seedling, the latter a long, red variety with large tops, hardy, white fleshed and well flavored. Of these, for our swale land, Green's Seedling stands first, Snowflake second. I am not sure that I have the genuine Brownell's Beauty, as they look very like Garnet Chilies. I shall, however, try them again, as I find potatoes can look very much alike and yet be different, as I found out, too late, about the Early Vermont. Compton's Surprise is, I have no doubt, a good keeping potato, but they grow too small to suit me. I think the Climax a better keeping potato and a better yielder. We have the good fortune to be free from bugs here. Of wheat, I sowed only the Golden Globe or Red Fern. It succeeds well on our land. It requires early sowing, is hardy, stands up well to harvest, and makes splendid flour. The heads are very long; one raised by Mr. James Gibson, of this township, contained ninety-eight grains, all plump and good, even to the "top pickle." Our greatest difficulty in this part of the country is in seeding down. I have nothing to say about it except that every plan that I have ever tried has very often failed. I am now trying the plan of seeding to timothy, in November or December, on the frozen ground; and, even if it succeeds this time, I shan't be sure that it would again. Clover is more apt to grow than timothy, and, on that account, I sow clover of some kind everywhere I seed down. Unfortunately, red clover is very liable to kill out in the winter, while the Alsike clover seldom does so; and, if sown in low land favorable to it, it will increase until it takes possession of the ground—seeding itself. My plan is to sow a mixture of 2 lbs. of Alsike, 5 lbs. of red and 15 lbs. of timothy on an acre of clay land, the object being to have the Alsike to take the place of the red clover when it dies out, which it does often in a year or two. In our swales I sow a mixture of 2 lbs. of Alsike to 15 lbs. of timothy. This does well, when the timothy grows; but Alsike does not do without a good mixture of timothy to support it, otherwise it will lay down, and cannot be cut cleanly. The latter mixture makes the best of hay; the grass and clover are fit to cut at the same time.

Why is it, that while we in Canada are nearly all farmers, we allow our legislators to make laws which are unjust to the farmer?—that we allow them to encourage rings and monopolies at our expense, placing protective duties on industries that do not need them, such as coal oil refineries, &c., retarding the settlement of the country by their niggardly action to the poor settlers in so called "free grants," in withholding from them the timber growing on the land, thereby, in many cases, making it a worse than useless gift?

Wolf Island, Feb. 7, 1876. S. GOING.

[Mr. Going's communication on haying and harvesting we have reserved for the future. He sends us a bouquet of clover from his hay-mow, remarkably well preserved and fragrant.]

BOHEMIAN OATS.—We have heard a good deal of blowing about Bohemian Oats. The greater the humbug, the more wind it takes to blow it on the market. A number of my neighbors grew them last season. One sowed 25 bushels, for which he paid $250, on about 20 acres of good land, and reaped about 300 bushels, and I am sure he could not sell the lot in the neighborhood for the money he paid for the seed. Another sowed 10 bushels on 10 acres, and had about 110 bushels. Others might be mentioned, some perhaps getting more and others less per acre. Now, the common oats yielded on an average last season, in this section, about 50 bushels per acre, or 4 bushels for 1 of the Bohemian's, and allowing them to weigh 50 lbs. to the bushel, they would not be worth more than a bushel of corn or peas would be for feed, and 4 bushels, or 136 lbs., of common oats at the present low price would be worth about as many cents. Now, from the above facts every one can draw his own conclusion. But the most that I can make out of it is that Bohemian Oats will soon be a thing of the past, and I am sure that even the coming season there will be very few, if any, sown in this section. In fact, those who have them would be glad to dispose of their stock at a price that would fairly remunerate them for their outlay. For my own part, I would not sow them if the seed was furnished for nothing, and there are many others of the same opinion. The above is written in good faith, that it may be the means of saving hundreds of dollars to honest farmers.

Abingdon P. O., Ont. JOHN JACKSON.

ORCHARD GRASS.—We esteem your ADVOCATE very highly, and wish you every success in the future. We received some time ago samples of grain from British Columbia; fall wheat and spring wheat the best I ever saw; two kinds of barley and two kinds of pea, and one kind of oats. The names of the different kinds we did not get. We also have some potatoes, called Monson's Prize, brought from England in 1875; they are much earlier than the Early Rose. We also received several kinds of seeds, such as turnip, carrot and mangel wurzel, of which we will send you a fuller account at a future time, if the seed proves to be superior to what we have been using. The Orchard Grass we got from you last spring has not caught very well. We sowed some this fall with the wheat and some without wheat. How do you think it will turn out? We sowed one bushel. Are carrots good for breeding mares? What is the best feed for young pigs this season of the year, as ours have failed to do well on shorts and bran?

Brampton, Ont. WALKER BROS.

[Orchard Grass having been but lately introduced into this country, a definite opinion can hardly be formed yet as to what may be the success of the experiment; but we have good grounds for expecting that it will turn out well. It is hardy enough for even our climate, and it has done well in every place where it has had a fair trial. Even a partial failure, if there be such, should not discourage us in our attempts to introduce new plants that are likely to be of great general benefit. We have had a letter from another person who has sowed it. He sowed part in the fall and part in spring. The latter did well, though that sown in the fall was a failure. Carrots are good food for horses, but mares with foal should get them sparingly. Young pigs at this season require other food than shorts and bran. Diminish the bran, and give instead some meal and milk.—ED.]

TO PREVENT COWS SUCKING THEMSELVES.—I have noticed in the February No. of the FARMER'S ADVOCATE Mr. J. S. Bruce's letter, asking for the best way to prevent a cow from sucking herself. Now, I think I can give him a plan that will answer a little better than the one you gave. It is simply a "poak," as I call it, and any one at all can make one if he has an auger and an axe. In the first place get four pieces of an inch and a half thick and about two inches wide, of elm or some kind of timber that won't split or break very easy; then four more that will reach four inches on each side of her neck. Take your auger and bore holes in the corners of all the sticks; then put pins of some tough wood through them so as to fit on the neck; then fit pin on each side of her neck, close, so as not to let the frame turn on her neck. The side pieces must be exactly the length of her neck, or it is no good. Now, if this poke is made right, there is no fear of her sucking herself, and if she is not very bad, it will break her of that practice altogether.

Belmont, Ont. J. M. MCKELLAR.

[We have another communication on this subject from Elma. As the principle in them both is the same, differing only in the details, we give insertion to but one, with thanks to Mr. B.—ED.]

BOKHARA CLOVER.—I would like to know whether Bokhara Clover seed requires to be sown with grain, and the grain best suited to a sandy but new soil. If you favor me with a reply through the ADVOCATE I will be much obliged.

Wasbago, Feb. 7, '76. J. H.

[We have had no experience in growing Bokhara Clover in Canada, nor do we know if the cultivation here would be successful. We have seen it grown in Europe—not with grain but by itself—as the growth is so luxuriant that it requires the entire ground for its growth. The produce was very great, but the stems were as strong as those of sweet corn, of a medium size, and branched as a shrub. It was, however, highly esteemed for soiling, and its blossoms are said to be unequalled for affording food for bees. When in blossom, it is a beautiful, fragrant plant.]

QUERY—MILKHOUSE.—I wish to know if you or any of your correspondents can give me a plan of a milkhouse, to be built on the surface—one that would suit a dairy of from 15 to 20 cows—and what kind of machine you would recommend for churning. A SUBSCRIBER, Arnprior P.O.

[A plan of milkhouse such as asked for will appear in the ADVOCATE as soon as we can obtain the cut from our artist. We know of no better churn than the Blanshard.]

POTATO PEST.—Last spring, as a practical test, I planted one pound of each of the following varieties of potatoes. The soil was a gravelly loam, and had a light dressing of barn-yard manure. The seed was selected from tubers of the medium size cut to single eyes, and one set in each hill. They were planted on the tenth of May, and given ordinary cultivation.

From 1 lb. of	Early Rose,	the yield	was	65 lbs.
" "	Late Rose,	"	"	70 "
" "	Early Vermont	"	"	55 "
" "	Compton's Surprise	"	"	53 "
" "	Brownell's Beauty	"	"	65 "
" "	Pearless	"	"	70 "
" "	Snowflake	"	"	70 "
" "	Early Champion	"	"	75 "

The last mentioned is an entirely new variety, of which I am the originator. I suppose you remember last spring I sent you a few as a sample, and to have them tested. They originated from a seed ball of the Excelsior potato, which were growing beside some of the Early Rose, and were no doubt fertilized from the pollen of that variety. In general appearance they very much resemble the Early Rose. Upon comparison of the latter variety they are found to be more of a whitish, russety tinge, and their eyes somewhat deeper indented. And there are certain tubers which partake more of the characteristics of the Excelsior variety, being oval in shape, and the eyes quite deeply indented. The vines are of medium height, stout and vigorous; leaves rather broader than those of the Early Rose, and of a light green. The tubers are compactly clustered around the base of the stalks, which is quite an important consideration in digging the crop. In regard to earliness, they surpass any of the American varieties that I have given a trial; being from six to nine days earlier than the Rose. As to quality, nothing can excel this new variety; flesh white; very dry and firm, and possessed of a pure, delicate flavor that stands unrivalled as a table potato. Another decided advantage over most other early sorts is its good keeping qualities, being very hardy; samples which were kept till the middle of June did not show the least deterioration in quality. The Early Snowflake is a good cropper; quality, very dry and mealy, and of a splendid flavor; it is a first-class potato in every respect. Brownell's Beauty were not so productive, but of very good quality. I do not consider the Surprise entirely fit for cultivation. The Australian Oats turned out very well; the five pounds sown yielded 6½ bushels; they were a very good oat, weighing 38 pounds to the bushel.

Thamesford P. O. WILLIAM GOBLE.

[We consider the above of importance, as Mr. Goble is a very enterprising young man. He may have a potato that will do honor to our country.—ED.]

JUNE GRASS.—As there are a great many farms troubled with this June grass, I beg leave to relate a few thoughts that may perhaps prove useful. First I take and plow it the latter part of July; then harrow it as often as you wish during summer and autumn, and then cross-plow and lay it up rough to catch the frost, and it will trouble you no more. If farmers troubled with couch grass would try this experiment, and be kind enough to state through your valuable paper how it succeeded, I would feel very much obliged.

Clarendon, Feb. 11, '76. F. WILSON.

BOHEMIAN OATS.—Please state in your next issue of the ADVOCATE whether the Bohemian Oats have been introduced into the States or not; and further, are they a safe investment, and what sort of meal do they make? DANIEL BEAN, Ratho.

[We presume they are known in the States. The oats may be valuable to farmers living fifty miles from mills, railroads or water communication; do not consider they would be profitable in old settlements. We have partaken of porridge made from them, and never ate better.—ED.]

Yes; such an instance of "leaves coming to life again" is recorded in our volume for 1841. The whole of the leaves of a bay tree a appeared in spring to be brown and apparently dead, from the action of frost. As the spring advanced many of these leaves fell off, and the branches gradually acquired new leaves, while many of the brown and to all appearance dead leaves gradually recovered their green color, and in some cases were completely restored to life.—*London Gardener's Chronicle.*

Seed Report.

The Scott wheat I purchased from you did extra well with me, it averaging 23 bushels to the acre. Had Treadwell in the same field, sowed at the same time, and it only went 10 bushels to the acre. It was all badly winter-killed. I think the Scott wheat an extra variety. Sowed all Scott wheat this year. The Clawson you sent me seems a nice wheat.

Dunn, Jan. 1st., 1876. PETER GRANT.

I sowed seven bushels and a peck of Scott wheat, and I had 217 bushels from the threshing machine. It shelled bad on account of its being badly lodged, but, on the whole, it was the best crop I ever raised.

Ingersoll, Dec. 29, 1875. W.C.A. CRAWFORD.

I sowed the pound of Red Fern wheat you sent me, and had 56 lbs. of first quality wheat from it. I sowed the pound of Australian oats, and had 75 lbs. from it, so I think I am well paid for my dollar. The package of Trefoil or French clover that you sent me in 1874, was sown as you requested, half of it in the fall, but it was killed out in the winter and spring. The other half I sowed in the spring, on a piece of land that was sown with wheat. When I was cutting it some of the clover was 18 inches long. It looked delightful when in blossom. I am well pleased with it. How could I obtain some more of it?

Tara, Jan. 4, 1876. ALEX. SPEER.

The Egyptian wheat, as far as my present experience of it goes, I consider of no value, but shall give it another trial this spring, with salt as a manure.

Fergus, Dec. 31, 1875. ISAAC ANDERSON.

I received the seed last spring in good order.—One bushel of Black Tartar yielded 34 bushels; 10 lbs. of White Emporium oats, 7½ bushels; 10 lbs. Emporium wheat, 2½ bushels.

N. Augusta, Dec. 27, 1875. JAS E. LEWARS.

From the Farrow Spring wheat I obtained 20 bushels from 2 bushels. I sowed the 20 bushels in 10 acres of land; 7 acres were summer fallowed and 3 acres plowed. In the fall I obtained 360 bushels off the 10 acres, which was 36 bushels per acre.

Chippawa, Jan. 4, 1876. RICHARD WALSH.

