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FARMER'S ADVOCATE

PERSEVERE & SUCCEED.

AND HOME MAGAZINE.

VOL. X I.

LONDON, ONT., FEBRUARY, 1878.

NO. 2

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

The Farmer's Advocate

—AND—
HOME MAGAZINE.

PUBLISHED MONTHLY BY.....WILLIAM WELD.

OFFICE:—ADVOCATE BUILDING, LONDON, ONT.

TO SUBSCRIBERS:

TERMS.—\$1 per annum, postage paid; \$1.25 when in arrears. Single copies 10 cents each.

We cannot change the address of a subscriber unless he gives us his former as well as his present address.

Subscribers should always send their subscriptions by registered letter, and give their name and post office address in full. Subscriptions can commence with any month.

Subscribers who do not give express notice to the contrary, are considered as wishing to continue their subscriptions.

TO ADVERTISERS:

Our rates for single insertion are 20c. per line—\$2.40 per inch, space of nonpareil (a line consists on an average of eight words).

Manufacturers and Stock Breeders' cards inserted in "Special List" at \$1 per line per annum.

Condensed farmers' advertisements of agricultural implements, seeds, stock or farms for sale, or farms to let, not to exceed four lines, 50c., prepaid.

Advertising accounts rendered quarterly.

Advertisements, to secure insertion and required space, should be in by 20th of each month.

Letters enclosing remittances, &c., only acknowledged when specially requested. Our correspondence is very heavy and must be abridged as much as possible.

establishment in America. Went to the principal seedsmen's establishments and agricultural editors' offices; went through the Museum and Tremont Park. At 6 p. m. took cars and then boat for New York, arriving there at 7 o'clock Saturday. Procured artist work and saw more business men.

dens, orchards, lawns and houses were unprotected by any fence whatever. Fences that had existed were being removed. When at Rochester we purchased cuts No. 1 and 2. The first is an English scene. The English prefer to be walled in—to have no intrusive observers looking into their private walks or hearing their private talks. Cut No. 2 represents the American style—borders, but no fences.

We were passing by a walled enclosure in one of our Canadian cities. A Scotch lady accompanied us. We remarked that the grounds were beautifully kept in the enclosure; she remarked that she presumed it belonged to some pig-headed Englishman. We asked why she made such a remark. "Because they keep everything to themselves," was the answer. If an American had such a place, these dismal, disgraceful walls would be pulled down, that the public might at least enjoy the fresh odor and balmy breeze from these encumbered grounds. There should be a limit to shutting out air, light and beauty from the public, and where the free view of private life should stop. We all admire the beautiful gardens, lawns and shrubberies displayed by the American style, and are pleased to find it so generally adopted in our Canadian cities. The



ENGLISH STYLE.

time is coming when fencing in Canada will be the exception to the rule. In old settled parts of Canada the sooner the law compelling people to fence is abolished the better.

NEW YORK.

Although having been in large cities often, the contrast in New York always surprises us. The loud rattle and clank of horses on the pavements, the rattle of wheels and the mass of moving beings are bewildering to persons accustomed to quietness. It requires continual vigilance and caution, especially at the crossings. Policemen are at all crossings where there is much travel to help the aged the children and ladies across; they prevent drivers from acting carelessly, or there would be many killed daily. The traffic of street cars is much like a continually flowing river in some parts. They have one elevated railway running through the city, over the heads of horses and the street cars; it is supported by a single line of iron posts set about 50 feet apart. They are now constructing three more elevated railways, these to have double tracks. Strong

iron posts set close by the side walks support the iron truss work that carries the trains. There is complaint in New York and in each city that we visited about the dullness of the times and lack of business, but the immense number of moving beings would cause a countryman to think that things could not be at all dull. All is hurry and activity. We trust that this journey will tend to improve the future numbers of this journal.

On the Wing.

Monday, January 14th, 6 a. m., took cars for Paris Station by G. W. R. Arrived at 8 o'clock; took livery cutter and drove 14 miles for agricultural information. Took cars again at 4 p. m. for Rochester, N. Y.; arrived there at 11 o'clock.

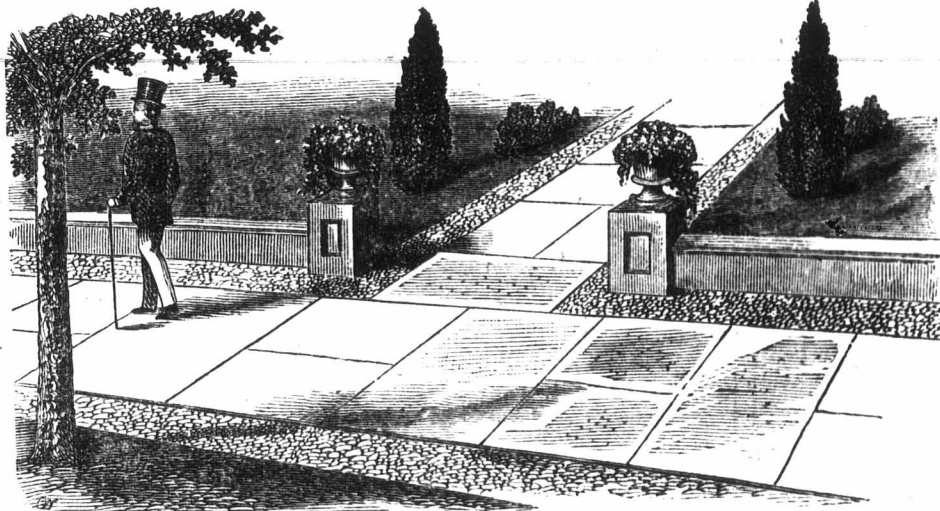
Jan'y 15, took street cars to Mount Hope to see the celebrated nurserymen, Messrs. Ellwanger & Barry. We saw several of the Wellingtonians or Mammoth Californian trees growing, the same as shown in the illustration in the last ADVOCATE. The lower limbs had been damaged by frost. They are not hardy enough for common cultivation in our climate. At noon we attended the New York Wool Growers' Association meeting, and made a few remarks. In the afternoon took street cars to St. Nicholas Park, to see Mr. Purdy, the editor of the Fruit Recorder.

At 5.15 took cars for New York City; arrived there Wednesday, 16th. Went to the artist establishments to make arrangements for work for this paper, and see some of our American editors. In the evening went to Booth's Theatre; Booth acted as King Richard III. On Thursday visited the principal seedsmen's establishments in New York, and went to New Jersey.

At night we took the steamer for Boston, arriving at Fall River at 5 o'clock on Friday morning. Took cars on Old Colony R. R.; arrived at Boston at 7.30. Visited Mr. Paine's—the leading artist

Took cars at 6.15 for Suspension Bridge; arrived there at 10 o'clock on Sunday. Went to a little old stone church. Took cars at 1.30; arrived in London at 6 p. m., went to church and then to rest.

Monday, the 21st, in our office, looking over some of your letters and attending to the business of the paper, in no way fatigued from this rapid flight, traveling four nights in the week, and by



AMERICAN STYLE.

horse cars, cutter, railroad and steamboat traveling between sixteen and seventeen hundred miles—a long distance to travel in one week and do six days' work besides.

When in the suburbs of Rochester we were again surprised to see the contrast in the appearance of the country to Canadian suburbs. The fields, gar-

iron posts set close by the side walks support the iron truss work that carries the trains.

There is complaint in New York and in each city that we visited about the dullness of the times and lack of business, but the immense number of moving beings would cause a countryman to think that things could not be at all dull. All is hurry and activity. We trust that this journey will tend to improve the future numbers of this journal.

Breeding and Improving Cattle.

In no other branch of agricultural husbandry has there been so much improvement within the last decade as in the breeding and improving of cattle, and this has been the case notwithstanding the shrinkage in the ordinary receipts from the farm. True, but little has yet been done in proportion to what remains to be done. In every part of the country cows of the old unimproved breeds are still more numerous than grades, and the beef offered in the great majority of cases is such as must be sold for prices that do not pay the feeder, while beefs good enough for exportation to foreign countries are but few. But there is, notwithstanding, a great and—better still—a steadily increasing improvement. There are no better or higher bred cattle to be found than are owned by some of our breeders. This is proved by the high prices paid in the States, and even in England, the native home of the Shorthorns.

Agricultural exhibitions and the agricultural press have been the means of convincing intelligent farmers of the great folly of breeding from any but well bred bulls. The earlier maturity of well bred stock, even of grades, and the much higher price they bring, compel farmers who are wide awake to their own interest to forsake the old idea that the question of breeding was not worthy of a thought. There was one point in favor of the old scrub stock—they were the stock best suited to the careless ways of farming followed by so many. They could live where well bred cattle could not thrive.

This point is in reality a strong argument in favor of well bred stock, whether thorough-breds or grades. Their introduction will compel the negligent to be more diligent than they have been. There must be more thorough cultivation. Clover and grasses of the best kind and most suitable varieties must take the place of weeds. Root crops must be grown for winter feeding. Farmers will not rely entirely upon wheat, impoverishing the land with successive scourging crops. There will be more and better beef and mutton for the home markets and for exportation to Europe.

We see already the beginning of these improvements in breeding cattle in our agriculture in Canada. In the neighboring country, where, if in any place, they appreciate the value of dollars and cents, they are pushing forward in the advance of improvement.

The *Ohio Farmer*, in speaking of the improving of cattle, asks—What has Shorthorned blood accomplished in the dairy and on the farm? In reply it says:—

Whatever individual opinion may be held as to the value of this breed in the dairy, it is an indisputable fact that it has not, to any appreciable degree, superseded the native cows in the dairies of this country.

We now come to the vital question with Shorthorns. What success has this breed met with in engrafting itself upon the agricultural interests of this country as a beef animal? There are a great many ways of looking at this question. The most contracted is through the eyes of Shorthorn breeders. Another is the recorded experiments with Shorthorn grades. A better one is the beef product of States where the breeding of fancy Shorthorns is carried on to a large extent, as in Illinois and Kentucky. A new test is the quality of the beef shipped to England, which one would think ought to be, if it is not, a selected lot. If it could be proved that it was to their interest, the dairy-men of the country could be easily induced to keep Shorthorn bulls, but it so happens they, as a class, have no faith in the blood for making good milkers of the heifers, and none of them raise steers. They are not able to see where the profit comes in. Undoubtedly Shorthorn grades ripen quickly and more kindly than these mountain scrubs, and if a man proposes to raise his steers he should by all means raise grade Shorthorns, but would it be right to advise a change in the practice of these poorer farmers before they had raised their general

condition to a higher plane? Of what benefit would Shorthorn blood be to them when they starve the steer nearly to death the first two years? Would it not be absolute cruelty to this young animal to put delicate and ambitious blood in his veins when his lot is so humble and so hard?

If I am correct in my conclusion that the Shorthorn enemy consists in an army of itinerant scrub bulls, let us see what has been done by the breeders of this country to circumvent the enemy. In what direction have they bent their energies—to ward liberalizing and broadening the principles of breeding so as to reach the "lower classes," as the politicians say? Have they not rather been paying court to the lineal descendants of the royal houses of Bates and Booth? Is not a bull that has only seven crosses of a thoroughbred in his veins just as good for all practical purposes as though he had a thousand? Then, if the purpose of breeding Shorthorns is to benefit the country at large, and the farmers in particular, why do you make so much fuss over these Bates' and Booth's, and almost totally neglect the dissemination of Shorthorn blood among the masses of farmers?

Sorghum.

Breadstuffs always command a ready market, besides being necessary in the farmers own household. They bring a good return when good yielding crops, for the labour bestowed on its cultivation. It might therefore be expected that the farmer would consider his wheat as his bank from which he is drawn the greater portion of the cash needed for working his farm, and to meet his other expenses, and this has been the case. We have had in consequence wheat succeeding wheat for many years till our land became wheat sick; so that we no longer see such heavy crops of wheat as we were accustomed to from the rich virgin soil. We can restore the fertility of our soil and grow from it in profitable seasons as good crops as it grew in the old times, though not as uninterrupted succession of crops of grain or any other product. We must, if we are to succeed, pursue a more diversified system of farming; and we have no doubt we will find it, on the whole more profitable. To this end it is well to avail ourselves of the experience of others, and also to try experiments for ourselves. In other countries these are public experiment stations.

The introduction of a new system of tillage or of plants or seeds not before known in our locality may be found very profitable. In a former number of the *ADVOCATE*, we brought to our readers notice a variety of the maize; the Sorghum is now extensively grown in the Western States and still farther north it has been grown successfully. The *Prairie Farmer*, writing of it, states as an instance of the profit to be derived from its cultivation, that Wm. Ireland planted a piece of ground five rods less than half an acre. It took three men, two days to cut the cane and take it to the mill, and from it were obtained 110 gallons of syrup, worth 75 cents per gallon, making \$82.50c for the crop.

Our Linseed Oil Manufactures.

The *American Agriculturist* under this heading speaks of the great value of oil cake to cattle feeders, a subject of the highest importance to us Canadian farmers and too little thought of. He says:—

"The extent to which the manufacturer of linseed oil is now carried on in the West may be shown by the fact there are three mills in Chicago, each turning out about 10,000 barrels of oil, and 4,000 tons of oil cake yearly, using to produce these 250,000 bushels of flax seed all the growth of near by localities. St. Louis competes very closely with Chicago if it does not surpass these figures. While we congratulate ourselves on this fact, we have to regret that the 12,000 tons of oil cake are worse than lost to us because we sell them to our competitors in Europe, who feed this

nutritious substance to cattle, making wheat and manure with which their large crops are grown. This is a serious loss to us who should use every pound of our product and sell the meat and grain grown by it."

The cultivation of flax is one of the many branches of farming in which we Canadians can successfully compete with any farmers in America. Our soil and climate are admirably adapted to the growth of the plant and the preparation of the fibre. Many who are now prosperous farmers in our Dominion are well versed in its cultivation, having been engaged in it when farming in Europe, where it has been estimated very extensively and has been more remunerative than any other farm crop. There is always a brisk demand with remunerative prices for the fibre, the linseed oil and the oil cake.

The profit of the flax crop is not limited to the fibre. The seed of itself pays a good profit to the producer. Both linseed oil and oil cake are always in demand in the market, and command good prices. But the latter is so valuable for feeding stock that it should be always fed on the farm. It is, however nearly all sent to England for consumption, the farmers in Canada not perceiving the advantages to be derived from feeding it to their cattle, as a means of feeding beef and also enriching the farm-yard manure. The average yield of seed to the acre in Canada is about two bushels, producing to one hundred bushels of seed one hundred and seventy-five gallons of oil and about two tons of oil cake.

Lime on Fallows.

"What is the most effectual remedy for wireworms? Will an application of lime to the field infested with them exterminate them?" *Farmer*.

It is very difficult to free land from worms; like other pests, whether animal or vegetable they multiply so fast that nothing but the most persistent exertions can stamp them out. They feed on the roots of grains and cereals as well as roots of every herb and vegetable that grows in field or garden. To the great abundance of food they are sure to have in every sod where they attain access their great increase is partly to be attributed. Other animal foes of the gardener and farmer may be starved out by not growing such varieties as constitute their food. This is the case with the Hessian Fly, which was starved out of large tracts of the country in the State of New York, by not sowing wheat for some years. Even the potato beetle, notwithstanding its marvellous increase, can be starved out. But in order to starve out the wireworm, as every crop sown in field or garden supplies them with food, the land must be kept entirely bare of every herbage. Even in land not cropped they have sufficient food in the roots of weeds, if they suffered to grow.

We have known land that had been greatly infested with them to be entirely freed from them by a heavy application of salt. They had done great injury to the previous crops. At the time of seed sowing the salt was sown liberally and harrowed in with the seed oats. The worms were all killed.

We have in our garden applied soot for the same purpose and it has had the desired effect. Lime is said to be serviceable for this purpose as well as others, though we do not think is so effectual a remedy as either salt or soot; and even they must be applied liberally. A farmer in one of the Channel Islands whose crops were entirely destroyed by wireworms top-dressed his field with a mixture of salt, lime and soot, but it did not in the least check their ravages. He then tried guano and it was thoroughly effectual. Another remedy as effectual as any other that can be applied is the refuse gas lime from gas works. There

is no other substance more deadly to insects than gas lime; however a heavy application of it, unless composted with earth or other matters is very injurious to all vegetation.

A thorough bare fallowing is a most effectual means of exterminating them. By this only you starve them out. When there is no vegetation they can obtain no food, and there is an end of them; but no half fallowing will do. The plough and cultivator must prevent the growth of weeds on grass; and this will free the land from two hosts of the farmers enemies—weeds and wire-worms. Lime on the fallow will have a very beneficial effect. It will render available for plant food the different elements in the fallowed soil, of which a great part had lain inactive.

Best Food for Milch Cows.

In summer and autumn the farmer can, with a little labor, provide for his milch cows an abundant supply of food; corn, clover, peas, oats and rye will give all the variety that can be needed for our dairy stock in addition to our ordinary pasture. But we must have recourse to other sources of supply in winter. They can live, it is true, on good, well-saved hay without other food, but this is not enough. For a cow giving milk, as much as for fattening animals, something more is required. When we take from her rich pasture a cow giving milk, and confine her in the house to feed wholly on dry hay, the quantity of her milk must decrease, and with it any profit that might be made from her feed. But the farmer is not without resources of food that may be procured on his farm. In winter as well as summer he can have all the variety of forage he can need at the mere cost of the tillage and care. There is always a profit to be expected from the feeding on the farm a large proportion of its products. The manure itself pays well for the labor.

TURNIPS.—The estimation in which this root is held for the feeding of stock is shown by the great area devoted to its culture by the best scientific and practical agriculturists. In England the turnip crop embraces annually not less than two millions of acres; and in Scotland half a million. Without the turnip the winter store of cattle food would be very scanty. Though turnips contain a large percentage of water, they are a very valuable addition to winter food for stock, and we have had animals fattened in good condition for the English market with no other food than turnips in addition to hay. There is an objection to turnips as food for cows giving milk—they give an unpleasant flavor to the milk. To prevent this turnips are by some fed to cows immediately after being milked. By others a pinch of saltpetre is put in the milk. Both remedies we have known to be successful.

MANGEL WURZEL.—This root is preferred to the turnip for feeding milch cows. It yields with greater certainty a much heavier produce. In the reports of the Department of Agriculture we have returns of some crops of one thousand bushels per acre and upwards. It does not communicate any unpleasant flavor to the milk; this of itself it greatly in its favor. It keeps good till late in the season, even till our fall rye is sufficiently grown to cut for soiling. Late in the season it is better for feeding than early in winter, when it is often found to be too relaxing. Excessive feeding with any roots is liable to produce too great laxity, but when fed sparingly in addition to dry fodder, it is no more laxative than the health of the animals requires.