The ¼ lb. of Clawson wheat was sown rather late, and very little came up, but what did stood the winter well. I threshed it and got 24 lbs. of good wheat. It was shrunk a little. The 1 lb. of Emporium wheat turned out only 24 lbs. of good wheat. The 1 lb. Emporium oats turned out three bushels and thirty pounds. I should have had more, but a storm knocked it down, and it did not rise again. The Clawson and Silver Chaff I had from you this fall is outgrowing the Scott.

Enniskillen. H. WHEELER.

The Red Fern turned out very well, and the Emporium oats did likewise and will be profitable.

Brock, Jan. 5, 1876. PHILIP SHIER.

From the ten pounds of Red Fern wheat which I sowed, I received in return five bushels of good wheat, which I consider was a very good return. The Emporium oats did well—was a good standing crop.

Epsom, Ont., Jan. 7, 1876. WM. STOVIN.

Mr. Wm. Potticary, Glanworth P. O., from one pound of Emporium oats receives 99 lbs. Who can beat that? Also 61 lbs. of Red Fern wheat from 1 lb.

The Red Fern Wheat did very well; I threshed about two bushels and a half of it. The Australian Oats did pretty well; I threshed about four bushels. As it was rather late before I got them, and therefore did not ripen very well, but did not rust.

Cumberland, Ont. JOHN MCDONALD.

I sowed twenty pounds of the Emporium Oats last spring on turnip ground, partly not manured, and harvested by some misfortune 38 bushels of clean oats. I sowed 25 pounds of the Red Wheat on wet lands, it did not turn out so well, both grains have clean straw and no rust nor smut.

St. Jacob's P. O. PETER B. BOWMAN.

The half bushel of Oats I sowed are very ordinary grained. I gave them plenty of room to grow; we got 20 bushels by measure, and 24 bushels by weight. The potatoes we got from you—the bugs hurt them much.

Odessa P. O., Ont. DONALD FRASER.

The bag of Emporium Oats I got from you last spring did splendid; they were fully one fourth heavier crop than the Sovereign Oats in same field.

Concord. THOMAS LEASDALE.

The eight bushels and three pecks of wheat we obtained we sowed broadcast on five acres of land. The soil was a very rich clay loam, in fact the land was too rich for the wheat this last season, as all grain in this locality had far too much straw, the season being so remarkable for luxuriant growth. As it was, the wheat went down badly, consequently it is a little shrunken. I believe if it had stood up until it had ripened, it would have yielded thirty-five or forty bushels per acre. There was a very great waste in harvesting; yet after all it turned out twenty-eight bushels to the acre. We sowed it on the same day as the Red Chaff or Fife Wheat, and it ripened fully a week before it, and it is far finer wheat and makes a very superior quality of flour. The oats are a very fine, plump grain, and they all grow on the side of the stock, the same as the Black Poland Oat. They yielded sixty-five bushels to the acre, and weigh forty pounds per bushel. They are sowed on ordinary land, not being very rich.

WM. AYERST & SONS, Talbotville P.O.

P. S. I might mention that we took the first premium on the wheat at the East Elgin Agricultural Fall Exhibition.

Australian Oats — 50 pounds of seed returned 33 pounds to each pound of seed—1650 pounds; 275 pounds to the chain, which is 2750 pounds per acre I think. 8 pounds of Red Fern Wheat on poor soil and sod at that, returned 125 pounds. It was sowed too late and too thin. Brownell's Beauty potato did well; Snowflake potato did better.

The 33 pounds of Emporium Wheat I got last spring yielded 15 bushels of 62 pounds per bushel.

Dunbar P. O. WM. R. ALLISON.

Off 20 acres of fall wheat I had 630 bushels of Barley; off 7 acres, 370 bushels; sowed on the 23 May. Of Oats, 10 acres, 480 bushels; sowed 21 May.

The Red Fern Wheat, Emporium Oats and Gooseberry Bush did well; but the Oats extra. From 23 pounds of wheat sown, I had a yield of ten bushels. The straw was strong and free from rust. From the same quantity of oats I received in return forty-six bushels, making two bushels to the pound. The straw is strong and they are not bad to shell in harvesting. You deserve great credit from all farmers for the introduction of this new variety

Collingwood. CHAS. LAWRENCE.

The seeds I got from Emporium last year did well. One pound of Emporium Wheat yielded 90 pounds; one pound Emporium Oats yielded 99 pounds. The flowers which I got from the six papers of seed were the delight and wonder of the neighborhood. The one dozen Cheney strawberries all grew, and I had a few very firm delicious berries of such a beautiful color that would make a person long to eat them. The Janesville Grape and Gooseberry bush both grew and did well. But the best I got was the Schweinfurth Cabbage, some of it was nearly as large as a half bushel measure. Instead of selling a York Cabbage for five cents, those brought from 15 to 25 cents, and were nearly as early.

Sillsville P.O. S. H. MELLOW.

L. B. D. Lapierre of Paris, condemns the Red Fern wheat; it did not yield well with him. He considers the Australian Oat a common kind, but says they yielded well.

The peck of Emporium Oats I received from you last spring I have just threshed. They yielded ten bushels and three pecks. I sowed them on the 18th of May, in the same field with wheat. The wheat rusted very bad but the oats were not rusted the least; therefore, I think they are rust proof.

Columbus. WM. B. GREY.

LUCERNE.—Can you inform me whether Lucerne will answer in this country as a forage plant, and whether it is tenacious of life or not.

Moore P. O. C. S. NESBIT.

(Lucerne is a plant of recent introduction into Canada, but we have reason to hope that it will be found hardy enough for the climate, and, if so, we have no doubt it will prove a valuable addition to our forage plants. Try but a small quantity at first—sow in spring. A communication from a farmer who has tried, tells the results, as far as yet known, of his experiment.—ED.)

DISSOLVING BONES.—Would you or any of your readers have the kindness to inform me, through the ADVOCATE, how to dissolve bones for manure?

Alvinston. ROBT. LAMB.

(Break the bones as small as you can, then pile them in a heap with wood ashes in alternate layers; pour on the pile, from time to time, the suds from the laundry. This is the simplest and cheapest method, and said to be thoroughly efficacious.—ED.)

How to Dispose of Cheap Potatoes.

In a letter received lately from a business man in New York he speaks of the profits he is realizing in manufacturing potato starch. In consequence of the heavy yield from the potato crop of 1875, he has been able to purchase at low prices—25 cents per bushel or thereabouts; and the cost of manufacturing he finds to be not more than twelve cents per bushel. The yield of starch, he says, is 12 pounds per bushel of potatoes. This produce seems to be so high that we are inclined to think there must be some error in his calculations, as there is not, so far as we know, in any varieties of potatoes, whatever may be their quality, one-fifth of their gross weight of starch. He is, however, making a good profit from the business. The manufacture of potato starch has been carried on in New England for some years.

In Nova Scotia, a province noted for potato growing, the manufacturing of this article has been carried on for some time. There is, in ordinary years, a good market for much of the surplus potatoes in Boston, but the crop of 1875 was so abundant that the demand for them for table use has greatly fallen off and they are sold at about 25 cents a bushel. The starch factories of the province, however, afford them a market, and they have been doing a considerable business. In one instance, the factory of Hubbard and Randall, near Aroostock, there were converted into starch, last autumn, 15,700 bushels of potatoes. The quantity of starch produced was seventy tons, almost 9 lbs. per bushel. This may be considered the general average yield, though it varies a little, according to the favorable or unfavorable season, to the soil on which the potatoes are grown and to the variety of potatoes used. Potatoes that are best for the table are likewise most productive of starch, so a moderately dry season and light dry soil are most favorable for the growth of potatoes for starch.

Of the potatoes used in the Aroostock manufactory, 3,000 bushels were raised by one of the firm, Mr. Randall, on twelve and one-half acres of ground; and of these 2,050 were raised on eight acres of new ground. The cost of these is shown by his accounts to have been, for seed and labor, but eight and one-half cents per bushel—2,050 *bushels at a cost of* $174.25. In his account he makes no charge for the use of the ground on which they were grown, as this he considers ought to be debited, not to the potato account, but to improvement, the ground being improved and prepared for succeeding crops by their cultivation.

Perhaps the Grangers might discuss the propriety of finding a market for their productions by manufacturing starch, and cultivating more potatoes in some localities.

Extraordinary Yield of Potatoes.

PRODUCE ONE THOUSAND FOLD.

Were it not for the indisputable testimony to the yield of potatoes planted as trials in the United States, we would be strongly inclined to disbelieve the reports of one thousand pounds from one pound of potatoes. From 25 to 30 fold we have considered good produce for a field crop, and that twice that increase might be raised with more than usual care and a double allowance of fertilizers, we know; but now the seed planted is returned more than one thousand fold. From the report of a committee appointed to determine who raised the largest produce from one pound of seed (Snowflake and Eureka), we see that not less than six competitors each raised from one pound over 1,000 lbs.—from 1,417 to 1,069¼ lbs. of the Snowflake, and six competitors from 1,666¾ lbs. to 1,066¼ lbs. Eureka. P. C. Wood, who raised the largest quantity, thus describes his soil and labor:—The soil is a stiff, black loam, with a stiff and clay subsoil, not underdrained, but well surface drained, enriched by about three inches of well rotted barnyard manure, and wood ashes at the rate of one and a-half bushels to the square rod. Plowed and harrowed until thoroughly pulverized fifteen inches deep. The tubers were cut, some of the eyes being divided into as many as seven sets. Planted one set in a hill; under each hill a small shovelful of a mixture of one barrel of lime, one bushel salt water to slack the lime, five bushels wood ashes, on this a shovelful of well-rotted chip manure, in which the sets were planted. One-fourth of a pound of bone dust was well mixed with the surface soil around each hill. Two bushels of hen manure had been plowed under on each square rod in October, 1874. When the plants were two inches high, sprinkled with land plaster; continued to sprinkle with plaster at intervals of one week until Sept. 1. Worked well 12 inches deep while the plants were young, hilling them considerably. When the young potatoes were formed 1 to 1½ inches in diameter, covered the vines to within 5 or 6 inches of the tops, making very high, broad hills—the rows were five feet apart, and the hills in the rows 30 inches apart.

Another of the successful competitors used as manure decomposing hen manure, 3 parts; common salt, 1 part; unleached ashes, 1 part. When cultivating between the hills, made a compost of unleached ashes, 4 parts; salt, one part; sprinkled this on the hill, one handful to each.

The planting by all the competitors was done between the 10th and 26th of May, and one-fourth of them dropped the seed on the 10th of May.—The fertilizers used comprise every known manure, and the quantities applied are no less enormous than the crops raised. About the value of wood ashes, hen manure and plaster, there seems to be no doubt, and they have been used by nearly all the competitors.

A comparison of the distances between the hills, with the average yield per acre, is given as follows:

2x3	feet	gave a yield of	378	bushels	per acre.
2x4	"	" "	462	"	"
2x3	"	" "	651	"	"
3x3½	"	" "	441	"	"
3x4	"	" "	372	"	"
3½x4	"	" "	342	"	"
4x4	"	" "	332	"	"
4x8	"	" "	88	"	"

At the Annual Meeting of the South Essex Agricultural Association, lately held at Amherstburg, the President, Mr. J. H. Morgan, of Anderdon, dwelt at some length on the injustice that is done the farmers in our present customs arrangements with the United States, and called attention to the necessity of the farmers to bestir themselves and see that, as they composed four-fifths of the population of this great province, their interests were not neglected by the men whom they sent to represent them. He then read the following resolution, passed by the Manufacturers' Association at Toronto:—

"Be it therefore resolved:—That, in view of the fact that no duties are imposed on American products of the soil entering this country, while nearly all Canadian products are heavily taxed when sent to the markets of the United States, we do most emphatically protest against the interests of our farmers, millers and other producers being sacrificed in this way; and that, while desirous of seeing a fair reciprocity of trade in these articles between the two countries restored, Canada cannot suffer American products to enter her markets untaxed, as long a heavy toll of custom duties is levied on all our products seeking a market in the United States.

It was then moved and seconded that the first resolution adopted at the Convention of Manufacturers, held in Toronto in November last, deserves the approbation of the members of this Society, and that any legislation that protects any other branch of industry, without considering the farming interest, is partial and unjust.

After some opposition from two manufacturers, the resolution was adopted.

$50 Lost.

One of our subscribers, for some trivial cause, stopped his paper last year. The next issue Mr. McCallum's advertisement of Norway spruce appeared in the ADVOCATE. Two months after the former subscriber saw the ADVOCATE at a neighbor's and said, "I have just lost fifty dollars by not taking the ADVOCATE. I have paid fifty dollars more for Norway spruce than I could have purchased them for." We procured some trees from Mr. McCallum last year and were quite satisfied with them—his advertisement is in this issue. We know of no better tree than the Norway spruce for wind breaks. Every farmer should plant a lot of them, both for use and ornament.

Poultry Yard.

Poultry Shows.

CHICAGO POULTRY AND DOG SHOW, which took place in January last, proved the largest that has ever been held in America. We understand there was over two thousand entries of fowls, besides a good many entries of dogs, cats, rabbits, etc. Below will appear a list of the winners from Canada: Messrs. Wright & Butterfield, Sandwich, Ont.; Lamb & Jarvis, London; F. Sturdy, Guelph; Duncan Kay, Galt; A. Allen, Galt; R. McMillin, Galt; H. M. Thomas, Brooklyn; W. H. Doel, Doncaster.

CANADIAN POULTRY AT THE DETROIT SHOW.—A very fine exhibition has been held lately in Detroit, under the auspices of the Michigan State Poultry Association. Mr. Wm. Wright, of Petite Cote, Sandwich, is President. There were quite a number of Canadians among the competitors, and they attained great distinction in the prize list.

A POULTRY SHOW has been held in Brantford. It was a good exhibition, and was a credit to the Brantford Poultry Association.

Lime.

Some of our farming friends appear to be deeply impressed with the notion that hens need no food but corn in some one of its forms. But we ought not to forget that "food" means the material for everything that comes out of the system, and that if any particular race takes up any special branch of manufacture, they must have the raw material. All animals consume more or less of lime; it is one of the principal elements entering into the composition of the bones, but the hen needs an extra supply.

The domesticated hen also needs more than wild stock of any sort, since she is stimulated to a greater production of eggs. In consequence, we must give her more than is contained in the various grains.

The most useful forms in which to give lime are pounded shells, pulverized mortar and crushed bone. On the whole, we prefer the former. Its preparation makes a good stint for the boys. We object to bone meal if not perfectly sweet, but a good, sound article is a first rate thing for this use.

Feed lime most abundantly at the time when hens are laying most freely, and anticipate, if possible, by beginning early in the season, lest your fowls eat a shelless egg and acquire bad habits.

Raw and Cooked Food.

We believe in due caution in applying the needs of one kind of animals to another, as the most outrageous blunders are sometimes made in so doing. Yet we wish that poultry breeders would take a hint from the experience of breeders of other stock in the matter of cooked food, particularly for delicate, sick and valuable fowls.

Cooking adds to the amount of nutritious matter in some kinds of food, and in all, or nearly all, softens it and renders it easy of digestion. (Cooking, indeed, is not the only method of softening grain. It is sometimes fermented, thus advancing it one stage in the process of digestion before it enters the stomach.)

The evidence for horses, cattle and swine is greatly in favor of cooked diet, both as to the health of the stock, and the per centage of grain in weight.

We boil corn in the kernal, or even in the ear, not letting the ears rest against the bottom of the kettle. Mush is, of course, just as good, but you must grind it and stir it while boiling.

If you use cooked food, alternate it with raw, for the sake of variety, but do not give them together, as the hens will not, as a general thing, touch the boiled corn if the uncooked article is at hand.

Is Poultry Keeping Profitable?

The above question has been asked me many times, and, I am sorry to say, I have heretofore been obliged to say "I did not know." I can now answer very decidedly in the affirmative, having kept a correct account of profit and loss from Dec. 1, 1874 to Dec. 1, 1875.

As a minute statement of statistics is uncalled for, I will only say my profit for the year has been $50 on fifty hens. We have concluded eggs pay pay better than poultry. Unless one can get chicks into market when they are bringing 40c. to 50c. per pound, it does not pay to raise them for market. Of course one must raise enough for his own table; which he would naturally do, as many must be hatched to get 30 or 40 pullets. I keep only two kinds, and think I shall keep but one another year; that will be the Light Brahma. I now have Plymouth Rock, large and handsome, but can see no advantage in keeping them, as everything to be asked for in fowls is combined in the Light Brahma, and they have one great advantage over the Plymouth Rock, namely, picking so much whiter and looking very much cleaner and handsomer dressed.

Condiments for Poultry.

A moderate quantity of cayenne pepper, mustard or ginger can, with great benefit, be added to the food of fowls to increase their vigor, and to stimulate egg production. This diet, although apparently artificial, is really natural; for wild birds of the gallinacean family have access to very many highly spiced berries and buds—articles that give the "game flavor" to their flesh. Although there is more or less of an aromatic principle in wheat, Indian corn and other grains consumed by the domestic fowl, yet the quantity is not sufficient to supply the place of the stronger spices, a taste for which is inherited by the fowl.

The Apiary.

Honey Resources.

Let every bee-keeper prepare a sheet of paper as follows:—Head it with Honey Resources; draw four vertical lines on it, thereby making five columns; over the first column write, Name of Resource; over the second, Commencement; third, Quality; fourth, Quantity; and over the fifth, Duration. As soon as you find your bees are gathering honey in the spring, ascertain the source and quality of the honey being gathered, and enter them in their respective columns, together with the date of commencement. When they cease gathering from this source, note the quantity, and write the length of time which has elapsed since its commencement, the column marked "duration." Continue in the same manner throughout the entire season to record each source from which your bees gather honey. The quantity of honey gathered can be very nearly ascertained by weighing the hives each day and noting their weight.

When we judge of the quantity of honey secreted by different varieties of flowers, by the quantity which is gathered while each kind is in blossom, we must take into consideration the strength and condition of the colony, as it works upon each variety, for its numbers are liable to vary greatly during the honey season. Much also depends upon the weather.

At the end of the season, in looking over the table in which you noted down the different weights of your hives, you will find there were times of scarcity, during which little honey was gathered; and, by referring to the table which we have just described, you can very readily tell what kinds of flowers were in blossom at this time.—This would be a hint for you to cultivate those varieties more extensively another year; or if they were wild flowers or weeds which you did not wish to cultivate, let it be a hint for you to ascertain what kinds of field crops or ornamental flowers are in blossom at time of the year, also for you to cultivate them.

All this may seem considerable trouble, but it will pay.—*Bee Journal.*

Ages of Bees

The queen passes about three days in the egg and five a worm; the workers then close her cell, and she immediately begins to spin her cocoon, which takes her from twenty to twenty-four hours. On the tenth and eleventh days, and perhaps a part of the twelfth day, she seems to be exhausted by her hard labor. She now remains in almost complete repose; she then passes four or five days as a nympha, and on the fifteen to the sixteenth day a perfect queen is attained. Much depends upon the strength of the colony and the heat of the season, which will vary from one to two days.

The drone passes three days in the egg and about six in the worm, and changes into a perfect insect on the twenty-fourth day after the egg is laid. Much depends upon the strength and heat of the colony, which should be about 70° Fah., for their speedy development. They lie in rather a dilatory state for several days after they hatch, before taking wing.

The worker bee spins its cocoon in thirty-six hours. After passing three days in the egg in this state of preparation for a new life, it gradually undergoes a great change, and becomes armed with a firmer body scales of a brownish color and somewhat fringed with light hairs. On its belly it has six rings or scales. After it has reached the twenty-first day of existence—reckoning from the egg—it comes forth from the cell on the twenty-first to the twenty-second day a perfect insect, and is termed an imago. This is the simple stage of the worker bee. As it is fully developed when it comes forth, except in size, it soon becomes a sportive inhabitant of the air, and ready to enter upon the duties of gaining a livelihood, which varies from six to eight days from its birth, then all seems to be business the remainder of their existence.—EX.

BEES ON A SMALL SCALE.—There are many householders whose means will not enable them to buy a cow, or provide keeping for her were they in possession of one. But they may be equal to the purchase of a colony of bees, and to provide hives for the swarms resulting therefrom. Bees, like other stock, require pasturage, but, unlike horses, cattle and sheep, they are free commoners, ranging at will in search of stores, nor can they be arrested and punished for their intrusion upon premises alien to their owners. A single colony of bees, in good condition in the spring, may be counted upon to double or triple their numbers in a single season, securing ample stores for winter consumption, while supplying a gratifying surplus each autumn for household use. This accumulation will prove most acceptable in families, especially while the price of butter rules so high as to place it beyond the reach of those not blessed with elongated and plethoric purses. Try a colony of bees as an experiment.—*Farmers' Union.*

Catalogues Received.

James Vick's, of Rochester; new cuts, neat and spicy. He cuts into the United States Government agriculture affairs lively. Read it.

Briggs Bros., Rochester; very neat.

B. K. Bliss & Sons, of New York; catalogue much improved.

J. H. Gregory, of Marblehead, Mass.; gives accounts of a fresh importation of a melon and other novelties.

D. M. Ferry & Co., Detroit, send us the largest of American catalogues; it is well got up.

Ellwanger & Barry, Rochester, send three catalogues; they speak highly of a new pear.

Stoors, Harrison & Co., Rochester, fruit, bulbs, &c. They are celebrated for the sweet chestnut.

Fleming, New York; Vanderbilt's, New York; Hawkins's, Goshen, and H. Michel's, St. Louis, all contain useful information.

CANADIAN CATALOGUES.

G. Keith, Toronto. He sells more seed than any other house in that city.

J. A. Simmers, Toronto. His greatest specialty is flowers. He has his name up in that city.

W. Rennie, general list of seeds and implements.

W. H. Marcon, Guelph, seeds and superphosphate.

J. & A. Bruce, Hamilton, have the largest and best seed store in Canada.

McColl and Child, of London, both send out good catalogues.

We consider Sutton's Amateur Guide, sent by Sutton & Sons, England, is the best catalogue of the season. We thank each of you for your kindness.

NOTICE.—As our greatest loss consists in the credit system, we are determined to discontinue it as soon as possible. We wish so improve your paper; and, as the credit system prevents our progress, we intend striking off the names of those that are in arrears, and charging those that continue in arrears a higher rate, to make up for the losses of dilinquents. After this date 12½ cents per month will be charged, and all costs of collection will be added. The cash system is the best.

EDITOR.

Patrons of Husbandry.

Meeting of the Executive Committee.

Brantford, Feb. 2, 1876.—Executive Committee met in the Kirby House. Members present:—Worthy Master S. W. Hill, and Bros. Manning, Payne, Daly and Page.

The committee appointed at last meeting report that, after due consideration, they would suggest, for the present, that books with music be purchased of R. H. Thomas, Secretary of Pennsylvania State Grange.

On motion, the account of Colcock & Durnan for printing, and that of G. H. Burgar for stationery, were ordered to be paid.

At the afternoon session, Bro. Gifford was also present.

On motion, the subject of Manufacturing Co. in connection with McLaughlin & McCormick, was laid upon the table.

Resolved, That the sum of $10 be allowed deputies for organizing Granges in Quebec, Nova Scotia and New Brunswick, until Division Granges are formed there; also, that deputies organizing in Ontario, outside the limit of Division Granges, be allowed $5, and 8 cents per mile, one way, for actual miles travelled.

Resolved, That where Granges have been organized since January 1st, 1876, forwarding $15 with their application, such Granges being within the limits of Division Granges, the sum of $5 for each Grange so established be paid to the Division Grange, within the jurisdiction of which such Grange is established, upon application of said Division Grange. Carried.

Resolved, That Granges in Quebec that have not been in working order for some time, be relieved from the payment of back dues, commencing their reports with present quarter.

Moved and resolved, That the forms for reports from Division Granges be furnished by the Dominion Grange free; also, that reports for Subordinate Granges to Division Granges be furnished Division Granges (for distribution among the Subordinate Granges in their jurisdiction) at cost price. Carried.

On motion, the preparation of blanks for business reports from Division and Subordinate Granges was laid over until next meeting of Executive Committee.

It was resolved to postpone further proceedings for the present in the matter of petitions to Parliament asking for a protective tariff on agricultural products.

Resolved, That whereas several Granges have been organized by Masters of Subordinate Granges since the 1st of January, contrary to by-laws which came into effect at that time, placing the work in the hands of deputies, applications thus received be sanctioned by this Committee and laid before the next meeting of the Dominion Grange for ratification. Carried.

Bros. Hill and Manning were appointed a committee to attend to the application to Parliament for incorporation.

The communication from Grange No. 197, asking assistance for a member who lost his buildings by fire, was taken up, and, after due consideration, the following resolution was adopted:—Resolved, That as fire is a casualty against which all may provide by insurance, this Committee do not feel at liberty to take any action in the matter, unless reasonable cause can be shown why such provision by insurance was not taken.

The report of the committee appointed to revise the Parliamentary Guide (a book of instruction for the use of Granges) was read, each section taken up separately and duly considered.

Evening Session.—On motion, the Parliamentary Guide as revised, was adopted, and the Secretary ordered to have 2,000 copies printed; also, to send one copy to each Grange already organized, and one to each new Grange organized in future.

On motion, the appointment of a committee, with instructions to proceed with the application for incorporation, was re-considered, and, in view of the expense attached thereto, a resolution was passed laying the matter over for future consideration.

Moved and seconded, That Bro. Gifford draw up a plan for conducting a manufacturing company in the interests of the Grange, said plan to be laid by the Secretary before the Subordinate Granges, together with blanks to obtain stock for said company. Carried.

The Secretary was instructed to issue dispensations to Division Granges, and also charters, upon application, after sufficient evidence is given that said Granges are in good working order.

The matter of defining boundary lines of Division Granges was laid over until the next meeting of this Committee.

Adjourned to meet at Napanee, June 13.