CARROTS.—There is no food more prized by English farmers for milch cows than the carrot. So far from giving an unpleasant flavor to the milk, it is thought by many to improve it, and that it improves the color of the butter of cows fed on it is

well known. The Belgian or white carrot is generally grown for cattle food, as it yields much heavier crops than any of the red varieties. It is admitted that as far as yield is concerned, the Belgian stands at the head of the carrots, but it is doubtful if its greater yield is not more than compensated for by the superior qualities of the other varieties. Roots grown to a large size are almost always of inferior quality, and in the comparison of large Belgian carrots with the smaller long orange or other carrots, the nutritive properties of the large Belgian fall much below those of the others.

BEETS.—The sugar beet has very valuable properties for feeding, and is now becoming better appreciated. The proportion of saccharine it contains must make it very profitable for winter feeding as an addition to dry fodder. The chief feeding value of mangel is derived from its sugar, and the beet that is so rich in sugar may be expected to possess still greater value.

A ROOT PULPER.—We will merely add a description of a simple root pulper, an implement very desirable in root feeding to cattle. It consists of a cylinder of hard wood 18 or 20 inches in diameter, turned quite round and smooth, and of whatever length that may be desired. This is mounted upon gudgeons and armed with steel teeth made of half-inch square steel. The teeth are ground to a chisel point and screwed into the cylinder with the bevel of the points upwards and projecting half an inch. This toothed cylinder is fitted into a box of hard-wood plank, and the box is to be supported upon a stout frame, which should be firmly bolted to the barn floor. The front of the box is brought snugly up to the teeth of the cylinder. The roots are shovelled into the box at the top, and are rapidly reduced to a fine pulp by the action of the sharp chisel points. The pulp is thrown out at the bottom of the box, where it is received upon an apron of plank, and from that it falls upon the floor or into baskets placed to receive it. A driving pulley is affixed to one of the gudgeons, so that it may be worked by a belt from a horse power. It is too heavy a machine to be worked by the hand, although a small machine might be constructed upon the same plan if thought profitable to do so.

English Farmers.

Farmers as a class are said to find great pleasure in complaining. Whether there is always cause for their complaining or not we do not say. They have their cares as much as any class. There are betimes expectations disappointed and labors unrewarded, but farming has its pleasures and its profits. There is certainly no other life so free from entire failures as that of the farmer.

In Britain there have for some time been great complaints of heavy losses sustained in farming. There agriculture is, as a whole, better than that of any other country. Their agricultural implements are better and more varied. They purchase more cattle food and more manure, and they expend more money in wages. From agricultural reports we learn that this season has been there very unfavorable to farmers, and our own correspondents fully bear out these reports. There has been a bad, late harvest. The yield of the grain crops has been light, and the grain having been badly saved, it is of inferior quality; and they complain that, notwithstanding the bad crops, the prices are low. A letter from our own correspondent in another column speaks the feeling of many English farmers. With a bad harvest and unremunerative prices, he also complains that stock feeding is unprofitable.

We cannot altogether agree with his view of the present state and future prospects of English farmers. He has to compete in his own markets, it is

true, with importers from every continent, who all have access free of duty to British markets; yet we do not think the price of breadstuffs lower than he can grow them with profit. He, it is true, has to pay a rent—a high rent in many instances—but he has the advantage of a home market, while his competitors have to bear the expenses of freight, commission, etc. A circumstance still more powerful in his favor is the greater productive power of his farm. The yield of grain, for instance, in Britain is not less than forty per cent. higher than that in America. A better system of tillage may very much reduce this difference in a short time.

Store cattle, our correspondent says, sell at 14 pence per pound live weight (say 8½ pence dead weight), and when fattened are sold to the butcher for 9 pence per pound. The English farmer has learned that the manure made by cattle when fattening amply remunerates him for the labor of feeding. His profit, looking at it in this light, is the little difference of one cent per pound on the weight of the animal, added to the profit realized on selling the increased weight acquired from feeding at 9 pence per pound, and the food consumed in fattening having been grown mostly, if not wholly, on his own farm.

The real complaint of the English farmer may be summed up in a few words. The farmers of other countries that are rent free are admitted to British markets free of duty to compete with him who pays a high rent, and for the expenses of the administration of the country so admitting others free to his markets, bears heavy taxes.

The Agricultural Press.

The great benefits conferred on agriculturists by agricultural papers is fairly stated in an article under the heading above given in *Moore's Rural New Yorker*. Thousands of our readers will, we have no doubt, fully endorse the indisputable fact that the information in this way obtained is beneficial not only to the readers of agricultural works, but often to many others who profit by their example. From the article referred to we take the following extract:

But little over three-quarters of a century has elapsed since, in the year 1800, the *Farmer's Magazine*, the progenitor of the multitudinous family of agricultural periodicals of to-day, entered on its useful career in the city of Edinburgh. In the succeeding half century the actual productive power of Great Britain, in the article of wheat alone, increased to the extent of supporting an additional population of seven millions. Down to our time this development has continued, though perhaps, at a slower pace, owing to the limits which commerce has set to the profitable cultivation of the soil of any particular district by bringing into competition with its crops the cheaper productions of other regions. In nearly every other department of agriculture there has been a like advance, and in some, especially in root culture, even a more rapid improvement has been made.

This marvelous development of the agricultural resources of the country has been mainly brought about by two causes, both of which have been equally beneficial here—discoveries in agricultural science as well as of better methods of tillage, cropping, and breeding, coupled with a speedy and widespread dissemination of these discoveries among those who could utilize them. To the first of these causes of advancement, the agricultural press, here and abroad, has contributed not a little by diligently recording suggestive facts and significant results of various practical experiments as well as by affording to investigators the stimulating encouragement inseparable from a hearty recognition of the beneficent purposes of their researches and the consciousness that their discoveries would be at once brought faithfully to the notice of those who would thankfully profit by them.

By no other means has this been so promptly and efficiently accomplished as through agricultural periodicals. For one farmer who has become acquainted with valuable discoveries in agricultural science or practice by poring over the works in which they are technically described, a hundred have been benefited by them through a more lucid

account contained in their family papers. In these, as a rule, not only are all the successive scientific discoveries relating to the occupation of their patrons, described in a popular style and at sufficient length for all practical purposes, but the experiment of hundreds and the experience of thousands of farmers, instead of remaining confined singly to a few in each neighborhood, are made collectively the common property of all.

The Month.

January is particularly the month of meetings. The Ontario and Quebec legislature have each begun their annual sessions, and whilst our provincial parliaments are now of comparatively secondary interest to the Dominion, yet their deliberations should be watched with great care for they affect general prosperity and comfort more closely in many respects than the supreme government. Both houses are still discussing our railway and colonization grants, the boundary question and revenue. The grants to railways and colonization roads have been exceedingly liberal, and a more economical policy will soon have to be pursued, or the provinces will have to resort to more direct taxation. Our timber lands must be husbanded with frugality, and competing parallel roads a few miles apart built for subsidies only, must be treated on commercial principles—will they pay.

The Board of Agriculture and Arts have held their January meeting, and but little of great importance however was transacted.

Again the accounts were not ready, as the Auditors had not audited them. Apparently one of the auditors allows the public interest to suffer whilst his private affairs were first taken care of. As auditors are usually paid for their services it might be more profitable to have this scrutiny undertaken by another who would sacrifice his private affairs slightly, if necessary, for an equivalent.

The accounts of the Board should be balanced, audited, printed, and mailed to all agricultural societies by the 1st of January in each year, and then these societies would have an opportunity of passing upon the stewardship of the Board, and instructing their delegates.

The question of the treasurer remaining a little while after the conclusion of the Provincial Exhibition to pay the prizes, was not entered upon. Many complaints have been made of an undue haste on the part of the paying officer to escape from his week's work too soon. An officer with full authority should remain at least until the Saturday night, and a better suggestion would be until the following Monday evening.

The agricultural societies have had their annual meetings, and elected their officers for 1878; a better attendance and a greater interest than usual has been taken by the members. This year the new act has come into force, and the election of delegates who will choose new members in place of those who retire this year from the Board of Agriculture and Arts, has had its first trial.

The Ontario Legislature certainly take considerable interest in agriculture and arts, if the periodical changes in the act are true symptoms. Whether they are now bordering on confusion by so many alterations time will better demonstrate.

Our useful commercial body, the Dominion Board of Trade have again been in session and their deliberations are of a most important character to all. The subjects brought forward are of the best possible utility, and should have great weight. A suggestion has been offered that our agricultural interests should be represented on this Board. This is a step in the right direction and a few of our leading agriculturists would do good

service there by enunciating freely their particular opinions and mature experience.

Why should not the Board of Agriculture send a delegate?

Among the miscellaneous gatherings, the Dominion Grange have once more had their annual meeting and report great progress both in the number of granges, membership and increase of funds.

The Weather and the Crops.

January has been unusually mild. There has been no snow worth speaking about. The roads has not been good, much of the produce is still on the farmers hands. The winter wheat has not been injured as yet by the open weather, the plant is very strong, the covering of snow at the present time would be of much benefit to it although no injury has as yet been done, and the plant is unusually luxuriant, a protectory mantle might prevent injury.

Illustrated Agricultural Lectures.

We see by the Lansing, Mich., *Republican* that Prof. Manly Miles, of that city, who has made agriculture and stock-raising a life-long study, has prepared illustrated lectures on the subject of live stock, which present some very novel and interesting features. He has procured a large and costly magic lantern, furnished with achromatic lenses and a large number of slides containing types of every breed of domestic animal. These are exhibited on canvas, life-size, and used to explain and vivify various portions of the lecture, thus giving the audience not only the facts, but illustrating and enforcing the lecture by placing the animal before them and pointing out its distinctive features. Nothing of this kind has ever before been attempted, but it is a feature which cannot fail to interest and delight any audience.

If our farmers would form clubs and obtain the services of the Professor in Canada, we have no doubt but that beneficial results would follow, as agricultural information in any form is advantageous.

Poultry Yard.

Ontario Poultry Society.

The annual exhibition of the Ontario Poultry Society will be held in the City Hall, London, the last week in February. The Committee are busily engaged in arranging their special prize list, which we believe is to be an excellent one. Their regular prize list, we understand, will be \$5.00, \$3.00 and \$1.00, besides many specials. Mr. John Plummer, the President of the Society, intends giving a first-class lumber wagon to the exhibitor of the best six pairs of any variety, and the donor to have the choice of one pair. There will also be many specials to the value of \$5.00 and \$10.00 in goods of various kinds. Entrees must be in two weeks previous to the exhibition. Send to the Sec. Treas., Mr. L. G. Jarvis, Nilestown, for entry papers, who will forward them to you immediately. Put the price you want for each pair opposite the entry, as the price must be put on the cards. All sales will be effected through the Secretary, and ten per cent. deducted from the price realized. The fowls will be taken care of by the Society in the best possible manner, so the exhibitor need not hesitate in sending them. We feel sure that every exhibitor will get every cent of his prize money at the close of the exhibition, as the Committee have worked hard and got the treasury in good condition.

Canadian Poultry and Meat.

The good demand in England for the produce of our Canadian farmers is of very great importance to us—scarcely less so than the yield of our crops. Had we not a good market for our beef and mutton we would have little encouragement for the improvement of our cattle and the cultivation of crops needed for feeding them. But as it is the products of our dairies and poultry yards, as well as our meat and breadstuffs, are all called for in England, the great market of the world, if in marketable condition. This is the prime necessity.

There was a considerable consignment of Canadian turkeys this week for our Christmas markets. Bristol, Liverpool and Manchester were the country markets that received supplies. London (Leadenhall market) also had a good many barrels. Unfortunately, the weather on the arrival of the birds here was very mild, and their condition was not good. A consignment of Turkeys from the Eastern Townships was spoiled by holes having been bored in the barrels. I saw the birds in Leadenhall market condemned as unfit for food. They were destroyed by order of the Sanitary Inspector. Another lot, sent by Mr. Dawson, of Brampton, Ontario, were packed in their feathers in barrels, and carried very well, but the weather was against them, and they had a bad smell, which prevented them realizing remunerative prices. I bought fourteen of these turkeys at six shillings apiece, but when cooked they were unsatisfactory, being rather "high" and smelling like game long kept. I have taken a great interest in the competition of Canadian poultry, as there is a great trade to be done, but the birds must arrive in "first-rate condition. English turkeys of the same size as these birds, 8 to 9 lbs. each, sold at double the price. Poultry from Canada must be packed in the feathers, the heads to be put under the wing, in boxes—not barrels—practically airtight. On arrival here the birds should be hung in a draught of air for twenty-four hours, and if the weather is cold their condition will be first-rate. There is an unlimited market in England for a good article at remunerative prices, but the condition must be nearly equal to that of home-fed poultry. I would strongly urge on Canadian consignors of poultry the advisability of feeding their birds fat before sending them. The Canadian geese in this market fetched a very low price, because they were lean compared with the home-fed birds displayed by their side. Messrs. G. Brooke & Co., of Leadenhall Market, received the Canadian poultry for sale, and they are very ready to promote the trade as much as possible, but of course they were unable to dispose of inferior poultry at good prices. In the first place the birds must be fat, and in the second place they must be in good condition when they arrive, if the trade is to be satisfactorily established.

Winter Management.

As a general thing when poultry of any description run at large, they are able to supply themselves with the necessary variety of diet which they require. We have no idea what an amount of garbage they hunt out and scratch over, finding something in each deposit that they desire or crave. They devour an immense quantity of what we might term uncleanly food, and yet the fowls do better to have their runs, and hunt out these morsels so choice to them. A large proportion of their food consists of vegetable matter. This latter is necessary and indispensable to health. Everything that feeds largely on grain requires something for bulk, to distend the stomach, and keep the digestive organs in good working order, otherwise the bird or the animal cannot thrive. Winter management of poultry is no small item if we are judiciously inclined, and have an eye to some income, no matter how small, from our hens. So long as the winter is open and the ground uncovered from snow, the fowls will in a great measure assist themselves, and if well fed and supplied with water, will give a fair yield in eggs, but it often occurs in our northern localities and the ground is covered with snow, for three and sometimes four months during the winter season. For the long period we must make some preparation.

An open shed, fronting the south, with gravel bottom, and where the cattle run, affords a pleasant scratching ground for them during the day, and is an admirable place, providing the roost be contiguous. The cattle trample the snow down, and beat out paths, which renders an easy footing for them

from place to place. Thus they are able to obtain all the exercise they need through the day. In this manner they keep accustomed to the atmosphere, and can endure a considerable degree of cold. Only the combed varieties suffer in our climate when the mercury drops down nearly or quite to zero, and even they are hardened, if exposed by degrees, and soon become accustomed to severe cold. When laying hens (which require vegetable food) cannot find what they need, they will eat hay, selecting the fine blades from well-cured meadow grass. Treated in this manner, Brahmas do admirably well, and return a good profit in eggs. Laying hens require and must have, fresh water. They find this at the place where the cattle drink. Farmers, if they only knew it, with a small expense and trouble, are well situated to become, not only poultry raisers, but breeders of choice stock, for they have conveniences at hand, the expense is not so much. They certainly can be large egg raisers.

Fowls, and especially laying hens that are confined, require great attention to keep them profitable and in good health, and without possessing the latter, they cannot be of profit to the owner. It is useless to confine pullets or hens and stuff them with grain alone, and expect any great amount of eggs. They must be provided with freshly broken clam or oyster shells each day or two, and either chopped cabbage or onions for greens. The value of these two vegetables for poultry is not properly esteemed. They are even better than potatoes. When the tax devolves on us to supply the demand for green food, or its equivalent, we are simply astonished at the amount they will consume in order to satisfy their demands. Besides this, they must have grain. Those unused to the feeding of poultry for eggs, when confined, must possess a good store of patience and perseverance to wait for the returns, which will surely follow, if the age and condition of the birds be right. *Country Gentleman.*

Correspondence.

NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post-Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. 3. Do not expect anonymous communications to be noticed. 4. Mark letters "Printer's Manuscript," leave open, and postage will be only 1c. per ½ ounce.

How to Prepare a Lawn.

SIR,—Please inform me as to the best manner of seeding down a lawn, the quantity of seed required to the acre, the kind of seed, time to sow, &c. D. J., Thornhill.

[The first thing needed in improving the ground is to obtain good drainage. These can be made of stone laid in any way that will leave a space for the water to pass through; if drain tiles are to be had, they are just as good and generally cheaper. The drains should be from three to four feet deep. The next thing is to prepare the soil. If the lot is small, a spade is the best implement to use, sending the spade well down and completely inverting the soil. A good rich loam is best to constitute a good lawn. Be sure and throw out all stones found in digging, and have your ground as clean as possible. The seed may be sown either spring or fall. Lawn seed sown about the 1st of September receives the benefit of the autumn rains, which is very essential, and it will be in excellent condition by the spring; but should the ground be in fine order, it is just as well sown in spring, and should the weather be dry, be sure and keep it well watered. All being done as advised above, sow the grass seed on the well-prepared surface, raking it in, and roll well after sowing. As lawn grasses are of small growth, it is necessary that they should be sown thickly. Seedsmen generally keep grasses suited especially for lawns, parks, &c., but blue grass is very desirable, and also sweet vernal grass, on account of its delightful fragrance. For forming new lawns three to four bushels are required per acre. If the seed is sown early in spring, and the weather favorable, by the middle of July it will need cutting, and after that must be cut as often as possible, the oftener the better for the lawn.]

SIR,—I want to make an inquiry, and would like if you could give me some information on it. I have three six-acre fields, the soil in which is the same. I sow one-half with oats and the other half

with wheat. I take two crops; the second crop I seed down. Where the wheat was I have a third more hay than where the oats were. What is the reason that hay will not grow after oats? What chemical process do the wheat and oats take out of the ground? J. S., Trout River, P. Q.

[Grass will grow well after oats, and the practice in many places is to seed with oats. The difference in the yield of grass in the two cases stated undoubtedly depends on some condition not mentioned. If winter wheat is grown, the land would not be so long unoccupied as with the oat crop, which would have a greater tendency to promote the growth of weeds. A difference in the time of seeding to grass, or in the tillage practiced with the two crops, would also have an influence. The time of harvesting may present conditions in the exposure of the young grass that should also be considered. A full statement of all details of management may furnish an explanation of the difference observed in the yield of grass, without resorting to the application of chemical theories.]