PELHAM GRANGE.—At a recent meeting of Pelham Grange, the members presented Mr. W. Pemberton Page, on his retirement from office as Secretary on his appointment to be Dominion Secretary, with a handsome secretary worth eighteen dollars, with an address thanking him for the efficient manner in which he had discharged his duties as Secretary to the Pelham Grange. Mr. Page replied in suitable terms, thanking them for the testimonial of their respect, and assuring them that his duties were always made pleasant by the hearty assistance they had at all times given him, and the consciousness that he was aiding in some measure to carry into effect the object of the Order.

DEAR SIR,—We have started a Grange on this island, and, on account of our isolated position and to some extent separate interests from the rest of the province, some of our members think we should have an independent Grange here. I should very much like to have your views on the subject. We have left it to a committee to decide. Their report will be handed in at our next meeting.

Wolfe Island. S. GOING.

Shirley Geing, Master; Arthur H. Dawes, Secretary.

SIR,—There was a Lodge formed here lately of the Patrons of Husbandry which professes to be in connection with the United States National Grange and not the Dominion Grange. I should like to know why there are two distinct organizations. I went to the meeting with the intention of joining, but I declined when I discovered it was not a Canadian affair. Some of the speakers, among others Mr. Turner, of Saugeen, said the advantages would be far greater to be in connection with the States, such as interchange of products, &c. The second reason I did not join them was that two-thirds of the members calculated to get rich out of the proceeds of the Grange, the social or moral aspect being no advantage to them, which, I think, should be the greater part.

North Bruce. JOB CARR.

New Granges.

333, Excelsior. W. Miller, M., West Lorne P. O.; Jacob B. Miller, Sec., Rodney.

334, Markdale. Samuel Douglas, M., Markdale P. O.; Archibald Elliott, Sec., Markdale P. O.

335, Waterloo. Robt. Williamson; M., Preston; Edward Washburn, Sec., Preston.

336, Farmers' Hope. John Kitchen, M., Delhi; James Bain, Sec., Delhi.

337, Ivy. Thos. Parker, M., Ivy; James H. Lyons, Sec., Ivy.

338, Walton Union. Wm. Bell, M., Walton; James Murray, Sec., Walton.

339, Morven. Jacob Rombough, M., Morven; W. R. Gordanier, Sec., Morven.

340, Bruce. Robt. Begg, M., Tiverton; John Tolmie, Sec., Tiverton.

341, Baltimore. Ira Brisbin, M., Baltimore; T. Parsons, Sec., Baltimore.

342, Naven. D. McEachran, M.; Wm. Darville, Sec., Alvinston.

343, Genoa. John Boa, M., Genoa, Quebec; James Gordon, Sec., Genoa.

344, Farmers' Home. Wm. Watson, M., Knatchbull; John Ramsey, Sec., Eden Mills.

345. Col. Wm. Button, M., Belford; Wm. M. Miller, Sec., Green River.

346, Teston. Neil A. Malloy, M., Teston; James Malloy, Sec., Teston.

347, Wexford. Henry Duncan, M., Don; John Ladlay, Sec., Wexford.

348, Morris. J. Salter, M., Wingham P. O.; Wm. B. Mills, Sec., Wingham P. O.

349, Riverside. Peter McVannel, M., St. Mary's; Wm. Ford, Sec., St. Mary's.

350, Northumberland. J. F. Malloy, M., Cobourg; J. J. Johnston, Sec., Grafton.

351, Allandale. Thos. A. Walker, M., Carluke; Peter Renton, Sec., Carluke.

352, Ash Lodge. Fred. McPherson, M., Harpley; J. Agar, Sec., Moray.

353, Grove. Edward Robinson, M., London; Wm. Belton, Sec., London.

354, Lynedoch. Wm. Cowan, M., Lynedoch; E. M. Crysler, Sec., Lynedoch.

355, North Dumfries. James Wilson, M., Galt; James Wallace, Sec., Galt.

356, Ninth Line. John Scarf, M., Harriston; Joseph Montgomery, Sec., Harriston.

357, Canfield. Wm. E. Walker, M., Canfield; John Walters, Sec., Canfield.

358, Harvest Home. Samuel Garry, M., Mitchell; James Hislop, Sec., Mitchell.

359, Chebucto. J. C. Black, M., Truro, Nova Scotia; James N. Crowe, Sec., Truro, Nova Scotia.

360, Glanford. Wm. Calder, M., Glanford; Wm. Findley, Sec., Glanford.

361, Sydenham. Arch. Lindsey, M., Alvinston; Peter McLean, Sec., Alvinston.

362, Woodbine. Tilten Stephesons, M., Orangeville; Wm. Fidder, Sec., Orangeville.

363, Dufferin. Irwin Anderson, M., Relessey; Valentine Dynes, Sec., Relessey.

364, Hawthorn. G. Harkness, M., Annan; James Cannon, Sec., Annan.

365, St. Helens. Robt. Lochart, M., St. Helens P. O.; Robt Murry, Sec., St. Helens P. O.

366, Blue Bell. John L. Brown, M., Danforth; James Lambie, Sec., Danforth.

367, Plains. Henry Tufford, M, Brantford; Thos. Luck, Sec., Brantford.

368, Smithfield. R. P. Jones, M., Smithfield; Henry S. Young, Sec., Trenton.

369, Luther. Thos. Wardrobe, M., Luther; James McBline, Sec., Luther.

Government Agriculture and Politics.

We notice in a political paper an advertisement of seed grain for sale at the model farm, at Guelph. We would ask the question, Is the Government intending to establish a seed shop? also, Do they know what has been the results of such experiments in the United States? 2nd., Should not the Government patronage be given, in agricultural matters, to agricultural papers? or is their very existence to be ignored? Should not information be given, at brief intervals, to the public, in place of writing for musty blue books. We saw the Bohemian Oats growing on the Government farm. We have asked for information regarding the practical results, &c., but have received no information about them—either good or bad, the public should know.

An interesting report of the progress of this exhibition will appear in our next issue. It will contain particulars of our display, and information for intending visitors. As the time for opening draws near, increased efforts are being made by our farmers, breeders and others to place Canada in the best position possible, and to win laurels for our Dominion.

We would call the attention of our subscribers to the notice in this issue of the meeting of the Agricultural Investment Society and Savings Bank of this city, and have pleasure in recommending borrowers, as well as depositors, to this Institution. The society is well supplied with funds, and is loaning on as easy terms as any similar institution in the province. Depositors in the Savings Bank are getting 5 to 6 per cent. interest, with the satisfaction of knowing that their money is as secure as if deposited in the Government Savings Department.

ACCORDING to notice given in the January number, the FARMERS' ADVOCATE and Agricultural Emporium are carried on separate from each other. Letters on business connected with the paper should be addressed W. Weld, or FARMERS' ADVOCATE Office; if in regard to purchase or sale of seeds or implements, you should address — Brown, or Agricultural Emporium. Mr. Brown is from the Lawson Seed Company's establishments, of London and Edinburgh, and has a thorough knowledge of the seed business. See advertisement in this issue.

A CORRESPONDENT desires to ascertain the relative value of the best seed drill as compared to the best broadcast seeder, worked on the same principle, except that the seed is scattered over the ground and cultivated by the cultivator's teeth — both sowing peas and grain. Will some of our correspondents please answer.

FRUIT FROM NOVA SCOTIA.—A Nova Scotia farmer who sent a barrel of apples to the fruit exhibition at Birmingham, England, has been informed officially that though there was an exceptionally good show of English apples, his fruit beat them all in size, and were very fair indeed in color.

The third volume of the Canadian Shorthorn Herd Book is now published. It is well got up, and contains the representation of many very fine animals. They can be procured by applying to H. C. Thomson, Secretary Agricultural Association, Toronto, Ont.

Persons desirous of procuring Shorthorns, Herfords or Suffolk breeds might find it to their advantage to apply to F. W. Stone, Guelph. See advertisement.

WE would call the attention of our readers who require really good cattle or horses, to those advertised in this number.

Live Stock Notes.

Mr. Caigwillie, of Aberdeenshire, the red ox that has so often been a prize winner, to Mr. Reid, of Alford, for 1,000 guineas. He is only two years and eleven months old.

Mr. James Graham, of Carlisle, has sold two polled Galloway bull calves at 50 guineas each.

The sale of Mr. McCulloch's herd of Shorthorns was held at Essendon, Australia. The herd of cattle, consisting of 11 bulls and 57 cows, realized £16,285 10s. The highest price paid for a bull was 650 guineas. Easthope Lady 6th, was sold for 640 guineas, and Pink, 775 guineas. Three brood mares, two two-year-old colts, and one yearling realized £2756 5s. Two imported brood mares, with foals at foot, were bought, one at 800 guineas, the other at 850 guineas.

A convention of the Shorthorn breeders of Missouri is proposed, to be held at Broonville on the 1st Monday of April next.

At a sale of Norman-Penheron horses at Chicago, Feb. 10th, there were sold one at $2,200; one at $1,775, one at $1,800, and one at $1,250.

The *Counrty Gentleman*, noticing a sale of Ayrshires, remarks :—The breed is rapidly growing in favor in that cheese producing country.

At the late sale of short-horns, the property of Mr. J. M. Bell, of Atha, thirty-five head were sold at an ave.age price $240. Of these 5 were bulls at an average of $267. The highest prices realized were, Kate Miller, $850, and Nisklan 6th and calf, $300.

Mr. A. Whitman, Mass., has sold from his Shorthorn herd 33 cows and heifers with the imported bull Bean, of Oxford, 2nd, for $26,000.

Mr. C. M. Laning, Lansing, Niagara, Ont., has sold to G. W. Miller, Grantham, the Groynne Shorthorn bull Consul.

Five promising heifers of Booth breed have been purchased from the breeder, Hon. M H. Cochrane, Compton, Ont., by Mr. A. H. Brown, Northumberland E. It is said they cost 3,500 guineas.

22nd Duke of Airdrie.

The 22nd Duke of Airdrie, 16695, is a dark red, with little white, bred by A. J. Alexander, Woodburn, Ky., the property of Richard Gibson, London, Ont., calved Sept. 9, 1871; got by Royal Oxford (18774), out of 6th Duchess of Airdrie by Clifton Duke (23580), gr. dam 4th Duchess of Airdrie, &c., &c., and so on through 16 crosses of the celebrated Duchess family.

His sire was the last pure Oxford living, and was very celebrated as a stock getter, amongst the most prominent being the 13th, 14th, 15th, 17th, 19th, 22nd and 23rd Dukes of Airdrie, and the 8th, 9th, 10th, 11th, 12th Duchesses of Airdrie.

The 8th was exported to England, the 9th was the dam of the 24th Duke, lately sold for $12,000, and 20th Duchess sold for $18,000 to Mr. Fox, England.

The 10th, now owned by M. H. Cochrane, is one of the best breeding cows of the family, and gr. dam of the 7 months old calf sold at Toronto for $18,000 to Avery & Murphy, Detroit.

The 11th was dam of 16th Duchess, sold to go to England for $18,000, and whose calf, 4 months old, sold for $17,500, last October, to J. H. Spears & Co., Ill.

The 14th Duke, lately returned to his native state, and, though 10 years old, realized nearly $5,000. The 17th has also gone back to Kentucky with $4,500 on his head, though nine years old. The 19th was lately purchased by E. Cobb, Ill., for $9,000, and the 23rd was sold for $9,600 to J. P. Sanborn, Port Huron.

The 22nd Duke has proved himself a very superior sire; but 3 of his stock have been offered in the sale ring, and they have realized good prices, viz.: Duchess of Huron, 20 months old, made $2,900; Duchess of Cambridge, 19 months, $2,750; and 12th Duchess of Springwood, 2 years and 2 months, $2,210.

He is the only Duke bull in Ontario, and, for some time, the only one in Canada, until M. H. Cochrane purchased the 2nd Duke of Hillhurst for $14,000.

THE DUKE OF AIRDRIE, a cut of which appears in this paper, was drawn and engraved by Canadian Artists. Our Canadian artists, we feel satisfied from the improvements they are making, will, in future, be able to produce works equal to any other artists. Should any of our subscribers have any good animals they wish engraved, if they would confer with us we would give them full particulars regarding them.

The Story.

Ruth's Stepfather.

A curious trade to take to, but then it has grown to be profitable. Things were at a low ebb with me when I took it up, while now——

There, I won't boast, only say that I'm thankful for it. Poverty comes in at the door, and love flies out of the window, so they say; but that's all nonsense, or else your poor people would be always miserable, while, according to my experience, your poor man is often more light-hearted than the man with thousands.

I was at my wit's end for something to do, and sat nibbling my nails one day, and grumbling horribly.

"Don't go on like that, Tom," says my wife, "things might be worse."

"How?" I said.

"Well, we might have Luke at home, and he is doing well."

Luke's our boy, you know, and we had got him into a merchant's office, where he seemed likely to stay; but I was in a grumbling fit then, and there was a clickety-click noise going on in the next room that fidgeted me terribly.

"Things can't be worse," I said, angrily; and I was going to prove myself in the wrong by making my wife cry, when there was a knock at the door.

"Come in," I said, and a fellow-lodger put in his head.

"Are you good at works, Mr. Smith," he said.

"What works?" I said; 'fireworks—gasworks?"