A Record of the Weather.

SIR,—For some years past my mind has been impressed with the idea that we had about the same number of rainy days, cloudy days and days of sunshine in each and every year, and in order to test the truth or falsity of the same I set to work to keep a correct record of the weather, commencing with the first day of January, 1870, and the result has been pretty nearly as I anticipated. With regard to the actual amount of rain fall in each year I am not prepared to speak, not having the necessary apparatus to measure the volume thereof. But still it is my conviction that it is also about the same, though greatly diversified; for instance, when we had a wet March and April, May and June (our growing months) were generally dry; this, with July and August (our summer months), which are generally dry, would give the balance of the year's rain to October and November. The reverse would naturally be the case if March and April were dry, and thus, for my own satisfaction, I have carried the record in the subjoined tables up through a period of eight years as nearly correct as circumstances would permit. That some useful inferences might be drawn from them I have neither time nor space to discuss. I will, therefore, leave them to the more intelligent. But knowing that there were others equally curious with myself in these matters, I thought it but right to gratify them if acceptable to you, sir; if not, you know where the waste basket is. It will also be noticed that in the term "rainy days" everything is included from a light shower to a soaking wet day, and the same with regard to rain at night.

In 1870.	
Fine days	257
Cloudy days	22
Rainy days	50
Snow	36
Rainy nights	15
In 1871.	
Fine days	239
Cloudy days	59
Rainy days	46
Snow	21
Rainy nights	10
In 1872.	
Fine days	239
Cloudy days	50
Rainy days	49
Snow	27
Rainy nights	11
In 1873.	
Fine days	228
Cloudy days	54
Rainy days	55
Snow	28
Rainy nights	15
In 1874.	
Fine days	233
Cloudy days	57
Rainy days	49
Snow	26
Rainy nights	11
In 1875.	
Fine days	218
Cloudy days	68
Rainy days	44
Snow	35
Rainy nights	19

In 1876.	
Fine days	228
Cloudy days	71
Rainy days	45
Snow	21
Rainy nights	12
In 1877.	
Fine days	238
Cloudy days	69
Rainy days	44
Snow	14
Rainy nights	10

Now, May and June being our growing months, I have noted the wet days in each for each year, as follows: 1870—May, 4 rainy days; June, 6. In 1871—May, 3; June 7. In 1872—May, 8; June, 6. In 1873—May, 4; June, 5. In 1874—May, 6; June, 7. In 1875—May, 8; June, 4. In 1876—May, 7; June, 3. In 1877—May, 3; June, 5. I find, also, that in 1870 I commenced to sow on the 2nd of May; 1871, April 18th; 1872, April 27th; 1873, April 30th; 1874, May 9th; 1875, April 27th; 1876, May 11th; 1877, April 16th, which were the earliest periods that I could sow, my land being low; on higher and lighter lands sowing was something earlier. My best crops were in 1872, '74 and '75, which years, it will be noted, had the greatest number of rainy days in May and June; my lightest in '76 and '77. This summer has been remarkably dry, and for the breadth sown the straw has been very light; yet the yield from the quantity of straw, especially wheat, cannot be said to be very light. Roots of all kinds have been a poor crop; hay scarcely average. We have had a great quantity of rain through October and November, which, with the complete absence of snow and the remarkable soft weather up to New Years, will, I fear, have a prejudicial effect upon the fall plowed land. We have had but ten days of clear weather during this month, yet neither rain nor snow. As circumstances vary in different localities, the above is given for the township of Landsdowne and surrounding country; and, if acceptable, I may at some future time give you a brief description thereof. R. V. K., Warburton.

Redfern Spring Wheat.

SIR,—As I notice you are doing a good work in trying all you can to improve our system of farming particularly, especially by the introduction of pure, clean seed grains, and those best adapted to our climate and soil, I have to notice more particularly the introduction of the Redfern Spring Wheat, which has within the last three years been introduced in our vicinity with great success; this last season it has done remarkably well, yielding from 30 to 50 bushels per acre, and that weighing generally 65 and 66 lbs. to the Winchester bushel, and from 60 lbs. wheat we got 43 to 45 lbs. of strong baker's flour, making the best description of bread. And this yield has been from ordinary cultivated ground—in no case from the summer fallow. Any soil capable of producing a good crop of oats or barley will produce (or, at least, has produced) the yield above spoken of, and I am satisfied that if any extra pains are taken in preparing the soil for wheat, it would yield 50 bushels to the acre. It has a good, strong straw, and a very large head, and there is not near the danger from lodging or falling down that many other kinds of wheat are subject to, especially the Black Sea, which invariably gets all tangled and twisted in every shape before fit for harvesting. I think all that has been raised in this and the adjoining township will meet with ready sale for the next season; indeed, I should recommend every farmer in Ontario to give it a fair trial. S. A., Aultville.

DISEASE-RESISTING POTATOES.—In your August issue I noticed a paragraph headed, "Are there disease-resisting potatoes?" Some years ago a society in London, Eng., had the same question brought to their notice, and resolved to send one of their number to South America to procure the wild potato, which they believed would most likely be free from disease. I never heard the result of their investigations, but, being in the Andes at that time myself, it occurred to me to dig some of the wild potatoes to see if there was no disease in them. I found the potatoes very small and a large percentage of them rotten. The disease seemed to be the same as among the potatoes here. As I have not noticed any answer to your question, I thought, perhaps these facts might be of interest to your readers. D. M. Pictou, N. S., Jan. 7, 1878.

Stock.

Meat Production for Foreign Markets—3.

BY M. MILES.

As the manure produced on the average eastern farm constitutes an important element in estimating the profits of cattle feeding, it will be well to consider the method of determining the actual value of the manure obtained from the different articles of feed in common use.

The amount of nitrogen, phosphoric acid and potash contained in barn-yard manure may be assumed to represent its value as a fertilizer, as all other contained substances that have a commercial value are too small in amount to require consideration from a practical stand-point.

According to the experiments of Lawes and Tillent, but about seven per cent. of the nitrogen and two per cent. of the phosphoric acid and potash contained in the food is retained in the system of animals that are being pastured, while the rest appears in the manure.

In his report on commercial fertilizers made to the Conn. State Bd. of Agr., in 1869, Prof. Johnson estimated the value of these substances as follows:—

Potash.....	4 cents per lb.
Insoluble phosphoric acid.....	4½ "
Soluble.....	12½ "
Nitrogen.....	17 "

Taking these prices, which are by many thought to be too low, as the measure of value, and making allowance for the percentage of these substances retained in the system of fattening animals in the experiments referred to, we shall obtain the following results:—

Crop.	Value of manure obtained by feeding 1 ton.	Estimated yield of crop per acre.	Value of manure from feeding 1 acre.
Indian corn.....	\$ 6 09	50 bush.	\$ 8 53 } total—\$16 09
Stalks.....	3 36	2½ tons.	7 66 }
Oats.....	7 16	45 bush.	5 16 } " 8 01
Straw.....	2 28	1½ tons.	2 85 }
Wheat.....	8 60	25 bush.	6 82 } "\$214. wheat
Straw.....	1 71	1½ tons.	2 14 } being sold.
Peas.....	13 53	25 bush.	10 00 } total—\$14 67
Straw.....	4 67	1 ton.	4 67 }
Beans.....	15 47	25 bush.	11 60 } " 19 37
Straw.....	7 77	1 ton.	7 77 }
Swedes.....	1 18	20 tons.	23 63 } " 32 64
Tops.....	1 50	6 "	9 01 }
Clover Hay.....	9 10	2½ "	22 74
Timothy Hay.....	6 07	1½ "	9 10

In the third column of the table an estimated yield of the crop is given on which the figures in the fourth column are based, showing the results per acre.

It will be observed that there is a great difference in the value of the manure obtained from feeding grain and clover hay, and that obtained from feeding straw and timothy hay.

As a rule, the articles that have the greatest feeding value give the largest return in manure, so that the best results in the production of both meat and manure will be secured by a system of high feeding, which we have also shown to be the most profitable on other grounds.

It may appear to those who have not given the subject particular attention that the value of the manure per acre given in the fourth column of the table is too high, and that estimates of the results of feeding made on such a basis would tend to mislead the farmer in regard to his real profits. The same amount of nitrogen, phosphoric acid and potash in the form of commercial fertilizers would, however, cost considerably more than their assumed value in the form of barn-yard manure,

which is, even at the values given in the table, the cheapest fertilizer that the farmer can obtain.

The new market for meat of the best quality that is now opened to American farmers must enable them to give greater attention to the feeding of live stock with a good prospect of remunerative results. The full advantages of this improved system can only be secured by keeping animals that mature early, fatten rapidly and furnish the best quality of flesh when slaughtered, and by high feeding from the time of birth, which will ensure the greatest return for feed consumed and the largest supply of manure to increase the fertility of the farm.

The Rivalry of Breeds of Cattle.

Several symptoms lately go to show that the long accepted supremacy of the shorthorn is likely to be disputed in a more direct and energetic fashion than has hitherto been the case. Our columns have recorded on several occasions the affirmation of a well-known "Hereford" auctioneer respecting the intrinsic superiority of his favorite breed; and only last week, at the meeting of the Long Horn Society, Mr. Muntz referred to the milking capabilities of Bakewell's old breed, and averred that the "shorthorn men" were "entirely neglecting" this invaluable property of a profitable animal. The fact that prime Scots beef usually tops the market has long been known. And it is remarkable that even the less popular breeds are becoming much more diffused, so that of the fourteen prize Devons shown at Islington this week, only three are natives of their district, the remainder coming from various other localities in the United Kingdom. The question thus presented is an interesting and very practical one; and as year by year Birmingham and Islington bring it before us, it is natural to give it a brief consideration.

Directly we do this it is seen that the question of what breed is most profitable is not a simple, but a complicated one. It is difficult to say what might have been made of Bakewell's Longhorns by this time, if they had been cultivated with the enthusiasm and to the extent of the shorthorn; on the other hand it is easy to say—as was said the other day—that four Herefords can be fed for the cost of three shorthorns. If the three shorthorns, however, come to maturity earlier than the four Herefords, the balance may yet be on their side; and the belief is pretty general that they do. The question is, whether that belief is right or wrong? The experience of even the Northern feeders, again, seems to show that a shorthorn cross upon their favorite breeds greatly increases their feeding value; and such a fact is a strong testimony. Even were the pure Scot the most profitable beast in his own locality, it does not follow he would be so generally; but when we find a shorthorn cross even there regarded with so much favor it is plain there must be "something in it."

Yet we may glean a few facts from Smithfield which are not without interest. Taking the champion cup for best ox or steer for the sixteen years it has been given, we find the trophy now credited six times to shorthorns, thrice to Devons, thrice to Scots, twice to Herefords, twice to cross-breeds. Taking the similar cup for cows or heifers, this has gone twelve times to shorthorns, twice to Devons (once of the twice on this occasion to the Prince of Wales' high-class but small animal), once to a Hereford, once to a Scot. And the champion prize of all for best beast, long discontinued—since 1844 we believe—has now again, as at Birmingham, gone to a shorthorn. These figures are rather remarkable, and especially so as regards the oxen or steers, since it is a notorious fact that in shorthorns far less than the ordinary proportion of the finer animals are steered at all, being kept for bulls. Some other figures are also instructive. Thus, the cup Scotch heifer—an almost perfect model, too; more perfect than the shorthorn in our opinion—scales 2 lb. less than the champion lady, though three months older. And going to the oxen or steers, the following table is interesting:—

BREED.	AGE.	WEIGHT.
Devon.....	3 yrs., 2 mos.	14 cwt., 2 qrs., 10 lbs.
Hereford.....	4 " "	20 " 2 " 10 "
Highland.....	5 " "	20 " 0 " 0 "
Cross-bred.....	3 " 10 "	22 " 2 " 0 "

The shorthorns themselves can hardly be fairly compared, being this year confessedly inferior in quality. Yet a shorthorn is the heaviest beast in the show, and it can be seen that neither the Highland nor the Hereford will compare for weight

combined with age with the cross-bred, which is the produce of an Aberdeen cow by a shorthorn bull.

On the whole, it seems to us that the shorthorn still holds its own, especially as regards its value for crossing; but, undoubtedly, other breeds are advancing, and the field is more "open" than it was some years ago. What seems imperatively wanted is more exact and actual knowledge as to the product in beef of different races upon a weighed and measured allowance of food. Such figures as the above are instructive, but they fail so far as they do not give the quantity and cost of the food consumed; and it really seems strange that feeders should be content to leave so much to mere supposition. Profit is no such matter of mere supposition, but depends upon actual figures; and we should welcome any such bearing upon the matter in question, from any quarter, with more satisfaction than almost any other contributions to these columns. It seems forgotten by our breeders that, according to his own account at least, Mr. Bates himself based his selection of the most valuable strain of cattle ever known upon matter-of-fact experiment in weighing food, and the increase thereby of certain cows. We want similar experiments carried out more widely to-day, both as regards flesh and milk; but the last is a separate question, closely connected with another relating to the true type of shorthorn, or other breed, which we must reserve for some other occasion.—*London Live Stock Journal.*

Water for Sheep.

It is a great mistake, and the cause of much suffering and loss, not to supply sheep with water, especially milk giving ewes. During the drought of 1868 many flocks were ruined by want of water. I know of a striking instance where the animals wasted and were sent to Chemsford market in evil condition, the owner being ignorant of the cause. The dealer who bought them "for a song," first examined the whites of their eyes, thinking they must have the rot or jaundice; but, seeing all right so far, he found that a supply of water was the only restorative required. Grass in a succulent state contains seventy per cent. of moisture but, when dried, very much less. The same remark holds good for clover, &c., When we give cake, corn, maltcombs, bran, &c., which we always do, it becomes absolutely necessary to provide water, or the animals will not thrive. Give the opportunity of judging for themselves by an always available supply, and they will exercise a proper discretion in the matter. An iron water-cart is on most farms an indispensable requisite. When food is too wet and sloppy, dry cotton-cake or grain is a good profitable regulator. Turnips and mangels are disproportionately watery as food for animals; hence the losses occasioned by them, especially with breeding sheep. They contain fully nine pints of water to one pint of dry food. Ninety per cent. of water is too much; sixty-five to seventy-six per cent. in pasture grass is the more natural and proper proportion. The human of animal frame has seventy-five per cent. of water, just as good grass holds. Meat is dear as food, because it contains, in the lean portions seventy-six per cent. of water. No wonder that bread and cheese are found far more economical.—*Mark Lane Express.*

Feeding for Meat.

The *Boston Journal of Chemistry* says poor animals consist of about two-thirds water, while fat ones only one-half, in the total weight, and compares poor animals to bog meadows. It adds, that when the fattening process begins, water commences disappear, and fat or suet takes its place; and the increase in bulk during the process is largely of adipose matter. It is a curious circumstance that, during the fattening, the proteids or nitrogenous compounds, increases only about 7 per cent. and the bone material, or inorganic substance, only 1½ per cent.

The cost to a farmer fattening an ox is much greater at the close of the process than at the commencement; that is, increase in bulk or dry weight at that period is much more costly. If it cost 3 cents a pound for bulk for the first month after a poor animal is put in the fattening stall, it will cost 5 cents the last month. If, then, a farmer consult his money interests, he will not carry the increase in fat beyond a certain point, provided he can turn his partially fattened animals to fair advantage. Farmers have, perhaps, learned this fact from experience and observation, and hence comparatively lean beef abounds in our markets.

While this is of advantage to the farmer, it is very disadvantageous to consumers of the beef, for the flesh of a fat animal in every case is much richer in fixed, nourishing material than that of the lean, and it is never good economy to purchase lean beef. It is better to purchase the poorest part of a fat animal than the best of a lean one. The best piece of a fat ox (the loin), contains from twenty-one to twenty-eight per cent. more fixed material than the corresponding part of a lean one; and curiously enough the worst piece in the lean animals (the neck), is the richest in nourishing material. The flesh of the neck improves very little in fattening, hence, economy considered, it is the best portion to purchase, as its value in a measure is a fixed one.

Care of Stock.

Farmers who look after the comfort of their cattle but rarely suffer pecuniary loss by disease or death. In the stable cleanliness and ventilation are, with an occasional currying, the important requirements that promote health. Experiments have proven that cows in milk and old oxen retain their condition in confined and warm quarters during winter, while animals under three years thrive better in a well-sheltered yard with shed attached, the floor of which should be covered with dried leaves or refuse straw, which would afford them a resting place during the nights. Leaves make an excellent winter bedding, and every farmer should have a supply on hand to renew the beds from time to time. A shelter from the rain and snow and north-easterly winds is the only protection the younger animals require during the inclement season, as their blood circulates more freely than that of the older cattle, and they possess greater powers of endurance.—*Germantown Telegraph.*

Windows in Stables.

The matter of windows in stables is one of vastly more importance than some farmers think. Animals, no more than vegetables, can thrive in the dark. Our long winters are sufficiently trying to the constitutions of our farm stock, under the best circumstances, and an animal upon which the sun scarcely shines at all for five or six months will come out in the spring in a bad state of health, even though the feed, ventilation and temperature have been all right.—*Plowman.*

An Englishman, speaking of some fine cattle, says: "They were evenly fleshed all over, and the meat of that texture which shows steady, continuous feeding from infancy, and not a hurried case of blubber wrapped around them in six weeks, as pigs are Indian-corned against Christmas." A strong way of putting it, but true nevertheless.

Cooked vs. Raw Corn.

At this time, when my brother farmers are feeding their corn without stint to their porkers and beesves, a few words in regard to my own experience may not be without interest.

For two months past we have been using the Eureka steam cooker, and I very much regret that we have not the scales and all the requisites for making an accurate test of the comparative merits of cooked and raw corn, both in the kernel and ground. But we have not; therefore I can only relate our experience as it has been. Before using the cooker we shelled the corn and fed it to our pigs raw, giving them all they could eat, taking notice of the amount fed, and also of the progress made in fattening. We then commenced cooking corn (thoroughly) in the kernel, and found that (although one bushel of dry corn would make two bushels of the cooked) our pigs would eat only about the same amount of the cooked corn, and we are confident they are putting on flesh quite as fast as when they were consuming double the amount of food. We take the water (which contains a large amount of starch) from the base of the cooker, and mix it in the swill barrel with their drink, adding a little salt. One of my neighbors informed me that he was feeding twelve hogs, and they consumed fifty-six baskets of ears, or twenty-eight bushels of corn per week, whilst we were cooking nineteen and a half bushels of shelled corn per week, and with it were feeding ten fattening hogs, a two-year-old beef and eighteen store pigs. I will not prolong this article by making any comments, but let farmers and all who feed stock make their own estimates.—*J. A., in Michigan Farmer.*

The Effects of Crossing.

A report which appears in a recent copy of the *Gazette*, (Eng.) descriptive of the farm stock in the Gowran farm, contains the following statement in regard to the plan for improvement by crossing:

The following, briefly, is the principle adopted in the herd: Heifers are bought, the best that can be procured, and these are then placed to a Shorthorn bull of the first class. The calves are allowed to run with their dams and then fatten off the following spring. The heifer calves are reserved, and the bullocks kept till two years old and then fatted off. The effect of a good Short-horn bull is wonderful, and Gowran young stock are simply models as paying farmers' cattle. The crops this year, it is allowed, are nowhere very good, but great credit is due the steward for the extraordinary cleanliness of the farm. Though the turnips and mangles are nothing remarkable there was not among them a weed to be seen.

Dairy.

Skim Cheese as Food—The Measure of its Value.

BY L. B. ARNOLD, SECRETARY OF THE AMERICAN DAIRY-MEN'S ASSOCIATION.

A cheese-maker closes a letter as follows: "A chemist recently stated in a public journal that 'the value of a food is measured by the amount of albuminoids it contains, of which casein in cheese is one,' and that 'as skim cheese contains more casein than whole milk cheese, it is worth more than whole milk cheese for food.' Is this sound? I do not believe it is, but I cannot tell why. A little light on this point would be very acceptable."

Thinking the answer to the foregoing would have something of public interest, I send it to your journal.

It is a very common way of estimating the value of foods both for men and animals to measure them by the per cent. of flesh-forming material they contain, but though generally true, the rule is not infallible. Availability and the accompaniment of the albuminoids greatly modify the value of particular foods. To illustrate: We require oxygen in the air we breathe to revivify our blood. It is not enough for this purpose that we take the requisite amount of oxygen into our lungs regardless of its condition. It must be in a free state and unfiltered by any other element. If we are placed in an atmosphere of carbonic acid, although it contains as much oxygen as the air we breathe, we can make no use of it. The oxygen will not let go of the carbon with which it is united to combine with blood, because its affinity for carbon is stronger than it is for blood. While inhaling the needed amount of oxygen, we would die as soon in an atmosphere of carbonic acid as we would in a vacuum, because we could make no use of the oxygen in the acid.

Carbon is a supporter of animal heat and a source of producing fat, but the value of a food for these purposes cannot be measured by the amount of carbon it contains. Availability must be considered here. If it is in the form of fat, sugar, starch or gum, we may appropriate it readily. But if it is in the form of woody fibre or charcoal it will be of no use to us, because it is locked up in compounds too tenacious for our stomachs to unloose. An ostrich may keep warm by eating charcoal, or a mule by eating woody fibre, as they respectively have the power of digesting these substances, but for man and most other animals they are absolutely indigestible.

So with albuminoids, otherwise called flesh-forming food. With them availability must also be considered. Potatoes, as shown by analysis, contain food enough to sustain the human body, and if cooked they will support life for some time. But if we take them raw we would starve, though

an ox might grow fat on them. The circumstances under which albuminoids are presented must be taken into account as well as the fact of their presence, and this item is all important in a comparison of whole milk and skim cheese, as we ordinarily find them.

When milk has been coagulated with rennet, the whey separated, and the coagulum pressed, the curd thus formed is insoluble in water or such acids as the human stomach contains, until it undergoes the cheesy fermentation or meets with an alkaline solvent, when it will be soluble in water and be rendered digestible. If curd is eaten before it becomes cheese, it does not dissolve in the stomach unless it lies there long enough to become cheese, which it may do. Though we know that the cheesy fermentation is hurried on rapidly in the stomach, curd does not appear to stay there long enough to complete its cheesing, but is pushed along into the duodenum and onward while it is yet in its curdy condition. The duodenum and bowels following are lubricated with an alkaline secretion which, to the extent of its alkalinity, may dissolve the acid curd. But this, especially in feeble persons, is often not strong enough to dissolve the curd, and it passes along, leaving the body in the same condition in which it entered. And what is worse, the curd, by taking up or neutralizing the alkaline secretions with which the duodenum and lower bowels are naturally lubricated, produces constipation—an effect which is very sure to follow from eating green or partially cured cheese, but never from using such as is fully cured and ripe. When curd is completely converted into cheese, it is as easily and perfectly digested as bread, and instead of producing constipation, it operates as a laxative and is as wholesome and twice as nutritious as beef. In this condition its value as food may be measured by its albuminoids, or casein. Strictly speaking, it is not even then a perfect food. It is lacking in respiratory matter to the extent of the loss of sugar carried away in the whey. But as flour and most of the other food we use has an excess of that kind of matter in the form of starch and sugar, the defect in cheese is made up without expense and need not be counted. It has, in fact, the advantage of acting as a corrective for the excess of starch and sugar which exists in pastry and many other kinds of food we consume.

If skim cheese could be so made and treated as to be completely converted into cheese, its value might also be measured by its albuminoids or flesh-forming matter, but not otherwise. The misfortune of skim cheese is that it generally undergoes very little cheesy fermentation, owing to defects in its manufacture. It spoils either by drying down into a "white oak" stiffness, or if too moist for that, it rots with a sweetish and sickish-tasting decay. It is generally consumed in the form of dry, hard and sour, tough and uncurd curd, in which condition, besides its tendency to produce constipation, it is as indigestible in the human stomach as raw potatoes and just about as useless as human food, no matter how much casein the chemist may find in it.

A recent examination of the milk sold in Chicago by a prominent physician and chemist, elicited some facts as to the adulterations of milk in the city. After analyzing a large number of samples of milk sold to various hotels and in different quarters of the city, it was found, without exception, not only deprived of its cream, but also watered. Estimating the whole from these average samples, he declares it as his opinion that the best milk sold in the city is about one-fourth added water, from one-half to all its cream taken away, and but one-fifth of the whole genuine milk.

The Value of the Alderney.

Very few cows yield profit on eight months milking, and yet it is the usual custom of the country to dry them off at that period, often because their owners don't like to milk in cold weather, oftener because a large calf is desired to capitalize the beginning of the agricultural year with, and full as often because the rural community, though keen enough in certain details, is not given to large considerations, and does not take into account the factor of liberal and continued feeding during two months beyond the eight in the bountiful production of milk and consequent profit. A cow thus early dried off establishes the habit for herself and progeny, and remains on a dairy farm at least an unprofitable animal. The Jerseys, on the contrary, breeding early, continue under good management persistent milkers, many drying off with difficulty before calving, and becoming more profitable at the end of the year than at any other period during it.

Finally, as the "small Alderneys" of half a century ago thrived upon grass "upon which a Yorkshire cow would starve," so the Jerseys of to-day will get along upon as little and poor feeding as any scrub of the roadside, and do more for their owner in the production of butter. I don't know any one pretending to be a decent dairy farmer having a poorer pasture than I and my kine have suffered under for several years—though it is now being cleared of stone, plowed, and prepared for a first class cow feeder hereafter—and it has had to be supplemented with corn-fodder and rowen most of the season, never any grain except some seasons a quart or two of wheat middlings per cow, and it has been a source of wonder and pleasure to see how these indefatigable providers will manage to eat enough to produce the amount of butter they yield.

I trust, however, that this will not be used as an argument for shortening the rations of our favorites, because good feeding will cause a production of more butter and better quality than poor; and though I and mine suffered from short pasture—and for good pasturage there is no adequate substitute—yet morning and night my cows had their fill of fodder or rowen and never suffered from hunger. Taking her all in all, for a butter dairy or as a family cow, the Jersey must be considered the most profitable as she certainly is the most docile and beautiful.—R. G. in *Jersey Bulletin*.

How to Increase the Yield of Wheat Next Harvest.

The writer of "Walks and Talks on the Farm," in the *American Agriculturist*, writes the following in one of his recent "talks" on farm crops:—"There is one thing," said the Doctor, "that may yet be done to increase the yield of wheat next harvest, and that is to top-dress the winter wheat early next spring with, say 200 lbs. of nitrate of soda and 150 lbs. of superphosphate; and, in view of the probable good price for wheat, it will be likely to prove a profitable application in sections not too remote from market." "I do not know about that," said the Deacon, "but a dressing of hen manure, ashes and plaster, sown early in the spring on light, sandy knolls, where the wheat is yellow and sickly, sometimes has a surprising effect. But I like to have my hen manure for corn."

"On these light, sandy knolls," said I, "it is a good plan to draw out some barn-yard manure in the winter and spread it on the frozen ground or on top of the snow. It often happens that the snow blows off these knolls and leaves them ex-

posed. A slight dressing of manure not only enriches the land but affords protection to the plants."

"I do not know anything that can now be done to save the plants from the Hessian fly. The eggs, or larvæ, are in the plants, and they will destroy those plants next summer. But all the wheat is not affected. If not more than one-fourth of the plants are attacked, the field of wheat would next summer present a sorry appearance—and yet there are three fourths of the plants uninjured. Now can we not stimulate these remaining plants by top-dressing with manure, and so cause them to spread until they cover the ground?"

"The first year I was at Rotharstead, Mr. Lawes

feet, and the second story 9 feet. Cellar walls are of stone masonry, laid rubble, dashed and white-washed; the outside courses above the ground are of selected stone, laid rubble, tight joints, and painted. The doors, sash, mouldings, &c., inside, are of Carnada white pine and painted; the sills of frames are yellow pine. The stairway has a walnut rail and newel, with maple balusters.

The building is nicely finished and complete in every part, costing the owner 3,000. By reference to the plans it must be evident that the rooms are advantageously placed, having front and rear stairways, fine pantry, and range in kitchen. All parts are free, and the house can be easily managed, as all its working qualities are perfect. The windows and doors are carefully arranged so that it will furnish properly, and good furniture will not be lost in it, as is too frequently the case in badly designed buildings. Each chamber on the second floor is supplied with fine clothes presses, which can be made wardrobe closets if desired. We have new styles of finish, organized for buildings of this kind, more beautiful, less clumsy and costly than the old methods. Our sashes are made and hung differently. The partition walls are made to have the appearance of being thick, and a 5-inch partition will look like a 9-inch wall. All of these points can be fully understood by the specifications and details, and we save more than the price of the drawings. The external appearance of the building has been much admired for its quiet beauty.

Parties writing to us should give full particulars as regards size and position of lot, and all points desired by them.

Our charge for full drawings, &c., of the building is \$50, and subject to any changes the owner may desire in the building.

FIRST STORY PLAN.

P parlor, 12 x 20 feet; D R dining room, 12 x 18 feet; S R smoking room, 8 x 12 feet; K kitchen, 12 x 12 feet; S scullery, 9 x 12 feet; H hall, 8 feet wide.

SECOND STORY PLAN.

C chamber, over D R, 12 x 18 feet; C chamber over P front, 12 x 12 feet; C chamber over P back, 10 x 12 feet; C chamber over S R, 8 x 12; C chamber over K, 9 x 12 feet; B bath room, 7 x 8 feet, 6 inches; H hall.

WHEN TO CUT TIMBER.—Timber for building purposes, or for the use of coopers or wheel-wrights, should never be cut before December or January, when the circulation of the sap is thoroughly arrested. Immediately after the tree is cut down it should be freed from all shoots and branches, and sawn into planks as soon as possible, so that these may be at once seasoned by exposure to By taking these precautions, decay and dry rot will be avoided, and the wood will keep excellently; but of course the advice is intended only for those who get out their own lumber, or can have it done according to their wishes, for the greed of dealers will force the cutting of timber at untimely seasons.

The aggregate importations of American products to Great Britain were larger in October last than in any previous month of the year. During that time at Glasgow alone there were landed 2,900 sheep, 146 horses and mules, 3,153 quarters of beef, 24,000 cases preserved meats and 5,270 boxes of bacon.

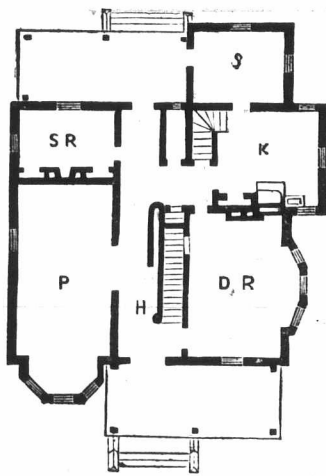
The sixteen starch factories of Aroostook Co., Me., used this fall from 20,000 to 100,000 bushels of potatoes each, the price paid at the factory being from 20 to 25 cents a bushel. Many farmers in the county have from 500 to 1,000 bushels stored in their cellars. *What are our stock pasturers doing?*



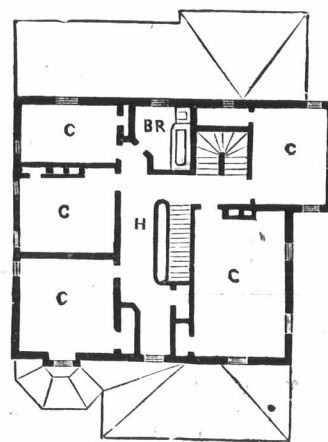
HOUSE TO COST \$3,000.

had some wheat that was so thin on the ground and so poor that he thought of plowing it under. Instead of doing so he top dressed it with Peruvian guano, or sulphate of ammonia, and hoed the land between the drills."

"In regard to hoeing wheat, I feel certain that the operation would be highly advantageous, not merely in cleaning the land but in encouraging the growth of the wheat. And it is a curious fact that while good, effective wheat-hoeing machines have been extensively used in England for over thirty years, none of them have yet found their way to this country."



GROUND PLAN.



SECOND STORY.

Rural Architecture.

BY J. H. HOBBS & SON, ARCHITECTS, PHILADELPHIA.

The above is the design of a building erected by E. S. Farson, Esq., at Maren's Hook, upon the Delaware River, a few miles below Philadelphia, Pennsylvania. It is of frame, substantially built, and lined with rough boards on the outside, laid diagonally; covered with two thicknesses of felt and weather boarded. Gas throughout, fully plumbed, with hot and cold water, a large brick heater in the cellar, slate roof, and all fully painted. The cellar is 7 feet clear, and; first story 10

The Horse.

Road Horses.

BY PROF. G. A. GOING.

The method of keeping road horses during winter differs little from that adopted in summer, with the exception that warmer clothing is necessary, and that horses which are called upon to perform fast work in cold weather are now generally clipped.

The great essentials to horses' health and comfort during winter are cleanliness, pure air, plenty of light, sweet hay and oats, dry clean bedding and a stall free from draughts. There are many diseases which may be averted, particularly during this season of the year, by the adoption of good sanitary measures, and having a due regard to the animal's food. The sudden changes which are sometimes unavoidable affect the animal comparatively little if the system be healthy and prepared to resist disease. Among the most annoying are scratches, stocking, etc., and the dangerous cough, pneumonia, etc. Dampness always propagates scratches; therefore when the animal comes in he should not have his feet washed and allowed to dry by evaporation, as this is a generous invitation to this kind of disease. Uniformity of clothing and temperature will, in a great measure, prevent pneumonia, cough and similar diseases. With reference to regimen, we are too much inclined to give the same kind of food continually. It is with many, hay and oats and oats and hay, without further variation. Apply this rule to ourselves, and you will find how quickly we will object to it.

Vegetables may occasionally be very advantageously fed, say carrots and similar roots. These are slightly diuretic and laxative in effect at first, and have a tendency to cool the system. After using for a short time, they produce adipose tissue too rapidly. This is not desirable in road horses, as it is muscular, not adipose, tissue we require.

About two pounds of carrots are equal to one pound of oats, but affect the animal as above, and are, consequently, required only occasionally, say twice a week. Sweet apples, when easily procured, are an excellent article of diet for a change. Horses driven fast and suddenly stopped and turned into a shed, whether open or closed, should be well blanketed.

Horses for England.

The steamer Helvetia, which sailed for Liverpool recently, took out twenty-four American horses, mostly designed for carriage use, but some for farm work. Eighteen of these were from the stables of Mr. Isaac H. Dahlman, who has for several months past been engaged in the purchase and transportation of horses to England, and the remaining six were purchased by an English gentleman.

Only within a few months has the trade between this country and England in the matter of horses reached any dimensions worth mentioning, the first regular shipment from this port having been made last spring. The stables which went from here previously were mostly stock taken over for the purpose of racing. But the recent Franco-Prussian war made an active demand for horses, and the Turko-Russian war now raging may have affected the supply, so there has sprung up a commerce in American horses that is increasing, and which may become a very important feature in our foreign commerce.

The horses are not bought in this city. They are purchased in Pennsylvania, Ohio, Kentucky, and western New York, at rates varying from \$125 to \$200, and in cases of extra valuable stock even more. The cost of transporting a horse to Liverpool is from \$60 to \$75. They sell in England at

from \$300 to \$400 each, affording a fair margin of profit.

The horses are fed four quarts a day of oats, besides soft food and hay. The narrow box-stalls are bedded with sawdust, as being more comfortable to the feet than straw, and a man is constantly, night and day, in attendance on them. When the horses became very tired slings are so arranged that their weight is taken off their feet. The Journey seems to agree with them. Instead of losing their generally gain in weight, and when the restraint of the sea voyage is removed, and they once more touch terra firma, they are so frisky they can hardly be held in.—Rural World.

Farmers who look after the health and comfort of their stock, and not trust to hands, seldom suffer pecuniary loss by disease or death of stock.

apart, about ten seeds to the foot, and the growth at first is slow. The stems are short jointed, and from each joint, which are only six or seven inches apart, there is produced a leaf two inches broad and three to four feet long, bearing some resemblance to the common Indian corn in color and substance. This plant, when a few inches above ground, begins to tiller, and new shoots grow rapidly from the root, numbering half a dozen or more. Though the growth, at first, is slow, when it has established its root in the ground, the main stem and the tillers shoot up rapidly, sometimes to the height of eight to ten feet. If cut when three or four feet high it may be cut several times in one season. When green it is very succulent and devoured greedily by every description of stock. When saved for hay it is greatly relished by cattle and horses, and the stalks are very succulent, even when dry. Its tillering so abundantly prevents the growth of large, coarse stems, like the Indian corn, and saves much of the seed that would otherwise be required. One, or, at the most, two quarts of seed will seed an acre.

The Coming Flower.