"No, no; "I mean works of things as goes with wheels and springs."

"Middling," I said, for I was fond of pulling clocks to pieces and trying to invent.

"I wish you'd come and look at this sewing machine of mine, for I can't get it to go."

Sewing machines were newish in those days, and I got up to have a look at it, and, after an hour's fiddling about, I began to see a bit the reason why—the purpose, you know, of all the screws and cranks and wheels; I found out, too, why our neighbor's wife—who was a dressmaker, and had just started one—could not get it to go; and before night, by thinking, and putting this and that together, had got her in the way of working it pretty steadily, though, with my clumsy fingers, I couldn't have done it myself.

I had my bit of dinner and tea with those people, and they forced half-a-crown upon me as well, and I went back feeling like a new man, so refreshing had been that bit of work.

'There," said my wife, "I told you something would come."

"Well, so you did," I said; "but that something is rather small."

But the very next day—as we were living in the midst of people who were fast taking to sewing machines—if the folks from the next house didn't want me to look at theirs! and then, the news spreading, as news will spread, that there was somebody who could cobble and tinker machinery without putting people to the expense that makers would if the jobs didn't come in fast, so that I was obliged to get files and drills and a vice—regular set of too's by degrees; and at last I was as busy as a bee from morning to night, and whistling over my work as happy as a king.

Of course, every now and then I got a breakage, but I could generally get over that by buying a new wheel, or spindle, or what not. Next we got to supplying shuttles, and needles and machine cotton. Soon after I bought a machine of a man who was tired of it. Next week I sold it at a profit; bought another, and another, and sold them; then got to taking them and money in exchange for new ones; and one way or another became a regular big dealer, as you see.

Hundred? Why, new, second-hand, and with those being repaired up-stairs by the men, I've got at least three hundred on the premises, while if anybody had told me fifteen years ago that I should be doing this, I should have laughed at him.

That pretty girl showing and explaining the machine to a customer? That's Ruth, that is. No, not my daughter—yet, but she soon will be. Poor girl, I always think of her and of bread thrown upon the waters at the same time.

Curious idea that; you will say, but I'll tell you why

In our trade we have strange people to deal with. Most of 'em are poor, and can't buy a machine right off, but are ready and willing to pay so much a week, That suits them, and it suits me, if they'll only keep the payments up to the end.

You won't believe me, perhaps, but some of them don't do that. Some of them leave their lodgings, and I never see them again; and the most curious part is that the sewing machine disappears with them, and I never see that again. Many a one, too, that has disappeared like that I do see again—perhaps have it brought here by some one to be repaired, or exchanged for a bigger, or for one by a different maker; for if you look round here you'll see I've got all kinds—new and old, little domestics and big trades—there, you name any maker, and see if I don't bring you out one of his works.

Well, when I ask these people where they got the machine—for I always know them by the number—it turns out that they've bought it through an advertisement, or at a sale-room, or may be out of a pawn broker's shop.

But I've had plenty of honest people to deal with too—them as have come straight forward and told me they couldn't keep up their payments, and ask me to take their machine back, when I'd allow them as much as I thought fair, and 'twould be an end to a pleasant transaction.

The way I've been bitten, though, by some folks has made me that case-hardened that sometimes I've wondered whether I'd got any heart left, and the wife's had to interfere, telling me I've been spoiled with prosperity, and grown unfeeling.

It was she made me give way about Ruth, for one day, after having all my bristles set up by finding out that three good, sound machines, by best makers, had gone nobody knew where, who should come into the shop but a ladylike-looking woman in very shabby widow's weeds. She wanted a machine for herself and daughter to learn, and said she had heard that I would take the money by instalments. Now just half an hour before, by our shop clock, I had made a vow that I'd give up all that part of the trade, and I was very rough with her—just as I am when I'm cross—and said, "No."

"But you will if the lady gives security," says my wife hastily.

The poor woman gave such a woe-begone look at us that it made me more out of temper than ever, for I could feel that if I stopped I should have to let her have one at her own terms. And so it was; for, there, if I didn't let her have a first-class machine, as good as new, she only paying seven and six down, and undertaking to pay half-a-crown a week, and no more security than nothing!

To make it worse, too, if I didn't send the thing home without charge—Luke going with it, for he was back at home now, keeping my books, being grown into a fine young fellow of five-and-twenty; and I sat and growled the whole of the rest of the day, calling myself all the weak-minded idiots under the sun, and telling the wife that business was going to the dogs, and I should be ruined.

"You ought to be ashamed of, yourself, Tom," she said.

"So I am," says 1. "I didn't think I could be such a fool."

"Such a fool as to do a good, kind action to one who was evidently a lady born, and come down in the world!"

"Yes," I says, "to living in Bennett's Place, where I've sunk no less than ten machines in five years."

"Yes," says the wife, "and cleared hundreds of pounds. Tom, I'm ashamed of you—you. a man with twenty workmen busy up-stairs, a couple of thousand pound's worth of stock, and in the bank a——"

"Hold you tongue, will you!" I said, roughly, and went out into the shop to try and work it all off.

Luke came back soon after, looking very strange, and I was at him directly.

"Where's the seven an' six?" I says, angrily.

He didn't answer, but put three half crown's down on the desk, took out the book, made his entries—date of delivery, first payment, when the other's due, and all the rest of it—and was then going into the house.

"Mind," I says, sharply, "those payments are to be kept up to the day; and to-morrow you go to Rolly's, who live nearly opposite to 'em, and tell 'em to keep an eye on the widow, or we shall lose another machine."

"You needn't be afraid, father," he says, coldly; "they're honest enough, only poor."

I was just in that humor, that I wanted to quarrel with somebody, and that did it."

"When I ask you for your opinion, young man, you give it to me; and when I tell you to do a thing, you do it," I says, in as savage a way as ever I spoke to the lad. "You go over to-morrow and tell Rolly's to keep a strict look-out on those people—do you hear?"

"Father," he says, looking me full in the face, 'I couldn't insult them by doing such a thing," when, without another word, he walked quietly out of the shop, leaving me worse than ever.

For that boy had never spoken to me like that before, and I should have gone after him, feeling mad like, only some people came in, and I didn't see him again till evening, and a good thing, too, for I'm sure I should have said all sorts of things to the boy, that I should have been sorry for after. And there I was, fuming and fretting about, savage with everybody, giving short answers, snapping at the wife, and feeling as a man does feel when he knows that he has been in the wrong and hasn't the heart to go and own it.

It was about eight o'clock that I was sitting by the parlor fire, with the wife working and very quiet, when Luke came in from the workshop with a book under his arm, for he had been totting up the men's piecework, and what was due to them; and the sight of him made me feel as if I must quarrel.

He saw it, too, but he said nothing, only put the accounts away and began to read.

The wife saw the storm brewing, and she knew how put out I was, for I had not lit my pipe, nor yet had my evening nap, which I always have after tea, so she did what she knew so well how to do—filled my pipe, forced it into my hand, and, just as I was going to dash it to pieces in the ashes, she gave me one of her old looks, kissed me on the forehead, as, with one hand, she pressed me back into chair, and then, with the other, she lit a splint and held it to my tobacco.

I was done. She always gets over me like that; and, after smoking in silence for half an hour, I was lying back with my eyes closed, dropping off to sleep, when my wife said (what had gone before I hadn't heard)—

"Yes, he's asleep now."

That woke me up, of course, and if I didn't lie there shamming and heard all they said in a whisper.

"How came you to make him more vexed than he was, Luke?" says the wife; and he told her.

"I couldn't do it, mother," he said, excitedly. "It was heart-breaking. She's living in a wretched room there with her daughter; and, mother, when I saw her I felt as if—there, I can't tell you."

"Go on, Luke," she said.

"The're half starved," he said, in a husky way. "Oh, mother! it's horrible. Such a sweet, beautiful girl, and the poor woman herself dying almost with the same terrible disease."

The wife sighed.

"They told me," he went on, "how hard they had tried to live by ordinary needlework, and failed, and that, as a last resource, they had tried to get the machine."

"Poor things!" says the wife; "but are you sure the mother was a lady?"

"A clergyman's widow," says Luke, hastily; "there isn't a doubt about it. Poor girl! and they've got to learn to use it before it will be of any use."

"Poor *girl*, Luke?" says the wife, softly; and I saw, through my eyelashes that she laid a hand upon his arm, and was looking curiously at him, when, if he didn't cover his face with his hands, rest his elbows on the table, and give a low groan. Then the old woman got up, stood behind his chair, and began playing with and caressing his hair like the foolish old mother would.

"Mother," he says, suddenly, "will you go and see them?"

She didn't answer for a minute, only stood looking down at him, and then said, softly,

"They paid you the first money?"

To be Continued.

Minnie May's Department.

Housekeeping Suggestions.

A few words to our readers concerning two good requisites.—Patience and dispatch. These are two good requisites for successful housekeeping, and they are often sadly wanting. Young ladies should discipline their fingers to work rapidly—it is tiresome to watch some people work; they don't seem to have any ambition, but do it as if they were unwilling, or did not care whether it was done or not. When sewing, you will see them put the needle in so slowly, and draw the thread out as leisurely; just as if they were afraid of breaking it. A garment is on hand so long one is tired of seeing it, and a dress seems old before it is finished. Now, girls, the opposite habit is easy to learn; just try and break yourselves of slow going habits. If you have a pair of stockings to mend, or cakes and tarts to bake for tea, see in just how little time you can do it. I remember visiting at a friend's house once, after breakfast, she excused herself for few moments, and in a short time she returned, having made a delicious pudding for dinner and a cake for tea. The same dispatch characterized all her movements. The need of patience in making small resources go a long ways, and is very essential to many of our homes. With patience and economy we can turn our old clothes and make look fresh and new; many a hasty cook can also make an excellent dinner from yesterday's remnants, while others would throw away, as being quite too little to be of any use. The same rule applies to many things which ought to be studied and practised. MINNIE MAY.

MY DEAR MINNIE MAY,—I was much pleased with the recipe for gingerbread pudding in your last number; and with your permission I will add one that I know to be good.

TAPIOCA PUDDING.

Wash the tapioca thoroughly; take two teaspoonfuls to one quart of milk; let it simmer over the fire until soft; add the yokes of four eggs, well beaten; sweeten and flavor to taste; bake three-quarters of an hour. I have the whites beaten to a stiff froth, with two tablespoons of fine white sugar; with a spoon drop this nice'y over the pudding in little moulds; set it in the oven to make a delicate brown. To be eaten with sugared cream. L. SIFTON, New York.

Recipes from Correspondents.

DEAR MINNIE MAY,—I have often thought I would like to add my mite to your useful department, if you can find room for it. I think you must take great pains in selecting your recipes. I have tried a great many of them and always find them good. I am a great vegetarian, so I will tell you how I am fond of having some of them cooked.

BOILED ONIONS.

Take the outside skin from white onions as uniform in size as possible; lay them in cold salt and water one hour; boil them in milk and water until thoroughly tender; lay them in a deep dish, and pour over them melted butter.

FLAKED ONIONS.

Boil two good sized onions in water; put them aside until cold; make some butter very hot in a frying-pan; season the onions and put into it, and bake over the fire till brown; drain and serve on toast with parsley.

BOILED PARSNIPS.

After they are boiled tender, let them become perfectly cold; slice thin lengthways, and boil until nicely browned; spread them with butter; season with pepper and salt.

JENNIE IRNE, Montreal.

TO WASH KID GLOVES.

DEAR MINNIE MAY,—I am very fond of light colored kid gloves, they look so delicate and stylish for young ladies. A great many object to light kids in consequence of them soiling so easily. Therefore I enclose a recipe to the ADVOCATE for cleaning kid gloves which I use and can recommend.

Have ready a little new milk in one saucer, and a piece of brown soap in another, and a clean cloth or towel folded three or four times. On the cloth spread out the gloves smooth and neat; take a piece of flannel, dip it in the milk, then rub off a good quantity of soap to the wetted flannel, and commence downwards, towards the fingers, holding it firmly with the left hand. Continue this process until the glove—if white—looks of a dingy yellow, though dirty, appearance; if colored till it looks dark and spoiled, lay it up to dry, and old gloves will soon look nearly new.

STELLA FLOCK, Hamilton.

BEEFSTEAK PUDDING.

Prepare a good suet; crust and line a dish with it; put in layers of raw steak with onions chopped fine; season with salt and cayenne pepper; add a table-spoonful of tomato and mushroom catsup and a cup of water; cover with crust and boil two hours. LIZZIE J., Chicago.

TO MAKE HOP YEAST.

One handful of hops in two quarts of cold water; let boil for fifteen minutes; take one tablespoonful of salt; one of flour; two of sugar; five or six potatoes; mash fine; pour on the hop water; mix and let stand till luke warm; put in a cup of yeast; let stand about 24 hours; then bottle up air tight. It will keep for two or three months; one cup is sufficient for four or five loaves. P. WEEKS.

RECIPE FOR EGG-NOGG.—Beat thoroughly the yokes of eight eggs, with one pound of granulated sugar; with which mix one-half gallon of fresh, rich milk; then pour upon it, very slowly, stirring the eggs and milk briskly, a pint and a half of best Jamaica rum; if not sweet enough, add more sugar; have ready the whites of the eggs beaten to a froth, with a little pulverized sugar; stir in about one-half; put the other on top; place it on ice. This is first-class egg-nogg.—ALEXANDRIA.

TO CLEAN CARPETS.—Sometimes flour (dry) rubbed in and repeated will be efficacious; I have never found fuller's earth to fail. Mix it in a paste and spread it on (with a knife) wet; cover it over with a cloth or paper pinned over to prevent tracking it around; leave on a day or two; if not then removed renew the supply, and scrape carefully off when the grease is removed.—RIDGEWOOD.

TOOTH POWDER.

The safest and best powder to use is wood soot, taken from a chimney where no coals are ever used, or stovepipes led into it. It should be taken from as high up the chimney as possible, and sifted through a bit of muslin, so as to exclude any hard particles. This is much softer than anything of a mineral nature, or than any of the dentrifices so much puffed in the papers. A SUBSCRIBER.

Don't Stay Too Late.

Says a recent writer: One of the advantages of being "past thirty" is, that one, now and then, can put in a word of good motherly advice to the other sex. So I'll begin at once, and say to any single gentleman reader who chooses to listen—don't stay too late when you go to spend a quiet evening with a young lady. It is not fair; it is short-sighted, and pretty sure to wear out your welcome.

It won't hurt you to be longed for after you are gone; but beware of ever causing a girl to give a sigh of relief when the hall door closes after you. There is a sand man for the parlor as well as for the nursery; and after a certain hour, except in special cases, whenever he finds the eyes too well drilled to succumb to his attacks, he sprinkles his sand around the heart. After that your best efforts to please are wasted.

I know all about it. I've received young gentlemen visitors in my day; yes, and enjoyed receiving them, if ever a girl did. I think all day that perhaps John, for instance, might come, in the evening; and on these occasions I've come down to tea with a rosebud in my hair, and a happy flutter in my heart. Yes, and I've started at the knock at the front door, and when, at last he came in, smiling and blowing, I've looked just as if I did'nt care a single bit. There were others, too—not Johns' by any means, but friends who were always welcome, and whom it was right pleasant to see. But that did not make null and void all somnific law; it did'nt make it desirable that I should feel a rebuke in everybody's "Good morning!" when, with throbbing head I came down to breakfast. No, you may be sure it didn't.

Therefore, I have learnt to honor those who knew it was time to go when half-past ten came; while those who did'nt know it was the bane of my existence.

So, dear single gentleman, whoever and wherever you are, the next time you go out to spend a quiet evening, with a lady, remember my words. Young girls are human; they require rest and sleep; they are amenable to benefits of domestic system and order; they have a precious heritage of strength, health, and good looks to guard.

Don't go too late, and don't go by inches. "Good bye, is the flower of a welcome. If you wish to retain its aroma, the fewer leaves it sheds the better. E. WALSH.

SHOULD NOT MOTHERS BE MORE MOTHERLY?—We are often asked the question, "Do you think it is right to correspond with a gentleman without my parents' consent?" Human nature will be human nature always. Girls will fall in love—or at least form predilections—earlier than they ought, and their affections will not always take the bent their parents would prefer. But what cannot be wholly prevented—what is idle to prohibit—might be regulated, restrained, guided, and controlled far more than it is. The great reason is that mothers do not cultivate terms of sufficient intimacy with their daughters. Young girls are afraid to confide all their thoughts and all their acts freely to their mothers. They have too much reason to fear that if they do so, instead of sympathy and kindness, they will be met with rebuke and reproaches. A mother cannot make a greater mistake than to let her daughters grow up in fear and awe of her. She should study always to win the confidence and love of her children, to make them feel towards a fond sister, rather than to regard her as a stern ruler. In this way many a secret correspondence and many a sly flirtation, not conducive to the daughter's happiness and welfare, which now occur, would be avoided.

A WIFE'S QUALIFICATIONS.—There are three things which a good wife should resemble, and yet those three things which she should not resemble. She should be like a town clock—keep time and regularity. She should not, however, be like a town clock—speak so loudly that all the town may hear her. She should be like a snail, prudent, and keep within her own house. But she should not move like a snail, nor carry all she has upon her back. She would be like an echo—speak when spoken to. But she should not be like an echo, determined always to have the last word.

RULES OF HEALTH.—Live moderately, exercise freely, bathe daily, rise early, dress lightly, take things coolly, eschew wine and strong drink, shun doctors' drugs, lawyers and lawsuits, marry a good wife, and endeavor to make her happy.

PRIZE LIST FOR SUBSCRIBERS.

Now is the time to subscribe for the Farmer's Advocate. Get the back numbers and form a handsome volume with them. MARK! It is the largest agricultural paper in the Dominion. It has the largest circulation of any agricultural paper in Canada, and is the best and most practical paper of the kind published in America for Canadian farmers. Its staff of contributors are the ablest and best authorities that can be found. It treats on every department pertaining to agriculture, and should be in every farmer's hands in the country. It will form a splendid volume of 300 pages, handsomely illustrated, in the year. It is the best and has stood the test, and its circulation speaks for itself. The prize list that we are offering in this issue we hope will be taken advantage of, and let every one of our subscribers secure a prize by sending us one or more subscribers.

For one new subscriber you may have the choice of any of the following articles, which will be sent post paid:—2 lbs. Odessa Wheat, 2 lbs. Red Fern Wheat, 2 lbs. 1st prize Spring Wheat at Provincial Exhibition, 1875; 2 lbs. pure Black Tartar Oats, 2 lbs. Australian Oats, 2 lbs. Silver-Hulled Buckwheat, 2 lbs. Early Vermont potatoes, 2 lbs. Snow Flake potatoes, 2 lbs. Brownell's Beauty potatoes, ¼ lb. Goble's Champion potato, 1 Downing Seedling Gooseberries, 12 Cheney Strawberries, 1 package of selected flower seed, 1 package new cut-leaved Lettuce—never been tried here, but highly spoken of in the U. S. Parties sending one, two or three, or more names, can choose a prize for each one. Address—FARMER'S ADVOCATE, London, Ont.

Uncle Tom's Department.

Special Notice to Puzzlers.

It is impossible for me, dear Nephews and Neices, to tell you "how" to find out the different kinds of puzzles; if you do not understand them at first, wait until the answer appears, and then you know all about it. Several correct answers to the January puzzles were received too late for credit in the February number. All communications must be received by the 15th, to be issued in the following month.

Our little Nephews and Neices have supplied us liberally with puzzles this month, that we shall not be able to publish all, but will endeavor to choose the best, and thank them all, hoping they will not forget us in the following months. Please send us original puzzles, and by no means those which have been inserted in these columns before.

UNCLE TOM.

Encourage the Boys.

I should like to say a few words for the boys, for I think that some of them are wrongly used. There are many farmers' sons who work for years with little or no encouragement, for they are charged with laziness. Now it is hard to work with no thoughts of recompense. Who can blame them for becoming dissatisfied with farming and going into the city to seek employment. Fathers should look to their sons' welfare, and not treat them as hired men; give them a share in the stock, and let them have the profits of a plot of ground which they can plant and cultivate as they wish. The boys thus encouraged will take a new interest in the work about them that will doubly repay you.

UNCLE TOM.

Puzzles.

16.—RIDDLE.

All alone by the sea,
Seldom any visit me;
Yet thousands see me every year,
And many an anxious heart I cheer.

H. CLARKE.

17.—Which is the most polite—the organ or bells of a church? JAMES TONGOOD.

18.—Five hundred begins it, five hundred ends it; the first of all letters, the first of all figures, and five in the middle remains. J. RUSTON.

19.—I am a word of five letters; take away two and leave one. J. S. M.

20—Heret dautss a seltac yb het ase
Hitn na canteni Juke dan stnterr cther
Dan ni ti swelld a dyla rear
Chir dan rolley thin nogled riha
Yb het dwil resan shapglin rawily.

FANNY.

21.—NUMERICAL ENIGMA.

I am composed of 18 letters.
My 11, 9, 7 is a part of the human body;
My 17, 8, 5 is a beverage;
My 1, 14, 16, 12 is a reptile;
My 2, 5, 6, 17 is an animal;
My 15, 11, 13, 18 is a cavern;
My 10, 3, 18, 9 is a prophet;
My 1, 2, 5, 7, 8, 10 is an English river.
My whole is a first-class Canadian periodical.

W. BROUGHTON.

22.—PICTORIAL REBUS.

A place in Canada.

23.—CROSS-WORD ENIGMA.

My first is in peach, but not in plum;
My next is in hand, but not in thumb;
My third is in rat, but not in mouse;
My fourth is in room, but not in house;
My fifth is in Bill, but not in Sam;
My sixth is in sheep, but not in lamb;
And now, if the letters you rightly take,
The name of a little girl they'll make.

HATTIE HAVILAND.

24.—ANAGRAMS ON WELL-KNOWN STATESMEN.

1. Hard colds join man.
2. I bad Jennie similar.
3. Nice crisp bark, M.
3. No lad, I will stem war, gate.

W. BROUGHTON.

25.—NUMERICAL ENIGMA.

I am composed of twenty letters.
My 3, 2, 4, 6 is a number;
My 17, 8, 9 is a month;
My 13. 14, 2, 3 is something sore;
My 16, 5, 4 is something bright;
My 7, 8, 15, 9 is a girl's name;
My 11, 18, 19 is the lion's home;
My 13, 14, 19 is a kitchen utensil;
My 13, 14, 15, 16 is a portion of anything.
My whole is something to be seen in the FARMER'S ADVOCATE every month. J. WARREN.

26.—PICTORIAL REBUS.

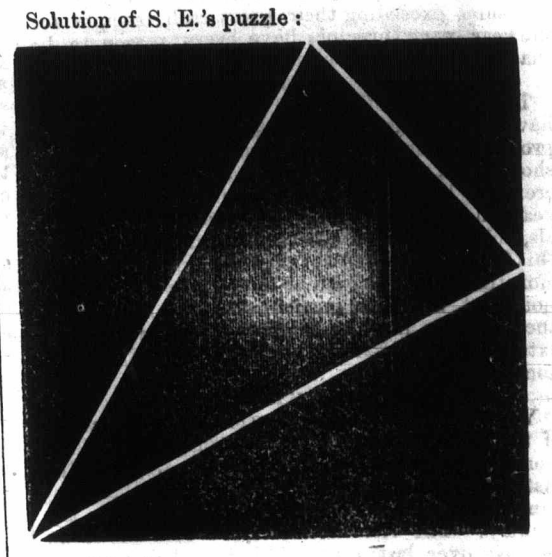
A person of distinction.

27.—ENIGMA.

I'm a well known individual, persistent, patient, wise,
If "mind were measure of the man," not insignificant in size;
But whatever man may think of me, I know my place and station,
And strive to do my duty in my day and generation.
I'm a thorough cosmopolitan, and tho' not given to roam,
In every land and every clime can make myself a home.
On my personal appearance I have no words to waste,
Such things are really matters of individual taste;
The limbs I have, the clothes I wear, are good enough for me;
I've hands to toil, a mind to plan, and keen, bright eyes to see.
Whilst I'm reputed wise, and have respect for education,
School-boys of every age and class are my abomination;
That restless and enquiring mind so vaunted by each sire,
Is oft to me a cause of woe, destruction swift and dire.
Like many a "savant," I abhor the prying housewife too;
With broom and duster, I have wished her oft at Timbuctoo.
One's privacy is never safe when such are on the fly,
One's air-castles are swept away, and plans set all awry.
As to attainments, I can claim in science no mean place,—
That is if you'll consider me a sample of my race;
With genius of the highest rank I industry combine,
I'm eminently practical, in geometry I shine.
Blondin and Leotur may find in me a rival in their fame,
For I'm a fearless acrobat—right worthy of the name.
Like every dunce or demagogue who now harangues the masses,
I do not hesitate to say—"I'm one of the working classes."
I am a skilful architect; a cunning hunter I;
My manufactures with the looms of East or West may vie,
I am a keen anatomist, and can take bones asunder
Where many a prizeman of "McGill" would fear to make a blunder.
Professor Dawson, too, will own (I owe him an apology)
That I am pretty well made up in my meteorology.
In politics a radical, I fear no monarch's frown,
And once I taught a lesson which gained a prince his crown;
Where fawning courtiers kneel I hold my own in palace halls,
Yet do not scorn the humble cot, with bare, unlovely walls.
I have my summer residence within a leafy bower,
And houses that I visit at when wintry storm-clouds lower;
Though often an unwelcome guest, man would my claim refuse,
Veiling his want of courtesy with plausible excuse;
His lack of hospitality but makes me greater tease,
I'll come and go, I'll work and play just when and where I please;
"My own house is my castle," may suit a churlish man,
But I give him timely warning—I'll storm it if I can.
I covet not his worldly goods, in purse I'd hurt him not,
I only ask for room to toil, a place to swing my cot.
God's earth so vast, so nobly planned, is not made for the few;
Each creature rightly claims a nook in which his work to do.
Don't talk to me of vestal rights and territorial claims,
Let those who make these bug-bears be frightened at their names;
Don't talk of municipal rates and taxes manifold,
'Tis very well to pay your way when God has given the gold;
But when a creature's nothing else to bring him to the van,
Then "pluck and push for me," say I, and "let him win who can,"
For tho' when purposes will cross, the weakest gets the wall,
Yet perseverance wins the day,—there's room enough for all.
Now, friends, you have my photograph; do I walk, or swim, or fly?
Moving on land, in sea, or sky—say, who or what am I?