There can be little doubt that the new race of tuberous begonias is destined to play an important part in the decorative gardening of the future. The begonia is, so to speak, the coming flower. There are two particular lines which we may expect to see the tuberous begonias extending themselves — namely, as greenhouse summer decorative plants, and as bedding out or rock plants. In each of these they have already distinguished themselves. As indoor decorative plants they come at a season when they are especially useful — namely, at the time when greenhouse flowering plants are becoming scanty, and when for the most part recourse must be had to the tender annuals. For this decorative use their free branching habit, and the abundance of flowers they produce while still of moderate size, eminently adapt them. Their usually rich and now varied colors particularly recommend them for this use. Then as to bedding out and furnishing rockwork, the success which has already been realized is most encouraging. Experience teaches; and so as we find available material for bedding out amongst the earlier hybrids, we shall be led to look out for others amongst the more advanced types, when we shall get larger flowers and greater choice of color. Their capability of bearing up against heavy rains is a quality one could scarcely have expected of them, and the knowledge of it is, therefore, all the more welcome.—Gardeners' Chronicle.

Calves and yearlings, and cows and oxen as well, when infested with lice, should be freed at once by rubbing the skin with a mixture of sweet oil and kerosene in equal parts. During the winter young animals should be kept growing by means of nutritious food, good shelter, and cleanliness.

The San Francisco Chronicle says that California would be better off without her gold mines, and argues the point as follows:—"There are 3,000 people in San Francisco alone who live, directly or indirectly, from the purchase and sale of stocks, averaging in their expenses \$3,000 a year. Here are, then, \$9,000,000 which the possessors do not earn, but which is earned by their victims. Mining is no unproductive industry, but the value of its products are more than eaten up by the gambling speculators which it stimulates."

The San Francisco Pacific Rural Press has been presented with fruit preserved for months in a sound condition by being buried in sand. Among the specimens thus preserved was an orange that was interred in dry sand for seven months, and was found to be perfectly sweet and fresh when eaten. These experiments do not accord with similar ones in other sections. But California is an exceptional State.



Egyptian or Pearl Millet.

This rare plant, of which we give an engraving above, gives fair promise of being a great profit to agriculturists. Though only now brought prominently forward, it had been little known to botanists and agricultural writers. Twenty years since it was noticed in an agricultural journal as a tall, leafy, luxuriant, rapid-growing grass, that was highly valued in Florida. It is now very highly spoken of, and, if it be proved to be as productive and nutritious as is expected, it will prove to be a very valuable addition to our grasses for soiling and hay. It is said that as much as nine tons and a half of hay have been saved from one acre of Egyptian millet. It will not mature in the Eastern States, and to this, in the past, may be attributed the neglect into which it was permitted to fall after its first introduction. The seed, however, is easily procured from the South. It is sown in drills twenty to twenty-four inches

Agriculture.

Rest versus Manure for our Land.

BY H. IVES, BATAVIA, N. Y.

Through the best farming sections of our country farmers are keeping their lands almost continually under tillage and crops, as though they supposed that the only way to obtain any profit from them. And now they are being put to their wits' ends to know how to keep up the fertility of these lands. They will of course use all the manure they can get, but it is only a limited amount of that which it is practical for them to obtain, so they will next buy some commercial fertilizer to stimulate their lands to keep on growing tilled crops, as though to abandon them would be to abandon farming. Now the best thing that can be done for most of these lands is to give them rest, and while resting from such crops as they had previously been growing they might return their owners a fair income as meadow or pasture lands, if properly seeded down; and to lie in turf for a year or two is such a rest and change from continual tillage that when plowed again it is found to be in about the best condition for any crop, though to spread a good coat of manure on this turf the fall before plowing would be still better. Such a fresh broken turf is called in England "new ground," and it seems to renew the life and fertility of the soil to rest so under a clean turf for a time.

But when sowing a field to grass or clover, if the seeding fails, leaving the land bare of any green growth, I believe that to be the worst condition my land could be left in, for to lie barren so will tend to impoverish the soil as well as its owner; so in case the grass seeding fails, I will re-seed immediately after removing a crop to rye, or oats, or buckwheat, whatever would be most practical for obtaining a good green growth to cover the ground again, and to plow under as a green manuring instead of a grass turf. I also find great advantage in following this management after early corn or potatoes, or on any bare stubble ground, whenever I can get the time in the interval between the harvesting of one crop and the putting in of another, to occupy the ground in growing one of these crops to enrich the land by plowing them in for green manuring.

In a rotation of crops land will find partial rest by growing a different kind of crop each year of the course, but if the plan of rotation requires one or two years' lying to clover or grass, so much the better. If a three years' course be adopted, have for the first year a hoed crop, the next grain, and seed to clover and timothy; the third year grass. Or for a five years' course: first year plant corn or potatoes, next year barley or oats, third year wheat or rye, and seed to clover and grass; fourth year mow, and fifth year pasture.

This course will give very fair rest for the land, for though it is contrary to philosophy and theory, we find in practice that our cultivated lands improve while seeded down for a year or two, though we even cut two crops of clover a year and take off from the ground.

A neighbor has for years carried on two systems of rotation on his farm, by which he is almost assured of good crops and a good fair income, with a comparatively light expense of labor and his land apparently growing richer year after year. He adopts the five years' course described above for the fields near the barn, but for that lying too far off to draw the manure on to readily he has a three years' course, two years to clover and one to wheat, and he says that for a number of years his crops from this had been over 30 bushels of wheat per acre, except the last, which was 28 bushels. A field by the side of this, on another farm of equally good soil naturally, tilled and cropped in the usual

way, gave an average for the same number of years of only about 15 bushels of wheat per acre every other year, and the land growing no better, showing readily that if it will barely pay this farmer to grow his 15 bushels of wheat per acre, the other farmer with his 30 bushels would have 15 bushels as a clear profit or income, and for the years it is lying to clover it is sure to pay as pasture or mowing lands. And by keeping much of his ground seeded down he can obtain much manure, and by plowing up less each year can manure it heavier, insuring good crops at less expense by the bushel and requiring less labor to manage the whole farm than if run more excessively to grain. I have also seen a great improvement of land by its resting in a field so overrun with quack grass that no one wanted to undertake to till it, so it had leave to lie two or three years to grass, which was mowed yearly; but when this was plowed, planted and tilled so thoroughly as to subdue the quack, it grew large crops, and the soil was evidently richer and in a higher state of fertility than it had been for years before. Now, if farming pays better by having our lands richer, and if we can make them richer by giving them more rest in lying well seeded to grass or clover, and by having more manure to use on the land we do till, would it not pay better to give our land more rest?

Barley Exports.

The following cheering remarks appear in the *Monetary Times* of Saturday last:—"A noteworthy feature of the Canadian grain trade this season is the unusual quantity of barley shipped to Great Britain. There have been large sales for export this week; one firm sold on Wednesday ninety cars bound across the ocean; and it is stated that no less than a million bushels have been shipped to Britain of Canada barley thus far this season, the bulk of it from New York, but some of it via Portland. This is a greater quantity by far than that market has ever absorbed of our barley in a single season. It is important to notice, too, that the bulk of it, if not the whole, is of the grade known as No. 2. American customers for our barley lay great stress upon its color, and insist upon having No. 1. The British market on the other hand, is only concerned that it shall be of a certain weight per bushel for malting purposes, and regards the color as a minor matter. The effect of this new and capacious outlet is to bring up the price of No. 2 barley to much nearer the figure of No. 1. So long, therefore, as we can meet the views of British buyers of barley, with respect to weight and price, that long we are reasonably sure of a market in the mother country for a material proportion of this important cereal. The matter has gone beyond an experiment, and the prices obtained are evidently satisfactory.

American Farming and English.

In a letter of T. Meehan to a Philadelphia journal, he draws a comparison of American and English farming, to the disparagement of the latter. F. J. Emary in a reply, in the *Western Farm Journal*, says he ought to know something of the farming in both countries, having practiced farming 20 years in America and seen farming in England for a similar period. His comparison is as follows: Mr. Meehan blames the English for not taking readily to improved machinery. Where is the American farmer of to-day with his improved machinery? Worse off than 25 years ago before it came much into use. His patented improved machinery, sold to him at extortionate prices, has helped him into mortgage and bankruptcy more than any other one cause (outside of politics.)

Mr. Meehan says weeds abound more in England than America. If so—Lord help the English. Most of their land is deeply plowed in fall, and on a great portion the crop started in the fall. In the spring a small toothed harrow is run over to mellow the soil and destroy small weeds; and lastly, boys with small hoes are usually sent to cut out any large weeds likely to make any headway; and the crop is generally very clean up to the time of harvest. Such was my experience 25 years ago, and farming as I understand is done much better now than it was 25 years back. I never saw a crop of small grain in England not worth cutting. I have scarcely witnessed one year in America, but whole

fields of small grain were too poor to pay the expenses of cutting—whole fields of corn abandoned to weeds and the corn not worth picking.

Mr. Meehan mentions the English farm laborer as easily affronted when expostulated with for want of punctuality—demanding his pay forthwith and departing. Our experience here is not one farm laborer in ten but breaks his engagement without provocation. Give him his own price and he is dissatisfied with the pay or with something else.

The American farmer in numberless instances burns up his straw, sets prairie fires—does all he can apparently to impoverish the land by cropping and by not manuring. The English farmer never burns, but economises all manure and returns it to the land. No underdraining is done in America to speak of. Much, although not enough, is done in England, and one-third greater crop is estimated as the result of underdraining. On newly broken land in this part of America wheat produces about 20 bushels to the acre, and gradually diminishes year by year to 8 or 10 bushels per acre. In England as here it produces about 20 bushels per acre and gradually raises to 50 bushels per acre. I have frequently seen such crops. The difference is in a great measure owing to the difference in farming.

Hessian Fly.

In a report in the *Husbandman* of a late meeting of the Elmira Farmers' Club we have the following letter to the secretary of the Club, from Mr. John Johnston, a practical farmer whose name is inseparably connected with American Agriculture:

I have received your complimentary, and have attempted a reply, but neither head nor hand will perform its office as formerly. I came here in 1821 and bought one hundred and twelve acres of what was called very poor land. I did all my plowing myself for six years. I endeavored to sow my wheat at the same time my neighbors did, and they all commenced very early, often in August. I found my first sown always most damaged by the Hessian Fly. About 1829 or 1830 I commenced to sow on the 15th of September and found I had very little fly in my first sown and none in that sown on the 18th and after, and for many years I never commenced earlier than the 18th or 20th of September, and had no fly. After the midge hurt wheat so much I sowed one barrel of salt per acre, immediately after sowing the seed. That made it come in ear all of five or six days earlier, and that saved it from the midge. In 1853, when all crops around me, far and near, were almost ruined, mine gave twenty-nine bushels per acre; salt saved it. I never sowed less than one barrel per acre.

If I could only write I would tell you much more. I am much interested in talks on deep plowing, but I cannot write. Salt prevents rust, but there has been no rust in many years.

Farmer Mechi's Drainage.

I consider it most important that, for spring water rising from below, draining should never be less than four feet from the surface—in certain cases even deeper than that, so that capilarity should not counterbalance gravity. In pure stiff clays, free from spring water, I found that even at five feet deep and fifty feet apart the land has been gradually free from stagnant water, and I have always there had good crops. Although the land in winter does not work so kindly and friably as with shallower and closer drainage (three feet and eighteen feet apart), the crops have been as good on one as on the other. Thirty years ago I drained five feet deep and fifty feet apart on stiff clays (which I rent) as a mere makeshift, expecting to lose the farm; but I still hold it, and can, therefore (much to my surprise), speak of the drainage as effective. At that time it only cost 32s per acre, done with one-inch pipes, five feet deep and fifty feet apart. Wages were then only 8s per week for day work.

Grass is a thirsty plant, and would be grateful for a supply of water occasionally during the growing season. I know of a case near a river where a wet field adjoining the river was drained four feet deep to take off the winter water; but in summer the drains were occasionally stopped to cause the under water to be headed back in the drain until the surface soil was moistened, and then the drain-mouth was opened again. The result was marvelous in the increase of the grass crop. It proved that while a constant wetness of the soil was most injurious, an occasional supply was most beneficial and profitable. The land is like a garden pot, and we know that an occasional watering is very useful and necessary, but we cannot command a period-

cal supply from the clouds. My sewer irrigation is very useful and profitable, but it requires a large amount of capital in live stock.

It is a curious fact that on the sewage farms the grasses multiply their roots so thickly at and near the surface to meet the sewage, that the ground is white with roots when the grass is cleared or cut. The vast network of roots in pastures demands much moisture, quite different from the cereal crops. In pluvial and clouded climates the drains should be closer than in coral districts with sunny, long dry intervals. Where trees or fences are near spring drains, the drain pipes should rest above a layer of stones; if not, the pipes will be choked with root fibres. I have had practical evidence of this. Where there is a great pressure of water from below, with a boggy or fibrous surface soil, the drains must be deep. In my case I had to place one twelve feet below the surface. That drain discharges 24 gallons per minute even in summer, and has done so for more than 30 years. It has drained a very large area and comes out of a white sand; another gives about half that quantity.

The Progressive Farmer.

In an article on Growing Forests, the *Prairie Farmer* speaks of the progressive farmer as follows:

The progressive farmer is he who looks forward with pleasure to that which planted now may in the future yield him a fit return for his trouble and toil; whose horizon is not bounded by the planting and sowing of mere annual crops. He breeds stock not only with a view to the natural increase, but at the same time with intelligent efforts to make it better and better, year by year. He builds sheds and barns for their comfort. These again he shelters with belts and groves if he already has them not. He plants orchards and cares for them. His garden as well as his farm is a model of neatness. It is true he is not found in the corner grocery, nor employed in mere gossip in the village streets. He is generally found at home—when not away on business—reading, studying, seeking pleasure in thinking how best he may introduce some added convenience for the comfort of his family, or the good of his stock. It is this class of men who are gradually coming to see the importance of timber planting as one of the means to the greatest success. These will yet come to know that ten to fifteen per cent of their farms planted to belts, as a protection, will add fully twenty-five per cent to the productive capacity of their farms. Thus their growing timber, if of the right varieties, while it is adding to the productiveness of their fields, will besides, give an added value to their farms at the end of ten years, of fully twenty-five per cent more. Meanwhile the thinnings from the timber will fully compensate for the labor expended in the cultivation. Thus while they will have left a most valuable legacy to their heirs they will have made themselves and their families comfortable during their lives.

Agriculture in Cape Breton.

From the *N. Sydney Herald's* report of the meeting of the Mahon and Port Hope Agricultural Society we select some items of interest to farmers:

Mr. L. McNeil, in replying to the address of the President, urged the importance and advantages to farmers of subscribing to a good agricultural paper, and believed that as a class they do not realize how much the improvement of the mind has to do with farming.

As noticed by the report, the directors of the Mahon and Port Hope Agricultural Society have this season made a move in the right direction by importing a large quantity of wheat and other seeds from Ontario. They have hitherto confined their operations chiefly to the importation of improved stock, but this new move is certainly one of the legitimate ways in which they can expend money and put forth effort, and it is gratifying to learn that the results have exceeded their most sanguine expectations. The wheat yielded a large percentage and the quality was equal in every respect to that imported.

If the farmers of the country expect to prosper in their calling they must endeavor to raise stock of such a character as will find a ready market at remunerative prices. This is a matter for the consideration of business men as well as farmers. Their interests are so closely identified with those of the farmer that the one cannot prosper without the other.

Notes from California.

(Abridged from a letter from E. B. H., California, to *Western Farm Journal*.)

Owners of cattle and sheep are damaged by drouth more than all others. Of the 100,000 sheep that have gone from this section of California, not one-tenth will return though we may have ever so good a season. The dried carcasses are seen upon the sands of the Mahone desert and along the roads to the mountains. The few sheep and cattle left at home have done well and some of them are good for the market as mutton and beef. Had there been only half as much stock in the country we would have had grass enough to have carried them through. The country was overstocked. The pasturage is so abundant in the ordinary season that we are prone to get too many stock for the greatest profit. The price of mutton and beef I think has been less in this State than in any other part of our country. One man took about 15,000 sheep to feed through the season, for one-half the flock. When he had arrived to his point of destination he had less than 2,000. Another man took 5,000 to lower California; he arrived to abundant feed after many days of hunger and thirst without half, but turning them on the good grass they eat too heartily, and the next morning 12,000 were dead and more were dying.

Grain Raising and Stock.

From the *Country Gentleman* we reprint an article on the subject that has more or less been insisted by agriculturists. We have ere now directed the attention of our readers to this important point—in order to raise more grain we must make more manure—to make more manure we must feed more cattle—to do this we must feed more of our farm products on the farm.

The progress of agricultural education, in a practical direction, is shown most conclusively in the greater economy manifested in the use of refuse products. A few years ago straw was considered useful only as bedding or litter for stock, and the manure derived from its decay. When Mechi, during this generation, proposed to make it valuable for growing stock, and thus enable the grain raiser to feed more animals, and fertilize the land for more grain, he was laughed at, in a meeting of wise English farmers, as a visionary who knew more of trade and city affairs than agriculture. But he was intensely practical, and demonstrated his visions by making straw an important auxiliary in feeding steers most acceptably for the butcher. He presented his ideas worked out into practical results, and thirty years have brought a great change in English opinion on the value of straw, as will appear from reading frequent articles in their agricultural journals. The *London Live Stock Journal*, in a late number, called attention to the steady advance in the price of straw, and notes the fact that when wheat growing was unprofitable for the grain itself, it had now become profitable from the value of the straw. It says: "The fact can now almost be maintained that the true arable farmers, who produce corn alone, are disappearing, and the real aim and object of the arable farmer is the growth of stock. It is for the butcher that he plow and sows, and not for the miller. The price of straw shows the way the wind blows.

"There was a time—many years since—when, if a man was known to feed his cattle with straw, he was looked upon as either in a bad way pecuniarily, or extremely miserly. Now the use of straw is nearly universal, though in conjunction with other materials."

It also speaks of the aid the shorthorn has been in rendering stall feeding profitable, and in utilizing straw in conjunction with grain. In fact, there seems to be a great change in reference to connecting grain raising with meat production. There, as in this country, grass was considered a prerequisite to stock feeding, and grain farming as excluding stock to any profitable extent. Farmers have been wont to consider grain as too expensive for beef production, and they have not been quick to see that straw, although an imperfect food in itself, when mingled with a small portion of grain, becomes as well balanced food as grass or hay. The agricultural chemists have assisted them to understand the value of different kinds of food, and the propriety of mixing those of diverse elements.

It is most appropriate that much tilled land should be largely manured, and the general farmer must rely, for this manure, upon stock.

Let us see what is required, chemically, to make

straw equal to hay. The average analysis of meadow hay gives of digestible food 52 per cent., including about 8.2 per cent. of albuminoids. Wheat straw has 35 per cent.; barley, 38 per cent.; oat, 44 per cent.; corn fodder, 42 per cent.—an average of about 39 per cent.—of digestible food; but they are deficient in albuminoids, having, on an average, about 3 per cent. If we suppose a fair crop of oats to be forty bushels of grain (1,280 lbs.) and once and a half that weight of straw (1,920 lbs.); then, if ten bushels of oats (320 lbs.) be mixed and fed with the straw, we shall have 2,240 lbs of food equal to hay, and have thirty bushels of oats left; or, if we mix 576 lbs. of wheat bran, we shall have 2,500 lbs. of food equal to good hay. Take the wheat crop of 25 bushels (1,500 lbs.) to the acre, and there will be about 2,500 lbs. of straw; now, the wheat being ground into flour, there will be about 40 lbs. of flour and 20 lbs. of offal (bran middlings, etc.) to the bushel. This will give 500 lbs. of refuse to be used as cattle food, and if the 500 lbs. of bran, etc., be mixed with the 2,500 lbs. of straw, we shall have 3,000 lbs. to the acre of food about equal to hay. Thus conducted, wheat raising and cattle growing work nicely together, and the fertility of the soil is not much reduced, for the largest proportion of nitrogenous or muscle forming elements, and the phosphate of lime, etc., of the wheat crop, go back into the soil in a soluble form, ready to grow more wheat or grass. So of the other grain crops. The straw may all be utilized by the addition of a small amount of concentrated food. Cattle and other stock raising is the natural complement of grain raising, keeping up an equilibrium between the deposits and the drafts of agriculture.

Some farmers will answer to this that it requires too much labor—is too complicated; that farmers are obliged to follow a simple system, and cannot go into so much compounding of materials for feeding. We answer that the farmer is a manufacturer, and that he should exhibit as much skill and perseverance as other manufacturers. There are many of our manufactures that would cease, or the price of the product be greatly raised, if the refuse were not utilized. The refuse of the distillery, of the starch factory, of the corn sugar manufacture, and hundreds of others, pays a large part of the expenses of the manufacture. It behooves the farmer to study his materials and use them to the best advantage, as much as the miller, the manufacturer of beet sugar, of glue, of linseed oil, of gas, or any other product. The successful agriculturist of the future will study all his resources, use everything, waste nothing. The recuperation of the Middle and Eastern States must depend largely upon judicious stock farming in connection with grain raising. Each acre in grain will represent in materials for feeding animals, three-fourths of an acre in good grass, besides three-fourths of the grain for market. Every grain farm should keep animals in proportion to the grain raised. Then it will be, the more grain the more stock, the more stock the greater prosperity.

A much larger proportion of our farms can with profit be assigned to the grasses as under the new system of our method; more money in the acre of clover than in that of corn; more beef, more pork, with comparatively little labor. The improved breeds of farm stock prove to be most reliable to the modern farmer.

Mixed farming is more certain than to rely on one branch only. Cattle, hogs, sheep, as a specialty, are subject to failure, but in mixed farming if the calf dies the calves may live, if some pigs die the lambs may be first-class. The same may be said in regard to grain and root crops. If one crop fails on account of unfavorable weather, the other may be good. Improve your stock; don't stop, but improve again.—*Prof. Knapp*.

Drainage, plenty of manure and heavy dressing of coal ashes, with frequent stirring, is the very best treatment for all soils of a close, heavy texture. It is by such simple means that we have converted a comparatively barren soil into a high degree of fertility and production.

Good, seasoned muck is of immense service to farmers when used as an absorbent, and the stalls for animals should be so constructed as to admit of a wide passage in the rear, with generous room for the muck to be used daily with the droppings.

The only safe way, if improvement is the object, is to breed from full-blood males. Always use such, and the pure blood will rapidly gain the ascendancy.

Agricultural and Arts Association of Ontario.

The Council of the Agricultural and Arts Association of Ontario met at the Agricultural Hall, corner of Queen and Yonge Streets, Toronto.

There were present: L. E. Shipley, President; Thomas Stock, Vice-President; Hon. D. Christie, Profs. Bell and Buckland, Messrs. Stephen White, A. Wilson, B. Hopkins, Ira Morgan, Mackenzie Bowell, M. P., James Young, M. P., Dr. Burnet, Sheriff Gibbon, James Fraser, J. R. Holden, S. Wilmott, Wm. Saunders, George Graham, Captain D. McCrae.

The President took the chair at 10 a. m.

The Secretary read the minutes of last meeting, which were approved of.

REGISTRY OF THOROUGH-BRED STOCK.

The Secretary read the following report:—

Agricultural Hall,
Toronto, Jan., 1878.

Meeting of the Committee of the Agricultural and Arts Association to consider the registry of thorough-bred stock. Present—Messrs. L. E. Shipley (President), Hon. D. Christie, Prof. Buckland and Thos. Stock.

Moved by Hon. D. Christie, seconded by Thos. Bell, That the Committee recommend the Council of the Agricultural and Arts Association of Ontario to keep a record of the pedigrees of thorough-bred live stock, viz., horses, cattle, sheep and swine.

Moved by Hon. D. Christie, seconded by Prof. Buckland, That the fees charged for registration of thorough-bred stock be as follows:—Horses and cattle, 50 cents; sheep, 25 cents; swine, 20 cents.

Moved by Mr. L. E. Shipley, seconded by Mr. T. Stock, That the Committee recommend that the forthcoming volume of the Canada Shorthorn Book be published in two parts, one part to comprise males; and that the price be for the volume in two parts, \$5, and that the edition be as heretofore, 500 copies.

All of which is respectfully submitted.

L. E. SHIPLEY, Chairman.

The report was adopted unanimously.

The Secretary then read the following report:—

REPORT OF DELEGATES TO AMERICAN SHORTHORN BREEDERS' ASSOCIATION.

To the Council of the Agricultural and Arts Association of Ontario:

At their last meeting the Council of the Agricultural and Arts Association appointed the undersigned as delegates to represent them at the annual meeting of the American Shorthorn Breeders' Association to be held at Lexington, Kentucky.

Your delegates attended the meeting of that body, whose session began on the 31st October last. They were very cordially received, and took part in the proceedings, which were interesting and important.

The undersigned beg to refer to a subject which engaged the attention of the Association, and which is of great importance to the people of Canada and the United States, namely, the abolition of duty on all kinds of live stock on both sides of the line. In his annual address the President advised the Association to consider the propriety of asking the Congress of the United States and the Parliament of Canada to remove the duty referred to. A resolution to that effect was passed unanimously. If carried into effect this proposal would do away with some injurious restraints on commerce between the two countries, and it would give fresh impetus to the important trade in live stock, and in beef and mutton with Great Britain, a trade which is little more than a year old, and which has already attained very considerable proportions, the exports in fresh beef and mutton alone from the two countries having reached in the year ending 30th June, 1877, nearly \$7,000,000. In that year the exports of meats, salt and fresh, amounted to some 70,000,000 lbs.

The American Breeders' Association is the representative of the live stock interest of the United States and Canada, an interest in which there is invested a capital of nearly three thousand millions of dollars. The meetings of that body are therefore of great interest to the people of both countries.

The next meeting of the Association will be held at Nashville, Tennessee, on the last Wednesday of October, 1878.

Toronto, Jan'y 9, 1878.

L. E. SHIPLEY,
D. CHRISTIE.

The report was unanimously adopted by the Council.

REPORT ON AGRICULTURE.

Mr. White brought in a motion, seconded by Mr. Morgan, calling for the preparation of a monthly report showing the state of the agricultural interests of the country, and suggesting that the Government be asked to aid the project.

Mr. Young said that a motion regarding this same subject had been brought by him before Parliament, but nothing had been done. It could do no harm for the Council to bring the matter before the Government in the manner proposed; but he was pretty sure it would not have any immediate effect.

THE QUESTION OF SPECIAL PRIZES.

Mr. Graham, Treasurer, introduced the subject of the payment of such a large sum in the shape of special prizes. He had wondered that, notwithstanding the fact that \$1,000 had been struck off the prize list, the sum given away in prizes was scarcely reduced any. He had found the reason to be that no less than \$751 had been paid away last year in special prizes. He thought this far too big a sum.

Mr. Young said he did not think they could have given less and carried out the object they had in view. He had put himself to a great deal of trouble in going round among the exhibits finding out what each was worth, in order to be able to award a suitable prize for it.

The subject was referred after a short discussion.

THE TREASURER'S STATEMENT.

Mr. Graham, Treasurer, introduced the subject of his report as Treasurer. He said he had got his accounts made up, but in consequence of the non-appearance of the auditors these had not been audited. At the request of the chairman, Mr. Graham read his statement for the information of the Council, after which it was referred till audited.

REPORT ON PLOUGHING MATCH.

Mr. Morgan read a very flattering report on a ploughing match held in No. 1 District, on the farm of Capt. Farrington, near Morrisburg. Prizes to the value of \$246 were awarded.

Mr. Holden moved the adoption of the report. Carried.

Mr. Wilmot said he had not been able to prepare report on ploughing match from No. 2 District. He might say, however, that the match was a very satisfactory one, and premiums amounting to about \$1,000 had been awarded.

The report will be prepared.

Mr. Wilmot thought, seeing that these ploughing matches have now become very popular, that the whole of the divisions should join and form a sweepstakes. In this way they would have one grand match.

The proposal of Mr. Wilmot seemed to be received with favour, but no immediate action was taken.

THE HERD BOOKS.

Mr. Young said that the committee had given this matter a great deal of consideration as considerable difficulty surrounded it. They had come to the conclusion to make the following propositions, which they hoped the Council would adopt:—

1. That on Mr. Denison legally transferring to the Council any interest he has, or supposes he has, in the Ayrshire, Galloway, Devon, and Pig Herd Books, that he be paid the sum of \$200 for his labour and trouble in connection with these books. This offer is made without prejudice to the Association's claim to own these books.

2. That the fees received from these herd registers, like those of the shorthorn registers, be received by the Secretary and paid by him to the Treasurer every three months as per resolution adopted at this meeting of the Council, and that instead of getting these fees Mr. Denison be engaged as a clerk at \$50 per month during the pleasure of the Board.

3. That the Secretary make an inventory forthwith to be laid before the next meeting of the Council of all the works in the library, the herd books and all other printed matter, and that at the closing meeting of each year the Secretary be instructed to place a statement before the Council showing the number of herd books and other publications sold or disposed of and the stock on hand; with the amount of fees and such other information on the point, if any, which may be useful.

4. That hereafter for each certificate given by

the Secretary for the registration in the herd registers the following fees be charged:—Horses 25 cents, cattle 25 cents, sheep and pigs 15 cents.

The report was received and considered *seriatim*.

Rev. Mr. Burnet objected to the first clause. He considered that if the Council made a payment of \$200 to Mr. Denison, it would be giving a gratuity for what they called their own. As to the herd books, the Secretary should have complete control over them. The principle by which these books had been hitherto managed was a vicious one, and he hoped it would be discontinued.

Mr. Saunders agreed with the remarks of Rev. Mr. Burnet, as also did Professor Bell.

Mr. Wilmot said that the Committee had been unanimous in the matter of giving Mr. Denison \$200. He (Mr. Dennison) had worked hard and faithfully at the herd books, and it would not be right if they were taken away from him without he received recompense. He certainly had a claim on the works, and it would be advisable for the Council to settle the difficulty by paying the \$200.

Several other members spoke to the same effect, and on a vote being taken the clause was carried by 12 to 4.

On the second clause,

Mr. Wilmot said that the Board, by passing the first, must of necessity pass the second.

Mr. Bowell said that there had been some little difficulty as to who was the head officer of the Council. To settle the question he proposed that the following be added to the clause as a rider:—

Subject in all cases to the order and directions of the Secretary unless otherwise ordered by the Council.

The motion having been carried,

Mr. Bowell went on to say that the only question to be considered was whether the Secretary really required assistance? If so, no better person could be engaged than Mr. Denison.

Mr. Saunders was prepared to vote for the clause if assistance was needed. He suggested that the Secretary be heard on the matter.

The Secretary said that in view of the forthcoming publication of the fourth volume of the Herd Book extra labour would be involved, rendering it necessary to employ assistance.

The clause was then adopted. The third clause was also adopted.

On the fourth clause,

Mr. Bowell said the registration fees was rather low. The American Associations charged \$1 for a registration certificate, and he thought their Association should charge at least fifty cents.

Hon. David Christie said the fees in the States were exorbitant. The figures fixed upon by the Committee were high enough.

The clause was carried, and, on motion, the report as amended was adopted.

ILLEGAL PRACTICE OF VETERINARY SURGERY.

Mr. Saunders presented the second report of the Finance Committee as follows:—

In response to the letter of J. C. Sweetapple, requesting the Council to remit certain fines imposed upon persons illegally practising veterinary surgery, the Committee recommend in view of the provisions of the Agricultural and Arts Act providing that all such fines "shall be paid by the committing Justice to the Treasurer of the Agricultural and Arts Association," and "shall thereupon become part of the funds of the said Association and be accounted as such," that it would be injudicious and improper to interfere in any way with the disposition of such funds other than as provided by law.

Your Committee further recommend that the Treasurer of this Association be instructed to take immediate steps to collect any and all fines which may have been imposed under the provisions of the above-recited Act.

We beg further to report that having waited on the manager of the Bank of Commerce in Toronto in reference to the rate of interest to be paid to the Board on deposits made in such bank that we have received a reply to the effect that the rate of five per cent. will be paid upon such deposits, as formerly.

Mr. Saunders moved the adoption of the report, which was carried.

THE EXPORTATION OF CATTLE.

Mr. McCrae moved—

That this Council request the Dominion Board of Agriculture to endeavour to procure from the British Government the admission to the port of the United Kingdom of Canadian cattle (when sent from Canadian ports) on the same terms as cattle sent from other British ports.

The motion was seconded by Mr. Bowell and carried without discussion.

LIVE STOCK AT THE PARIS EXHIBITION.

Mr. McCrae also moved,

That this Council approach the Dominion Council of Agriculture by means of an urgent representation of the importance of exhibiting Canadian cattle at the Paris Exposition, the success attending the Canadian exhibit at Philadelphia warranting the conclusion that a considerable success would attend a like course at Paris.

Prof. Bell seconded the motion, which was carried unanimously.

TIME AND PLACE OF NEXT MEETING.

Mr. Bowell said that before an adjournment was made it would be necessary to fix the time and place of next meeting. He moved that the next meeting of the Council be held on the second Wednesday in March at Ottawa.

Rev. Mr. Burnet was not prepared to vote for holding the meeting at Ottawa, as it greatly increased the expense. The expense connected with the last meeting at Ottawa amounted to \$591, while at Toronto they did not go beyond \$325. That was a very strong objection why the meeting should not be held at Ottawa.

Mr. Bowell said that after hearing that statement he was not in favour of fixing upon Ottawa as the next place of meeting, and accordingly withdrew his motion.

Mr. Young said that on former occasions he had been in favour of holding the annual meeting at Ottawa, where just at that time three members of the Council—Hon. David Christie, Mr. Bowell, and himself—were engaged in Parliamentary duties. However, on grounds of economy, he was now prepared to vote to have the meeting held in Toronto. He moved that the next meeting of the Council take place in Toronto on the third Thursday in March.

The motion was seconded by Mr. Wilson.

Mr. Wilmot believed that the members would be greatly benefited by going to Ottawa. The Council, besides, would lose the services of three of its ablest members if the meeting was not held in that place, as Hon. David Christie and Messrs. Bowell and Young would not be able to go to Toronto on account of their duties at the Capital. He moved that Mr. Young's motion be amended by inserting "Ottawa" instead of "Toronto."

Mr. White seconded the amendment.

The amendment was put to the meeting, the vote being a tie. The President gave his casting vote against the amendment, which was consequently defeated.

Mr. White moved a second amendment to the effect that the calling of the meeting be left in the hands of the Secretary.

This amendment was also lost, after which the original motion was carried. The Council then adjourned.

Meeting of the Dominion Grange.

ANNUAL MEETING—DELEGATES PRESENT—THE MASTER'S ADDRESS.

The Dominion Grange held its annual meeting Tuesday 15th January in the Albert Hall. The following are the names of the officers present.

Master, S. W. Hill, Ridgville; Stephen White, Charing Cross; L. E. H. Hilborn, Uxbridge; S. R. Whitman, Quebec; Chaplain, J. Manning, Shomberg; Treasurer, J. P. Bull, Downsview; Secretary, W. Pemberton Page, Fonthill; Ceres, Mrs. Tull, Oshawa; Pomona, Mrs. E. J. Whitelaw; F., Mrs. Losse; Stewardess, Mrs. Gould.

Executive Committee—J. Daly, Newburg; A. Gifford, Meaford; A. J. Hughes, Sharon; Wm. Cole, Cole's Corners; Chas. Drury, Barrie.

Auditors—L. Chyne, Brampton; H. S. Losse, Norwich.

Dominion Agent—W. N. Harris, Napance.

Fre Insurance Committee—R. J. Doyle, Owen Sound; B. Payne, Delaware; J. W. Ferguson, Birr.

MASTER'S ADDRESS.

In my former addresses I have alluded to the importance of the Grange to the farmer and his family,

for its social and intellectual advantages, and the more I labour in the cause the greater I feel the necessity of urging upon its members everywhere the advantages to be derived by associating with each other in the Grange for their social and intellectual advancement, for these are the principal pillars upon which the structure rests. Although there are many benefits to be derived by co-operation in financial interests which I do not ignore, it is an acknowledged fact that "The Grange is capable of breaking up the isolation of the farmer's life;" if so, it must also be acknowledged that it is the social and intellectual advantages it offers to all those who enter within its gates. We often hear it said farmers as a class are not recognized or represented in positions of trust or legislature, as they should be; the fault, I believe, lies with farmers themselves, more than from hindrance from others. In the first place, power and influence does not depend upon the positions of trust any class may hold, but a thorough knowledge of the duties and requirements such positions demand. Therefore, it is our privilege, as well as duty, to educate ourselves, which perhaps could not be more readily done than by accepting the advantages offered us by organization. The agricultural class being a large percentage of the population of Canada, and their occupation the most important of the various occupations, bring to it responsibilities of grave importance.

We now number over six hundred subordinate Granges—a number sufficiently large to have their influence felt in nearly every locality in the Dominion.