Answers to February Puzzles.

Solution of S. E.'s puzzle:



9.—A book.

10.—Dictionary.

11.—He hitches two horses to the mill and grinds one bushel, then he takes out one horse and puts in another, and grinds one bushel; one horse has now ground two bushels. He is unhitched, and the one that has already ground one bushel is put in his place, and the remaining bushel is ground; each horse grinds two bushels.

12.—Uncle Tom's Department.

13.—
M
Kid
Madam
Griddle
Middlesex
Mineral
Pasty
Pen
X

14.—Air. 15.—Love.

Names of those who have sent in correct answers to puzzles:—

Margaret George, Eliza Shier, Janet Shier, Wm. Broughton, Stella M. Duart, R. S. Thompson, R. W. Kerr, Eliza Sherlock, David A. Stewart, Simon Erb, Robt. Reesor, J. M. Reesor, George Bremer, A. Shier, S. P. Dey, James B. Towgood, Colon Blake, Julia Warren, George House, David McKervie, Maggie Sym, R. Gibson, George H. Littlewood, Hattie Haviland, Robert Gray, Jas. H. Cross, J. H. Houser, Sarah M. Leroy, Jas. Armable, Richard and Geo. Barley, J. C. Hunter, C. W. Rutledge, J. Taylor.

Agricultural Mutual Assurance Association of Canada.

SIXTEENTH ANNUAL MEETING.

To the Members of the Agricultural Mutual Assurance Association of Canada:—

Your Board of Directors, in accordance with their duty, have now to lay before you their 16th annual report:—

The progress of the Association since its first establishment has, from year to year, made it necessary for the Directors to congratulate you on the volume of the business done, and this year has been no exception; so it would appear that in this respect it might be as well to stereotype the expression "increased," so far as your Association is concerned.

LOSSES.

The losses paid during the year have amounted to $59,423.70. They were 232 in number; 180 of these losses occurred during the year, amounting to $41,584.01, and 52 claims that had taken place in the year 1874 and previously, which, through not being notified in time, or were awaiting proof, were not included in last year's report, amounted in the aggregate to the sum of $17,839.69. The Board rejected 15 losses as not being valid claims, and they foot up to about $5,292.10.

The claims rejected have been so treated, not on technical grounds, but on account of either unmistakable fraud or the grossest carelessness on the part of the insurers. That your Board are not inclined to offer whimsical objections to claims, is evident by the very small sums paid for law expenses, as shown in the financial statement. The loss account reached $14,376.41 higher than that of last year, but as the year 1875 has been one fraught with losses to all insurance companies, some of which have, according to their reports, lost sums exceeding their gross cash receipts for the year, your Directors have every reason to be thankful for their good position in this respect.

POLICIES.

The number of policies issued during the year have been 8,805, on the cash system; and 3,904, on the promisory note system, a total of 12,709, with 282 short-dated policies, making in all 12,991, or an increase of 1,497 over the total number in force last year. In the face of all the opposition of rival mutuals, and the cutting down in rates of stock companies, this increase is more than surprising. It clearly demonstrates that the public appreciate the Association that first inaugurated cheap and fair insurance for the farming community, and afterwards extended its benefits to the occupiers of detached homesteads.

ECONOMY OF MANAGEMENT.

Your Directors can again lay claim to the practice of the greatest economy in the management of the Company's affairs, the expenses of working the institution being half the cost of some other companies, and less than any other company in the country. The item of Director's fees shows an increase over last year. This is to be accounted for from the extra per diem allowance voted by the members at the last annual meeting, and from the fact that it became absolutely necessary for the proper administration of the Company's affairs that additional time should be devoted by the Directors to the subject.

Your Directors would here call your attention to the fact that there are three companies working in Ontario that bear the word "Agricultural" as part of their name, viz., the "Canada Agricultural Insurance Company," whose headquarters are at Montreal; the "Ottawa Agricultural Insurance Company," whose headquarters are as its name imports, and a company in Prince Edward county. From the use of the word "Agricultural" any of these may very readily be mistaken for ours, which your Directors have no wish to be the case. They would, therefore, exhort you, when insuring, to be certain, if you wish to be or continue in this company, that when an agent is approaching you he is acting for the "Agricultural Mutual Assurance Association of Canada," whose hadquarters are at London, Ontario, and which company has, since its formation in 1860, paid out for losses over half a million of dollars, which is the old familiar "Agricultural" among the farmers of Canada.

Mr. Crowell Wilson, of London Township, seconded by Mr. Charles Roe, of St. Thomas, moved the adoption of the report, which was carried unanimously.

FIRE INSPECTOR'S REPORT.

To the Directors and Members of the Agricultural Mutua Assurance Association of Canada:—

GENTLEMEN,—Your inspector begs to report that during the past year he inspected and reported on 247 claims against the Company, 232 of which (with some reductions on account of over charges) were paid, amounting in the aggregate to $59,423.70. Fifteen claims, amounting to $5,292.10, were rejected; 50 of the above paid losses were caused by lightning, 39 of which were for buildings and their contents, amounting to $6,909, the balance of 11 claims were for live stock killed in fields, amounting to $630.33. Among other causes, incendiarism, as usual, has been fruitful in its results. It has been pretty clearly ascertained that twenty-three and probably many more of the unaccounted for losses have arisen from this cause, 17 of the losses, amounting in the aggregate to $5,755, has been from running fires mostly occurring in the counties of Simcoe, Ontario and Victoria. Probably some of the unacccounted for fires have been in the interest of the insured, but of which no sufficient evidence could be obtained to warrant the directors in resisting the claims. Appended is a list of the losses that have been paid, showing the cause of the fire as far as ascertained. I would here especially call the attention of members to what I have good reason to believe has been the cause of a large portion of the unaccounted for fires in dwellings, that is, the pernicious practice of many of taking up ashes in tin, iron, and sometimes wooden vessels, allowed there to stand until they are suppposed to be cold, then emptied into a wooden box or barrel placed in back kitchen, wood-shed or against the side of the house or fence leading thereto. No doubt the most of those who have been in the habit of disposing of ashes as above can call to mind some instance during the time of their housekeeping the fact that they have been or were near being burnt out from the above cause. Members should at once set themselves about the removal of the wooden ash box or barrel to the distance of at least twenty feet from building, or fence leading thereto, as required by the policy. Should the directors in the future, as they have expressed a determination to do, require a more strict enforcement of the above rule, members suffering from this cause will only have themselves to blame, as it is unfair for those that paid for the safe keeping of ashes should be required to contribute to those who suffer from their own culpable carlessness. Other pernicious practices might be referred to as prolific causes of fires, such as smoking in and about out-buildings and the use of open lights in such places, the allowing of children access to matches, the burning of stumps near buildings at dry seasons, all of which practices are prohibited in the policies.

All of which is respectfully submitted,

C. G. CODY,
Fire In

RECEIPTS.

Balance from last report		$53,306 14
Received from agents, less fees and commissions		42,662 63
Received from assessments		16,595 05
Received from interest		1,799 05
Received from transfer fees		84 25
		$114,447 12

DISBURSEMENTS.

Losses		$59,423 70
Bank agency and interest		79 17
Fire inspector's salary and expenses	$1,975 25	
Investigating losses by assistants	122 85	
		2,098 10
Returned premiums		54 45
Salaries, officials and clerks	$5,279 28	
" General Agent	379 52	
" inspecting agencies	55 00	
		[434 52
" writing policies	$ 630 50	
" auditors	200 00	
" Directors fees	1,390 25	
		7,934 55
Extra services in lieu of accountant		646 00
Rent of office		340 29
Postages on report	$ 385 03	
Policies	66 85	
" Assessment No. 14	95 43	
General postages	349 37	
		896 68
		414 92
Stationary		1,223 27
Printing reports and general printing		240 38
Advertising		195 18
Re-insurance		115 50
Expenses in sending out annual reports		31 81
" Assessment notices		192 20
Law expenses	$ 105 60	
Fuel and light	48 80	
Auctioneer's fees (selling old premises)		154 40
Gratuities		85 10
Office furniture		102 50
Incidentals (cleaning office, &c.)		51 17
Dominion stock	25,000 00	
Cash in Molsons Bank	13,692 24	
Cash in Treasurer's hand	1,475 51	
		40,167 75
		$114,447 12

Examined and compared with books and vouchers, and found correct as above set forth.

After the meeting of the members, Crowell Wilson, Esq., was re-elected President, and Daniel Black, Esq., Vice-President.

The other officers of the society were re-elected.

A. G. SMYTH, } Auditors.
J. HAMILTON, }

London, Ontario.

Annual Meeting of the Agricultural Investment Society and Savings Bank.

The fourth annual meeting of the shareholders of the above institution was held yesterday, there being a very large attendance.

London, Ont., Feb. 1, 1876.

The directors of the Agricultural Investment Society and Savings Bank, in presenting their annual report for the year ending December 31, 1875, have to congratulate the shareholders on the continued prosperity of the Society, in evidence of which they submit the following comparative statement:—

For the year ending	Amount paid on stock.	Bal. in Savings Bank.	Loans (cash val.)
Dec. 31, 1873	$ 74,754.92	$ 54,480.48	$116,403.74
" " 1874	154 0.2.91	90,899.76	229,790.44
" " 1875	246,047.61	103,243.86	335,837.11

The net profits of the year were $21,960.92, out of which two half-yearly dividends of four per cent. each, amounting to $15,829.75, have been declared, and the balance, $6,131.19, has been placed to the credit of the reserve fund, which now amounts to $11,106.78.

The confidence felt by capitalists in the stability of the Society is evidenced by the fact that the permanent stock, which, at the end of 1874 did not reach $80,000, at the close of the past year amounted to $187,650, and now exceeds $200,000, thus enabling the directors, if deemed advisable, to issue debentures as authorized by the recent acts of the Legislatures of Canada and Ontario.

The Deposits in the Savings Bank Branch exhibited a considerable increase over last year, notwithstanding the extreme stringency of the money market, thus affording to the Directors an additional proof of the hold the Society obtained on public confidence.

The Society's new office, on the corner of Dundas and Talbot streets, was completed and occupied on the first of June last, since which time a marked increase in all branches of the Society's business has resulted, thus proving the site to have been judiciously chosen, and well adapted for a monetary establishment. The rents derived from the shops and offices in the block at present yield ten per cent. upon the whole investment, including the expense of the alterations, besides giving the Society an excellent office rent free, and when some proposed improvements in the buildings are completed, the interest upon the investment will be further increased. The Directors have, however, again estimated this property at the actual outlay, and not at its real value, although they feel convinced that (as stated in their last report) the purchase is equivalent to an addition of at least $5,000 to the Reserve Fund.

All of which is respectfully submitted.

WM. GLASS, President,

JOHN A. ROE, Manager.

ASSETS.

Cash Value of Mortgages	$329,218 30
Loans on Society's Stock	6,618 81
Real Estate	9,783 38
Office furniture (including Steel Burglar Proof Safe)	998 82
Petty Ledger	518 89
Federal Bank	14,159 05
	$361,297 25

LIABILITIES.

Permanent Stock	$187,650 00
Accumulating Stock	59,297 61
Savings Deposits and Interest	103,243 80
Reserve Fund	4,974 59
Balance (placed to Reserve Fund)	6,131 19
	$361,297 25

We, the undersigned Auditors, do certify that we have examined the books and vouchers of the Agricultural Investment Society and Savings Bank, for the year 1875, and find the same correct as above set forth.

(Signed), ANDREW ELLIS, } Auditors.
CHAS. MURRAY, }

Commercial.

LONDON, ENG., MARKETS.

Feb. 26.—Floating cargoes—wheat, at opening, steady; corn, steady: cargoes on passage and for shipment—wheat, at opening, steady; corn steady. Mark Lane—wheat, at opening, very dull. Quotations of good cargoes No. 2 spring wheat, off the coast, per 480 lbs., 42s to 46s 6d; fair average quality spring wheat, for prompt shipment to Queenstown, American terms, 41s 6d. to 42s. Wheat, at opening, quiet. Corn firm; California, per cental, 9s 11d to 10s 4d; American western, mixed, per quarter of 480 lbs., 27s 6d. Canadian peas, per qr. of 504 lbs. 40s 6d.

LIVERPOOL MARKETS.

Feb. 25.—Flour, 23s to 24s; red wheat, 7s 10d to 9s 10d; red winter, 9s 8d to 10s; white, 9s 11d to 10s 2d; club, 10s 3d to 10s 10d; corn, 26s 9d to 29s 3d; barley, 3s 6d; oats, 3s 6d; peas, 38s 6d; pork, 82s 6d; beef, 93s; bacon, 53s to 54s 6d; cheese, 60s.

MONTREAL MARKETS.