It will be seen that much good work has been done during the past year, which places the organization upon a better basis than before. This Grange, at its last session, authorized application to be made out to our Dominion Parliament for incorporation of the Grange, which was kindly granted by said Parliament, of which the Worthy Secretary will speak more fully in his report.

This session brings us to the end of the Grange year, and with it terminate the duties which I undertook to fulfil as Master of this Grange. Conscious of love for the cause and devotion to its objects; a hope is indulged that its interests have not been neglected, and as I lay off the mantle of responsibility, a feeling of sadness comes over me, comparable to an individual leaving a happy household; but the cloud has its silver lining, for I look back with pleasure and gratitude for all the kindness and courtesy that has been extended to me, for in all my Grange correspondence I have never received an unkind word or an uncourteous letter.

The Secretary read his report, from which we make some extracts:—

The year 1876 has been marked with a continued growth and spread of our beloved Order. True, I am not able to show as large an increase in membership, or in numbers of subordinate Granges as in the previous year; yet, the encouraging condition of the Order at present, and everything in connection with our work, points to a certain growth in the principles of the Grange, which fact serves to strengthen the faith placed in it by our members, and also serves to strengthen the respect in which it is held by other classes.

Ours is not a selfish purpose, we would not forfeit our good name, the dignity of our profession, by interfering with the rights of others, or assuming an aggressive position towards them. "We desire only self-protection and the protection of every true interest of our land by legitimate transactions, legitimate trade, and legitimate profits." It is urged as a point against us, that the farmers have no right to become traders—business men in the common acceptance of the term—that theirs is to cultivate and produce the grain, while it should be left to others to speculate upon its sale. This may be sound doctrine, good reasoning, but to the present Canadian farmer, who is learning to think for himself, it will hardly be accepted as sufficient argument to prevent him seeking better markets and more remunerative prices through the medium of direct sales to the consumer, and likewise to lessen his general expenses by direct purchases from the manufacturer and wholesale dealer. There is, however, a proper place where to draw the line, that in our efforts to accommodate and benefit ourselves we do not encroach upon the right and privileges of others, and by selfish endeavours defeat the object in view. This, then, will demand careful attention, and I trust in our deliberations upon it we may be governed by liberality and wisdom, that the effects of our counsels may in future tend to a more just division of the rewards of honest labour. I will call

your attention to a matter, the adoption of which I think would be of interest as well as advantage to us all. I refer to the collection of reliable agricultural statistics, crop prospects, etc., through the medium of the Subordinate Granges, such information to be forwarded with quarterly report to Dominion Grange, there compiled and distributed by circular to all Subordinate Granges, thus reaching every member, giving him a knowledge of the condition and prospects of the crops, the amount and quality of the products raised and for sale throughout the country.

At the last annual meeting the subject of incorporation being discussed, it was unanimously determined that immediate steps should be taken for the incorporation of the Dominion Grange. The Dominion Grange is now reorganized by law as an incorporate body, with power to extend privileges of incorporation to Division and Subordinate Granges.

There have been organized since my last report (Sept. 20th, 1876) 106 Subordinate Granges and 11 Division Granges, making now 635 Subordinates and Division Granges, with a membership as nearly as can be computed of 25,240. Of new Granges 94 have been formed in Ontario; 6 in Quebec; 1 in New Brunswick; 4 in Nova Scotia. We have also established one in Manitoba, and hope soon to report many more in that Province.

In the afternoon the election and installation of officers took place for the current year as follows:—Master, S. W. Hill; Overseer, Stephen White; Lecturer, E. H. Hilborn; Stewart, Levi S. Whitman; Assistant Stewart, D. C. Parent; Chaplain, G. Manning; Treasurer, J. P. Bull; Secretaries, W. P. Page and T. Putman; Ceres, Mrs. Trull; Pomona, Mrs. Hilborn; Flora, Mrs. Lossee; Stewardess, Mrs. Massey.

A report was delivered by Bro. Dudley T. Chase, of New Hampshire, delegate from the National Grange of the United States, expressing fraternal relations with their brethren on this side the line.

THE TREASURER'S REPORT FROM 7TH NOV., 1876, TO 31ST DEC., 1877.

Receipts.	
Balance from last year.....	\$2,475 68
Receipts from Secretary, &c.....	\$5,086 38
	<hr/> \$7,562 06
Expenditure.	
Delegates to annual meeting, 1876	\$1,360 90
Salaries.....	788 00
Miscellaneous expenses.....	\$2,268 04
	<hr/> \$4,416 94
Balance on hand.....	\$3,145 12

PRESENTATION TO THE MASTER OF THE DOMINION GRANGE.

The members of the Dominion Grange presented Mr. S. W. Hill, the Master, with a handsome silver water pitcher and address:—

The Master, made a short but able speech. He recited the interest he had always felt in the Grange movement and the courtesy that had been extended to him by the members of the Order, that lightened his labour, and would ever be looked upon as pleasing incidents of his life.

FERTILIZING WITH CHARCOAL.—The owner of a large vineyard on Kelley's Island writes me that a neighbor of his had a large grape vine growing not far from an old cistern which had a filtering apartment filled with charcoal; and a root of the vine, having found its way into that charcoal, filled the entire mass with its ramifications; the effect on the growth and productiveness of the vine was remarkable. He intends, therefore, to try some experiments with powdered charcoal as a fertilizer. It is probable, however, that in the case of the cistern the charcoal was saturated with fertilizing ingredients filtered from rain water, and hence comparatively little benefit may result from the application of charcoal unless mixed with richer ingredients. Saturating it with water in which hen manure is dissolved would no doubt be very effective.—*Country Gentleman.*

The Baltimore *Sun* considers Shorthorns as being possessed of an in-bred tendency to fatten beyond any other known breed of cattle, and have been bred for many generations for the production of beef. The Jerseys, Ayrshires, Guernseys, &c., on the contrary, are noted for their rich quality of milk, in the production of which they excel all other breeds.

Garden, Orchard and Forest.

The Hyacinth in Beds.

BY J. H. GARNIER, M. D., LUCKNOW, ONT.

Last month we described the cultivation of the hyacinth in pots, and now will lay before our readers the best modes of treatment in the open air. This gem of gems for early spring was introduced into England, it is believed, towards the end of the last Crusades, before the time of Marco Polo. It was not by any means uncommon in the reign of Elizabeth, as it is mentioned by Gerrard and other naturalists of her time. Its native country is near Damascus and eastward towards the Caucasian range, and the Hymalayas to the north of Cashmere. In its wild state it is a deep lilac blue. Holland is now the home of millions of these bulbs, whence the rest of Europe and America derive their supply. It is owing to the energy of Dutch florists that this exquisitely fragrant flower is now to be obtained so cheaply, and in such charming shades and tints of almost every color, whether it be a single or double bell.

The cultivation of it is very simple, and as easy as that of any other flower. But simple as it is, it demands the following method, and it is useless to think of growing any sort of flowers without some trouble; and if you intend to take none, don't begin to grow flowers or bulbs.

If possible, select a piece of level ground, and dig it carefully two spades deep. Remove all roots, stones and weeds, and then add a liberal supply of well-rotted cow manure, if you can get it; if not, any well-rotted kind will do. If the soil is stiff clay, add charcoal and lime, with a few cart-loads of coarse or sharp sand, and thoroughly dig the bed till well mixed. We need scarcely say that land on which water lies in winter is useless, as the bulbs would be apt to rot or die before spring. A dry, level sandy loam is the best. Mark out beds three feet and a half broad, and raise them a few inches in the centre, so as to shed the water into the alleys, which for convenience may be 12 to 16 inches broad. If you wish a circular bed, make it exactly in the same manner, and also let the centre be the highest part. Twelve feet diameter is quite large enough for a very large bed, but we can speak from experience and say that three or four small circular beds are far superior to a large one. Such beds look more extended, and in them a far better contrast of color can be displayed. During the time of bloom the beds of hyacinths yield to no other flower we cultivate in richness of coloring, brightness of tints, elegance of contour, boldness of contrast or delicacy of scent. We have thousands of tulips every year, in full bloom, and some hundreds of varieties; but we look on our hyacinths as superior in every way. After the beds are formed, allow them to remain for ten days or a fortnight to settle. Rake them smoothly, so as to make them even, and when you commence to plant see that the ground has been thoroughly mixed and the manure well incorporated. It is a matter of fancy making a contrast of colors, and your own judgment and good taste must be the guide. It is absurd to mix the bulbs indiscriminately, as thus all effect of contrast is lost. Each row should be of one color, and we give exactly the plan on which we planted several beds, with excellent effect, for some years past. Our beds are fourteen feet long and three and a half broad. At each end we always have a row of crocuses, and these have bloomed and their grassy leaves are an elegant contrast to the growing hyacinths. We plant them in rows ten inches apart and four or five inches between each bulb, allowing distance between according to size. The drills are four inches deep and even at bottom, with a tally at each end.

This tally will be found of no small use when the time for lifting them has arrived. The first two rows are white, the second two pink, the third two red, the fourth lilac, the fifth deep blue; then lilac, red, pink and white to the end.

In the first we plant Virginité, second row of white, Norma; then Bouquet Royal and Bouquet Tendre; next Grand Lilac and Prince of Saxe Weimar, which is a very dark blue; Lord Wellington, also double, but excellent; Robert Steiger, Voltaire and Grand Vainqueur, a fine old variety. Having some fifty varieties, we can make the contrast to suit our fancy. Sometimes we place the blues or reds outside, and fill the centre with whites, but always make one line of one variety. Each row has a tally in the centre, with the name on a label, as you cannot possibly remember the variety you have planted without it. These tallies always give a requisite confidence. We begin planting the first week in October, and give all the time we can till they are finished; and it requires more time and patience than the uninitiated would suppose.

As soon as the snow disappears in spring the bud is seen rising through the earth, and early or severe spring frosts seem to injure it not the least. Early in May they are in full bloom, and if bees are in the vicinity they come freely to gather honey. Now is the time to enjoy your lovely bed and reap the reward of your trouble. We always have a few vases in our parlor and drawing-room well filled with hyacinths as long as they remain; and we cannot help feeling regret when they are past. About the last week in June we carefully lift them and lay them away to dry in any place free from the sun; for if not shaded, they are sure to be injured, softened or destroyed. If there are small bulbs attached to the old, we leave them till planting time, and then carefully separate and plant them by themselves; and they bloom freely the second or third season. Cutting the spikes does not in the least injure the bulbs, but on the contrary allows the nourishment that would be drawn to it to be given to the increasing of the root. As soon as the blooming ceases, all the flower stalks should be cut closely, and seed be prevented from growing except when wanted to raise seedlings; and we have some as good seedlings raised in Canada as we get on an average from Holland. In planting circular beds we proceed in exactly the same manner, but for the outside row we think blue is best; then white, and in the centre we like deep red. This is our fancy, and our visitors (and we have scores each season) all seem to enjoy this arrangement as well as we do. We have plenty to spare, and it gives us pleasure to let all who ask have a bouquet to take home.

It will now very properly be asked—What do you do with the beds after the hyacinths are lifted? We do this: Early in May we take papers of different colored Phlox Drummondii and sow up and down, lengthwise, two rows, a foot apart in the centre of the bed, so that when the hyacinths are lifted this splendid annual is commencing to bloom, and continues blooming and growing till the frosts of early winter cut it down. In other beds we plant various other annuals to suit our fancy, or transplant balsams or zinnias, so as to keep up a contrast till fall; and in this manner our flower beds are in bloom as soon almost as the snow is gone, with snow-drops and crocuses first, then hyacinths and tulips, and hundreds of other flowers, to keep up a successive display. And if we can do so with little trouble, surely our good friends can do likewise.

It is said that hyacinths rapidly deteriorate in Canada and the United States. This is true to a certain extent, if not properly attended and cultivated. Some varieties do not do so well as others,

but we can next year show as fine a display as any other private garden in Ontario, and we have not imported a single hyacinth for six years. We can show scores of trusses with over fifty bells, and thousands with from ten up. We always clean off all small bulbs from the larger before planting, and these bulblets soon make flowering bulbs on their own account. If seed is preserved, it should be sown as soon as ripe in a box of good earth, about an inch deep, and the pot be sunk to the brim in any convenient out-of-the-way spot, and not disturbed till the following year, when the little bulbs should be carefully taken up and planted in a small bed in rows two or three inches deep, and treated the same as other bulbs. They bloom in the third year, some of them in the fourth. In this manner new varieties are obtained. The manner in which the hyacinth is cultivated in Holland and rapidly propagated is very interesting and instructive, and will be left for another paper.

It might be well ere finishing to mention the names of a number of varieties that would be more easily grown in Canada, and which have been proved by us for many years.

The double and single hyacinths both grow to the best advantage in open beds, and suit themselves to our climate as well as any other in the world. No sensible person can expect the same bulb to bloom on "for ever," as such a circumstance does not occur in nature. But more of this again. The following are fine varieties:—

SINGLE RED.

1. Veronica; red.
2. Amy; deep red.
3. Robert Steiger; close spike.
4. Madame Hodson; close spike.
5. Dietrich Sabalkansky; extra.
6. Belle Quisine; large bells.

ROSE-COLORED, SINGLE.

7. Norma; very fine.
8. Emilius; light, lively rose.
9. Emmeline; fine and large spike.
10. Temple of Apollo; large bells.
11. Unica Spectabilis; extra.

SINGLE YELLOW.

12. Heroine; citron, green tips.
13. Fleur D'Or; about the best.
14. King of Holland; buff.
15. Rhinoceros; similar to last.

SINGLE WHITE.

16. La pucelle D'Orleans; very fine.
17. Queen Victoria; fine.
18. Voltaire; splendid.
19. Tubiflora; rosy, extra.
20. Semiramis; pure white.
21. Grand Vainqueur; pure white.

DEEP BLUE SINGLE.

22. Blue Amaranth; large, fine.
23. Prince Albert; fine.
24. Siam; compact, very deep blue.
25. William I.; deep blue.

LIGHT BLUE SINGLE.

26. Chas. Dickens; very fine.
27. Grand Lilac; very fine.
28. Robinson; beautiful blue.
29. Orondatis; the best of all.

DOUBLE RED.

1. Waterloo; elegant.
2. Bouquet Royal; fine perfume.
3. Comte-se de la Coste; dark centre.
4. Regina Victoria; good red.
5. Grobvorstij; blush rose.
6. Cœur Fidele; deep centre, good.

DOUBLE BLUE.

7. Prince of Saxe Weimar; dark.
8. Bloksberg; noble flowers.
9. Comte de St. Priest; one of the best.
10. Lord Wellington; beautiful blue.
11. Prince Frederic; large, pale blue.

DOUBLE WHITE.

12. La Tour D'Avvergne; lovely white.
13. La Virginité; dwarf, white.

14. La Deese; white with yellow.
15. Anna Maria; extra pot variety.
16. Paarlboot; large, fine bells, extra.
17. Ne Plus Ultra; purple centre.
18. Triumph Blondie; rosy, fine.

The above have been carefully selected for the public, and we can, from our own knowledge, highly recommend them to the lovers of the beautiful, as they are very cheap.

Our Orchards and Codling Moth.

Fruit growing is now justly appreciated as one of the most remunerative of our Canadian agricultural pursuits. Meanwhile there is no little labour attending it if we are to be successful. There is no other branch of rural industry that at present commands more of the attention of agricultural writers in the neighboring republic than the growing of fruit. We append from the *Country Gentleman* a sketch of a good apple orchard, and from the *Prairie Farmer* an article on the Codling Moth, the greatest pest the orchard is afflicted with.

A GOOD APPLE ORCHARD.

We gave an account some weeks ago of the excellent apple orchard of Giles Landon, in the southern part of Cayuga, Co. N. Y. This orchard contains 120 trees, and two years ago yielded \$600 worth of fruit. This year, when so many orchards have been nearly or entirely barren, the trees in this orchard were seen bending under their loads of excellent fruit, and when we visited the place, early in September, Mr. L. estimated his crop worth \$400. We have just obtained a more detailed statement of the actual sales, as follows: There were sold 284 barrels of fruit of the first quality, for \$1.75 per barrel. There were about 150 bushels of windfalls, of good autumn and winter sorts, which either sold for 30 cents per bushel, or were retained for home use, and were valued at this price for autumn or early winter consumption. There were also many bushels of cider apples, which Mr. L. manufactures exclusively into excellent vinegar, but the precise amount we do not know. The following is the product of the three-acre orchard: 284 barrels of first quality, at \$1.75 per barrel, \$497; 150 bushels, at 30 cents per bushel, \$45; total, \$542.

This does not include the cider apples. The success is not owing to any kind of luck, but to the excellent management we have already described in a former number.—*Country Gentleman*.

THE CODLING MOTH.

This insect is the most formidable enemy of the apple, and the loss from its ravages amounts yearly to millions of dollars. It has for a long time eluded the efforts of orchardists, or most of the remedies have been imperfect and unsuccessful. Every season, however, throws additional light on the subject, and it is probable that in a few years intelligent fruit growers generally will know what to do to save their fruit. The two leading remedies in their hands at present are, the use of the paper-band trap, and the free range of swine and sheep under the trees. The former are more particularly adapted to the younger and smooth-barked trees, in the smaller orchards; the latter to larger orchards, after the bark becomes rough and out of the way of injury from the sheep. In some instances, the two combined have rendered useful service.

The easiest way to use the paper bands, is first to procure a quantity of cheap, coarse wrapping paper, and fold it a few times into a band about five inches wide, and then to tie this with a cord around the tree at the middle of the paper. Insects coming down from above will hide under the loose paper above the cord, and those coming up from below will resort to the lower part. The usual mode for destroying the insects under these bands is to remove the bands, crush the insects, and then replace them—performing this operation every ten days. An easier and more expeditious mode is to provide a soft-wood mallet, made nearly or about concave enough to fit the average size of the trees, and to pound gently with this on the outside of the paper. It requires some practice to learn to do this work effectively.

Sheep and swine have been employed occasionally for the destruction of the insects, but the success has been quite imperfect in most instances, because the remedy has not been thorough and continued. These are two important requisites for success namely: 1. To have animals enough to keep the fallen and infested young fruit promptly and thoroughly cleared away as fast as it appears. For orchards of much size, the number of swine usually kept is quite insufficient, and when sheep have

been turned in they have not remained long enough. As a general rule there should be one sheep to two apple trees, or a corresponding number of swine varying with their size. These animals should be kept constantly in the orchard from the time the trees are in blossom till near the end of summer. An occasional turning in will be of little use. 2. They must be kept in continuously year after year. A single year's operations will not be a fair test, as an orchard once infested cannot be thoroughly cleaned in one year. If the trees are young and the bark smooth, the trunks may require protection from the sheep; there is little or no danger during the summer season of their attacking old and rough bark; we have never known them to do it.