Feb. 25.—Flour, superior extra, at $5 10; strong bakers, $4 70 to $4 75; superfine, $4 25.

TORONTO MARKETS.

Feb. 25.—Flour, extra, at $4 45 to $4 50; superior extra, $4 70 to $4 80; spring wheat extra, $4 15 to $4 20; oatmeal, $3 90 to $4 00; fall wheat, No. 1, 2, and 3, $1 07, $1 02, 95c; spring wheat, 95c to 99c; oats 32c; barley, No. 1, 2, and 3, 82c, 68c and 58c; peas, 69c to 71c; dressed hogs, per 100 lbs., $8 30 to $8 50; butter, lb. rolls, 20c to 25c; large rolls, 17c to 20c; tub, dairy, 18c to 21c; potatoes, per bag, 60c to 65c.

NEW YORK MARKETS.

Feb. 25.—Wheat, $1 05 to $1 55; rye flour, $4 10 to 5 05; corn, 59½c to 64c; oats, 46c to 52c; cheese, 6c to 12¾c; for common to prime butter, 20c to 23c.

CHICAGO MARKETS.

Feb. 25.—Flour, $1.00 to $1.03; No. 3 at 80c; rejected at 69c; corn, 42½c to 47c; rejected, at 33½c; barley, 55c to 58c; dressed hogs, dull sale at $9 50 to $9 70.

LONDON, ONT., MARKETS.

Feb. 26.—Deihl or Treadwell wheat, $1 55 to $1 75; red winter, $1 50; spring, $1 55 to $1 65; barley, per 100 lbs., $1 10 to $1 40; oats, 80c to 85c; peas, $1.10 to $1.12; corn, 90c to $1 10; beans, 90c to $1 21; rye, 80c to $1; buckwheat, 80c to $1; roll butter, 20c to 22c; crock butter, 19c to 20c; tub butter, 16c to 18c; cheese, 11c to 11½; hay, $10 to $12 per ton; straw, $3 to $4; clover seed, $5 50 to $5 75; fleece wool, 30c to 32c; potatoes, 37½c to 40c; cordwood, $3 50; onions, 40c to 50c; turkeys, each, 75c to $1 50; geese, 40c to 60c; chickens, per pair, 40c to 60c; ducks, per brace, 45c to 70c. A large market and brisk demand: from 8,000 to 10,000 bushels were sold at market.

THE

Agricultural Mutual

ASSURANCE ASSOCIATION

OF CANADA.

HEAD OFFICE - MOLSONS BUILDING

LONDON, ONTARIO.

CAPITAL:

$284,996.67.

With Nearly 39,000 Members.

DOES THE LARGEST BUSINESS IN THE DOMINION.

Insures Farm Property and Detached Residences in cities, towns and villages.

CAPITAL ACCOUNT

1ST. JANUARY, 1875:

Amount available of Premium Notes		$166,972 27
Premium due by Agents, secured by short dated notes from members and bonds.....		51,381 41
Due on Assessments.....		8,336 85
Real Estate, Office Furniture, &c.....		5,000 00
Dominion Stock.....	$25,000 00	
Cash in Molsons Bank....	28,166 81	
" Treasurer's hands	139 33	
		$53,306 14
		$284,996 67

LIABILITIES.

Losses not due and unadjusted (say).....	$5,600 00

OFFICERS.

Crowell Wilson, Pres.; Daniel Black, Vice-Pres.; W. R. Vining, Treas.; C. G. Cody, Fire Inspector; A. McDonald, General Agent; D. C. Macdonald, Sec'y and Manager.

FARMERS! Patronize your own Canadian Company, that has done long service amongst you. Address the Secretary, London, Ont., or apply to any of the agents. dg-tf

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ROCHESTER COMMERCIAL NURSERIES.

[Estab'd 1830.]

SPRING PRICE LIST, per doz, 100 and 1000, of Trees and Plants, with select list of Specialties and Novelties; FREE to all. Beautiful ornamental Catalogue, 10 cts.; Fruit Catalogue, 6 cts. Free to customers.

Address **W. S. LITTLE, Rochester, N.Y.**

FELIX CRAMER,

DESIGNER AND ENGRAVER ON WOOD AND METAL, 626 Craig [opposite St. George Street], MONTREAL.

☞ All kinds of engraving on wood and metal, plain or in colors, done in a superior style at reasonable prices. dj-12

A. CHISHOLM & CO.

SPRING GOODS ARRIVING.

For the Best Bargains

Call at the

STRIKING CLOCK

AUSTRALIAN

HORSE AND CATTLE FOOD,

—FOR—

HORSES, CATTLE, SHEEP, SWINE, POULTRY, Etc.

For sale by all Druggists and Store Keepers. Agents wanted. Send for circulars and testimonials. Address,

YOUNG, ADAMS & CO.,
Box 59, Port Perry.

tf

HOOPER & THOMSON.

All Kinds of Marble and Stone Work.

Cemetery Work Neatly Executed.

OPP. WESTERN HOTEL,

RICHMOND ST., - LONDON, ONT

da-tf.

TO PRACTICAL FARMERS.

The Brockville Chemical and Superphosphate Works

Manufacture Sulphuric, Nitric, and Muriatic Acids, Sulphate of Soda, and Superphosphate of Lime.

X Unammoniated, $30 per ton of 8 barrels
XX Ammoniated, $40 per ton of 8 barrels.
XXX Garden manure, $6 50 per barrel. of 200 lbs.
Bone meal, $35 per ton of 10 barrels.
Bone dust, $35 per ton of 10 barrels.

Wanted—Responsible Agents with good references, to sell on commission in every Township in the Dominion, the well-known Superphosphate made at the Brockville Chemical and Superphosphate Works, Brockville, Ont.

ALEX. COWAN, Manager.

df-12

BEES FOR SALE.

50 Skips in Gordon's Patent Hives, $8 each.
25 Skips in Common Box Hives, $6 50 each.

Part of the above lot are Hybridized, and part are the common Honey Bee. Both are the same price. All are in a strong and healthy state. They may be shipped without additional cost at Thorndale Station, on the G.T.R.

Also, a few Hives of PURE ITALIAN BEES, terms of which will be furnished on application. Address—

ROBERT SUGDEN,
D B-3 Thorndale P. O.

PEARCE & PICKERING

PRODUCE AND COMMISSION MERCHANTS, Wholesale Dealers in Cheese, Butter, Bacon, &c. Also, all kinds of cheese factory and dairy supplies. Office over McCallum's Drug Store, Richmond St., LONDON, ONT. ☞ Cheese Factory and Dairy Supplies —The undersigned are prepared to supply cheese manufacturers and dairymen with everything in their line, on the most reasonable terms. Send for Circular.

PEARCE & PICKERING,
dc-1 London, Ont.

DRAIN TILE MACHINES

We are now manufacturing Drain Tile Machines,

Simply Constructed—All Iron.

Will Make from 4,000 to 8,000 per Day.

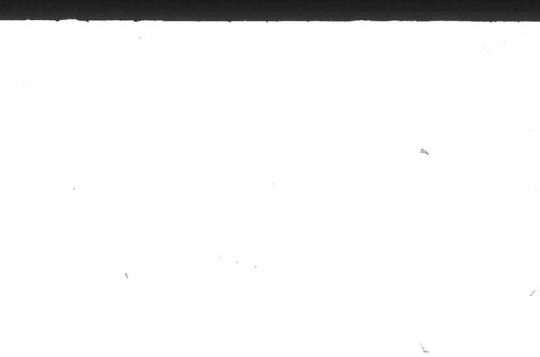
Grinds and Presses at the same time, thus not requiring handling twice, and is driven by one or two horses.

☞ This Machine took the Prize at Western Fair, 1875. For particulars apply to

D. DARVILL,
dc-1 LONDON, ONT.

DR. W. E. WAUGH. Office—The late Dr. Anderson's, Ridout Street, London.

NORWAY SPRUCE HEDGE.



NORWAY SPRUCE.—ROOT Pruned and Transplanted, and are well furnished and suitable for hedges, wind brakes and ornamental planting.

	per 100	per 1000
20 to 24 inches.....	$12	
15 to 18 inches.....	10	$75

Root pruned—not transplanted:

	per 100	per 1000
12 to 14 inches.....	$4	$30
6 to 9 inches.....	3	20

Address—

dc-1 **C. McCALLUM & CO., Box 2,113, Toronto, Ont.**

London Commercial College

and

NATIONAL TRAINING SCHOOL.

Intending students will please bear in mind that the **SPRING TERM** of the National Training School will begin Monday, March 13th, this being the most favorable time for entering Mr. R. N. Curry, the Principal of the institution, has been long known as one of the most successful teachers in this country; and young persons of both sexes desiring to fit themselves for teaching, or who are desirous of obtaining a good English or classical education, will here enjoy facilities not to be found elsewhere. Tuition Fee per term, $12 and $15 respectively.

There being no vacations or term divisions in the College department, students wishing a business education, Telegraphy, Phonography, etc., can enter at any time with equal advantage. Life scholarship for extended commercial course only $30. Five of the ten teachers composing the faculty are Normal School or University graduates, and have long stood in the front ranks of their chosen profession. Good board can be obtained for $2 50 to $3 per week.

REGISTERED ATTENDANCE.—During the month of January last sixty-two students registered their names for the Commercial course, thirty-six for the Training School course, and twelve for Music and Drawing. The above has been largely increased during the present month, and does not include the large number attending the night school only.

N.B.—Our register is open for inspection. Before deciding to go elsewhere, please call on or address for College Journal.

CURRY & SWAYZE,
Proprietors.

ESTABLISHED 1840.

PETER B. LAMB & CO.,

Toronto, Ont.,

Manufacturers of

Superphosphate of Lime.....	$30 per Ton.
Fine Bone Dust.....	$30 "
½ inch "	$25 "
¼ inch "	$20 "

Diploma was awarded to us at the Provincial Exhibition, Sept. 23, 1852, for the First Bone Mill Established in Upper Canada.

dc-3

Brockville Chemical Works Superphosphates.

BY THEIR USE A FARMER IN MISSISQUOI, P. Q., raised 800 bushels carrots and 900 bushels turnips to the acre; six of the latter averaged 22 lbs. each. Send for particulars. dc-2

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100 POPULAR SONGS.

WORDS AND MUSIC.—Sent post free on receipt of thirty cents. Address R. H. ROSS, Boston, Mass., U. S. dc-1

SEED POTATOES.

The undersigned has the following varieties of Potatoes for sale, raised by himself, warranted true to name.

Extra Early Vermont, Brownell's Beauty, Compton's Surprise, Early and Late Rose, Sutton's Red-Skinned Flourball, Early Ohio, Snow Flake.

Prices reasonable. Will be shipped free of charge perpeck, bag or barrel.

Address—

dc-tf GEORGE JARVIS, BYRON P. O.

FRUIT AND ORNAMENTAL TREES, SHRUBS, ROSES, GRAPE VINES, &c., &c.

PONTEY & TAYLOR

ST. JAMES' PARK NURSERIES,

LONDON, - - ONTARIO,

offer a

FULL ASSORTMEMT OF NURSERY STOCK.

Orders for Spring Planting solicited. Send for a Catalogue to

ST. JAMES' PARK P. O.,
dc-3 W. London, Ont.

I OFFER A LARGE STOCK OF

TREES

Apple Trees,
Apricots,
Irish Junipers,
Gooseberries,

And a general assortment of

Fruit Trees & Evergreens.

Letters will be answered in English, German or French. Address

GEORGE ACHELIS,
dc-2 WESTCHESTER, PA.

SEEDS! GARDEN SEEDS!

HIT THE NAIL ON THE HEAD BY Securing Seeds Grown by Myself. Send your name and receive our Catalogue. Address—

JOHN F. OTWELL,
Practical Market Gardener and Seed Grower,
ST. MARY'S, ONT., CANADA.
dc-1

3,300 BUSHELS OATS, NORWAY, for sale at London market prices.—Grown on light soil; warranted pure and free from any foul seeds; cannot be excelled for change of seed to heavier soils. Also, over 400 bushels first-class seed peas, and over 100 loads of straw for sale. JOHN CAMPBELL, con. 8, lot 22, Caradoc. P. O. Box 106, Strathroy, Ont. dc-2

BLOOMINGTON NURSERY, F. K. PHŒNIX, Bloomington, Ill. Price lists free. Four Catalogues, 25c. dc-1

N. F. YEO PLANTS, PRUNES, GRAFTS and takes orders for all kinds of Trees, Grapes and Small Fruits; also, agent for "Fruit Recorder and Cottage Gardener," only one dollar per annum, with chromo, and has Waters' Improved Tree Pruners for sale. dc-3

STRAWBERRIES!

PROCURE THE BEST AND MOST PROFITABLE.

HAVING FAIRLY TESTED THE Cheney Strawberry, I can safely introduce it to you as the best market strawberry ever yet brought before your notice; it is hardier than the Wilson variety, and of much finer quality and finer appearance; it is driving out the Wilson wherever tried. Plants, 50 cents per dozen; if per mail, 60 cents per 100; 200 per mail, $3. Address DR. FRANCIS, Delaware, Ont. dc-tf