There is another reason why the sheep remedy should be more especially employed in older orchards. When the trees are young, they must be kept cultivated, and there is then less grazing for the sheep. When older, their shade and the depth of the roots render cultivation less essential, as the close grazing, the droppings of the sheep, and a moderate top-dressing of manure once in two years, if the orchard is naturally rich, will be sufficient to keep the trees in vigorous condition. When this thorough treatment has been well kept up year after year, the fruit has been fair, and free from the codling moth, while other orchards in the neighborhood have been numerously infested.—*Country Gentleman*.

Manuring Orchards.

On the subject of manuring fruit trees, W. E. S writes to the Elmira Farmers' Club as follows:—

Having received better returns from my apple orchard this season than from any other crop, I am thinking of doing more for the trees than heretofore, and ask advice of your Club and correspondents. To illustrate what is needed—my orchards have been pastured with sheep for the last twelve years, and it is the habit of the sheep to resort to one place during the day in hot weather. I suppose it is the fly that causes them to do this. Now these trees that the sheep have lain under, and given more than their share of manure, have invariably borne good crops. It is evident that some trees are too highly manured, as the fruit rots and the foliage is too rank. Now the trees of twenty years' growth, where the sheep have lain, averaged four barrels each, while my orchard of 1,200 trees produced 2,000 barrels; in other words, trees well manured average four barrels, and those not manured one barrel. But there are some kinds, as the twenty-ounce Newton pippin and russets, that bear better without manure than other kinds. I think that the King, Baldwin and Holland pippin require more feed than some other kinds. These are the kinds the sheep have favored the most. Now what we desire (and I suspect farmers are pretty much alike about these things) is to raise good crops of all kinds, and as I have been in the practice of putting my yard manure on sod for corn and potatoes, I have none for the trees. I have some experience with ground bone and phosphates on small grains and berries, and think of putting from fifty to seventy-five pounds to each tree this winter, spread evenly over the ground as far as the limbs extend.

Members made the following comments:—

"I have practiced manuring my orchard with barn-yard manure two years in succession, and then in the succeeding year I have applied lime and ashes. There may be better treatment, but I have found good results from this. I get good fruit, and at least fair crops."

"Liberal applications of manure show surprisingly in the improvement of old orchards. I have tried it, spreading the manure under the trees over a space as broad as the tops cover, and the fruit has improved materially. It will do no hurt to spread manure all over the land, but it is important that it should be applied as far from the trunk as the roots extend, and that will certainly be as far as the branches reach."

"If I were restricted to any one kind of fertilizer for orchards, I would use unleached ashes. The writer of the letter may expect good results from them, if he can find enough to use. Whatever kind of manure he can get to enrich the land will be good for his trees, and if they are old enough to bear freely, will increase their yield."

"Rotten chip manure is good; so is leaf mould. If he has a piece of woods near at hand and will rake up the leaves and rotten wood and place them under the trees, he will find the dressing very profitable."

Seasonable Hints—February.

BY HORTUS.

Now will be a good time to plan out the season's operations in the way of fruit-growing. We can hardly say enough to induce you to try the raising of small fruits. It has everything to commend it to your consideration, and nothing to condemn it. The subject recommends itself for the following reasons: Small fruits are easy to plant, sure to grow, can be kept clean by horse-work, and stock indefinitely propagated. The fruit pays better than any other produce on the farm, furnishes light and pleasant occupation to the females and younger members of the family, is easily marketed and commands good prices—no danger of glutting the market; and lastly, it brings in the ready money at a very convenient season of the year. Take, for instance, the cultivation of the black currant alone. Thriving in any soil, stiff or light, moist or dry; being a gross grower, it will stand any amount of fertilizing or manuring, with consequent increase in size of fruit and quality; it enjoys almost complete immunity from insects, and is well known for its hardiness. Supposing you to commence with the purchase of a thousand plants, which would cost from \$60 to \$70, or perhaps less; this would plant half an acre, rows five feet apart and four feet between the plants; this would be ample room. In three years they would average a quart to each plant (a low estimate), say 32 bushels at \$4 per bushel, which would give \$128 for half an acre. Say we take the \$28 for labor of picking, baskets for holding and expense of marketing; we have \$100 left, cash. Not bad for half an acre. But in the meantime, the second year from planting we will be able to thin out while pruning enough wood to make say one thousand cuttings, which go to plant the other half of the acre; or if you should not wish to plant more, you could sell the plants at a large profit. We would also have nearly \$50 worth of fruit the second year. The fruit is a very popular one and in great demand, not only for family use, but large confectionery establishments buy all the black currants they can get at \$4 per bushel. This is a standard price for them; it may go over it, but seldom under. This pays better than raising sheep or other stock. The figures given can be relied on, and are considerably lower than experience would prove.

A variety of fruits would bring an increase of profits. For market purposes we mention the following kinds of fruits, with their varieties:—Currants—London Red, Red Victoria, Cherry, White Grape and Black Naples; Lea's New Black is a fine new variety. Of Raspberries we would plant Franconia, an old, well-known variety with all the good qualities of hardiness, firmness and productiveness—valuable for shipping. Philadelphia, a tremendous bearer; a little soft; is best picked into pails. Mammoth Cluster is the best of the black-cap varieties. Of Gooseberries, Houghton's and Downing Seedlings, native American varieties, are the most profitable; English gooseberries are too uncertain, though when well mulched and grown in a partially sheltered place, free from winds, they thrive very well.

We have drawn particular attention to small fruits as we believe there are a great many people who find it a difficult matter on worn-out farms to make both ends meet, and this business a great many would find more suited to their tastes; and also, if you should decide to do anything in the way of planting largely, whether small fruits, orchard, evergreen or deciduous tree planting, you should now make out lists of what you want and write to nurserymen to see what they could furnish, guaranteed true to name and at what price.

Outside of growing fruit for market purposes, it

is an essential thing for every farm household to have abundance of fruit for home use. That such is the case no one will pretend to deny. And what seems strange is that farmers as a class are more deficient in having a supply of small fruit than any others. The cost of plants sufficient to supply the wants of a family is so trifling that no man who owns an acre of land need be without them on account of the cost of a start. In our warm summers fruit is necessary to good health. The saving in doctors' bills will often more than pay the expense of a crop of fruit.

HEDGING.—The great cost of lumber when wanted for fencing to any extent, and the growing scarcity of trees suitable for making rails, make the question of fences a very important one. Wire fencing has its advantages and advocates, and would be of benefit on rented farms, but on the homestead we must turn to hedges for ornamental and defensive purposes. So much has been written about hedges that the subject is pretty well known; therefore we wish to draw your attention to the advisability and the advantages of planting hedges without more delay. A great many kinds are suitable for the purpose. Wild Plum, Native Hawthorn, Beech and Apple make capital hedges. Cedar also makes a fine ornamental evergreen hedge, but for ornamental purposes and wind-breaks we prefer the Norway Spruce; it forms a dense, impenetrable hedge, affording great shelter to gardens as a wind-break, and in winter gives a comfortable appearance to the outside world. In Berberry and Buckthorn we find the necessary hedge plants for the million; being perfectly hardy, they thrive in the colder parts of Canada. They can be purchased cheaply by the thousand, and will grow in all soils and conditions. Bearing abundance of seeds, it would be a good plan to purchase a few of each to raise some for your own sowing, thus raising your own hedge plants and setting a good example to your neighbors. We give cuts of the Berberry and Buckthorn hedge, showing their appearance after several years' care.

PRUNING.—Take advantage of fine days to examine your trees for insects and to cut out all dead wood and suckers. Prune out branches that are crowding the trees. Be careful to remove all trimmings and rubbish created in garden or orchard, so as not to afford hiding-places for mice and other vermin. Tramping snow firmly around young trees will prevent them from being girdled.

GRAPE EYES, made like cut, can be put in boxes of sand or pots, in rows two inches apart, plunged to leave tip of bud protruding. Put on a little bottom heat in green-house or, in hot-bed; they will root freely and can be potted off in May or planted outside in open ground.

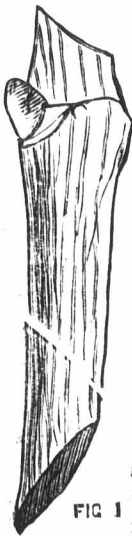


FIG 1

HOUSE PLANTS will need re-potting and shifting, pulling off dead leaves and old flower stems. Any cuttings or slips of geraniums, fuchsias, heliotropes, ivy, &c., may be put in sand; they will root readily, and their potting and attention necessary will give nice employment to the ladies.

MANURE and mulch asparagus or rhubarb beds, if not before attended to. Save your coal and wood ashes for putting around your fruit trees. These, mixed with lime, will be the best fertilizers. Begin to collect stable manure to keep dry for the making of a hot-bed next month.

TREES, BULBS, ROOTS, &c., stored in cellar will need looking after; if growing too much, shake them out of whatever they are covered with and leave exposed to air in cellar for a few days; this

will check them. Fresh air will prevent growth of mildew.

ROOT GRAFTS of apple, pear and plum may now be made, tied with waxed thread, cloth or paper, and stored in boxes in layers between sawdust; they will keep all right and will be found calloused and ready for planting when that time arrives.

CUTTINGS of currants, gooseberries, quince, willow, poplar, &c., should be made in lengths from 8 to 10 inches long, tied in bundles of 100 each, and packed away in sand or sawdust, or buried in ground; they will callous and be ready for planting.

Decide on making some improvements about home by the planting of a hedge for division of lawn from vegetable garden; make some walks; plant some evergreens and ornamental trees; plant a line of trees about orchard or stock-yard and for a wind-break. In fig. 2 we try to show appearance



Fig. 2—Homestead with Shelter.

of homestead with shelter. The increase in value to the farm by having orchard, small fruits, grape vines, hedges, &c., would be near one-half the ordinary value over the appearance of the place in fig. 3.



Fig. 3—Homestead without Shelter.

Notwithstanding all that we have from time to time printed on the subject of pruning out-door grape vines, we are constantly receiving questions as to the best time it ought to be attended to. We know that different authorities select different periods; but our own experience is that it can be done after the new wood is matured and the leaves fallen, up to the middle of February, as may be most convenient, with equal success. After being pruned the vines should be cut loose from the trellis and let sprawl upon the ground, and be allowed to remain there until after the buds have started. This insures low branching, which some people don't know how to produce.—*Germantown Telegraph.*

Many of the finest evening primroses are natives of California, Utah, Missouri and Texas, hence are not reliably hardy. It is advisable to winter the more tender sorts, biennials or perennials; in frames, and when practicable sow seeds and raise seedlings annually. It is said they all bloom the first season from early seedlings. Some of the true perennials, and particularly the prostrate growing ones, are shy seeding in open gardens, but the tall growers seed freely.

Correspondence—Continued.

English Agricultural Notes.

BY OUR OWN CORRESPONDENT.

SIR,—Unfortunately we cannot echo the first sentence of your December number, for the past season has been little short of disastrous to a large section of British farmers, preceded as it was by three adverse years; but British agriculturists are very dogged, and like our military, scarcely know when they are beaten. The wheat crop of last harvest was very deficient in yield and two-thirds of it was badly secured, while a great deal of wheat is quite unfit for human food, and this, in addition to a low price, gives no profitable return to the farmer upon the staple crop; the simple fact is that all other countries can produce wheat at a less cost than England, land being cheaper, labor far less, rates and taxes insignificant when compared with our island.

Barley in some counties, especially in the eastern district, is a fairly remunerative crop this season, not because the yield is large, but because the price is high, for exceptional reasons: the climate in the east being drier, this grain was gathered in a condition far better than in the midland and northern counties, consequently the buyers concentrate their attention upon the eastern counties' samples; yet another reason is that the French qualities are much below an average, and are not suitable for English maltsters, therefore they do not come to hand in anything like the force we usually have them.

All kinds of store animals are very dear, and the last official returns give a large falling off in numbers both of sheep and bullocks as compared with last year. This is ample proof that our flocks and herds are gradually diminishing in numbers; there is nothing like the quantity of mutton and beef being made this year, partly on account of the high price of store stock and partly in consequence of the very high price of straw (70s. per ton), which farmers prefer to sell rather than stamp under foot as litter for beasts and sheep.

The price of fat meat keeps up, notwithstanding the large importations from across the Atlantic; in fact we scarcely think that the price has been at all reduced from this cause, but had it not been for heavy supplies from abroad the price of meat here would have been much higher. It is commonly remarked that grazing must pay because meat is so dear—a very fallacious conclusion to arrive at and one easily dispelled when we remember that as a rule store beasts cost us, dead weight, 14 pence per lb., and the butchers do not give us more than 9 pence per lb. Any one at all acquainted with the feeding of animals must see at a glance that under such conditions, coupled as they are with the high price of feeding stuffs, it is impossible to make grazing a profitable transaction.

There are hundreds of farms here which are without tenants, while landlords offer great inducements to let.

Our great Xmas Cattle Show in London has just come off. We have attended it many years, and we are bound to say neither in numbers nor quality did the beasts or sheep come up to our usual standard; a great many who were ambitious to have their names figure in the prize list have ceased to exhibit, as they found that making very prime meat was not profitable.

The exhibition of implements was as large as ever, every foot of space being occupied, while every farm machine was shown in many forms of construction, from the large 14-horse power plowing engines of Messrs. Fowler & Co., to the miniature hand-dibble by Sigma.

There were two novelties exhibited to the public for the first time—one being what is termed a broadside steam digger of 8-horse power, which was shown only in model, but attracted a good deal of attention from engineers and mechanics; this machine is the invention of Mr. Darby, and certainly possesses considerable merit, but whether the end proposed to be attained is out of proportion to the cost and power exerted remains to be seen. The other novelty was a truly labor-saving machine, and one that has been much needed for some time; it is called the "Farm-Yard Manure Spreader," invented and recently greatly improved by Capt. Delf, of Great Bentley, Essex. The machines are made by Messrs. Davey, Paxman & Co., Colchester, who have a world-wide reputation for their patent vertical engines and boilers, which took honors at the Centennial Exhibition, Philadelphia, and whose character as first-class engineers

will ensure perfect workmanship in all the machines sent out. The manure spreader is of very simple construction, strong and perfect in action; it can be attached to any sized cart or wagon, and spreads the manure, whether long or short, at the rate of 70 to 80 carts per day. A brief description may enable readers of this article to understand its form and method of working: The machine consists of a frame 6 feet 3 inches wide, supported on two side wheels 2 feet 6 inches high, and having a castor-wheel 14 inches high in the centre. The frame contains a traveling web, which is made to rotate by one of the side wheels, while the opposite wheel drives a vertical agitator at a rapid rate. The mode of use is thus: The loaded cart is taken into the field, where the machine is instantaneously attached to the back of the cart. The man, who usually pulls the dung out from the cart into heaps on the land, gets on to the machine and pulls the manure as fast as he can on to the traveling web, which turns it to the rear of the machine, where it comes in contact with the agitator, which in a very perfect manner separates the dung and scatters it evenly all over the land—thus doing away with all manual labor in spreading and knocking. At the same time the plows can follow immediately, thus avoiding all waste by evaporation and drying.

This invention is spoken very favorably of by the daily press of this country, as well as by the scientific and agricultural journals. It is regarded as the most labor-saving machine that has been introduced to the notice of farmers for a very long time.

[We hope our correspondent will explain how 14 pence per lb. is paid for store cattle, and only 9 pence per lb. for the fat cattle. The proportionate prices are beyond the comprehension of our farmers. When we were in England 35 years ago, one of the best farmers then informed us that he only obtained the same price for a lot of fat cattle that he paid for them before fattening; that he was satisfied if he could clear the manure for his trouble. We think the increase in weight would hardly be equal to the discrepancy in price paid or received. This is a nut for our farmers to crack.]

SIR,—Could you let us know through the next ADVOCATE how to feed buckwheat flower to bees, if needed. B. D., Bervie P. O.

[We have placed a little in the bottom of hives and let them help themselves.]

Breeding Horses for the English Markets.

SIR,—As the season soon will be on for the use of entire horses, and as I am interested in the exportation of horses to England, I thought I would just give the breeders of horses in Canada, through your widely circulated paper, a word of advice on the class of stallions they should use, and the class of horses necessary to realize a good price to the breeder and a good profit to the dealer.

Now, in the first place, our horses are making a name in England, and we have a good, steady market, which will take from 25,000 to 40,000 every year, and go on increasing. It does not pay an English breeder to raise a horse to four years old for less than £100; it pays him better to raise beef and mutton. It will pay a Canadian farmer well to raise the right class of horses for this special market alone. Now, what is the right class? A horse from 15½ to 16½ hands, bays and browns are preferred, is worth 20 per cent. more than any other color—unless as a hunter, and it will be some time before we can raise many of them. He must have good length of neck, and lengthy, stylish-looking horses, with plenty of bone below the knee and any amount of high knee-action, it is hard to give an English buyer too much of.

How are our farmers to get plenty of this class of horses? Not by continuing to use the general purpose horse, or, as an English buyer called them, "purposeless horses." Nor by using the Clyde or heavy draught horse on fine-bred mares; the less of the draught you have in your mares when breeding for the English market the better, and if you have two or three crosses of heavy blood, keep on with the heavy horse—full blood every time.

The horse I and all other English buyers want the farmers to use is the Cleveland Bay or the strong thoroughbred—the first in preference, for the following reasons: For color they breed uniformly in the bay or brown shades from mares of any color; next, they will get them of more strength of bone and larger size, more of the

matched carriage horse; thirdly, they will have more knee-action, which is the most desirable point to have. The thoroughbreds and roadsters breed any color, are rather under size and light of bone. I should advise the breeder to use a good, strong roadster, of a good bay, brown or black color—a horse upwards of 16 hands high in preference to a light, small-boned thoroughbred, for the roadster may get a horse bigger and will surely get more knee-action. But if he has any racking or pacing in his trotting action, do not use him on any account, for there is no greater detriment to a horse in the English market than racking and pacing; they must be square-gaited.

Now, farmers may say that there are other markets than the English. We will take the home market: There have been two teams sold in Toronto by one man this last year for \$1,000, and such teams can be sold any day at from \$500 to \$1,000; and in New York a good carriage team is always in demand at low prices. We will take the average of Mr. Grand's sale last spring—on 400 horses upwards of \$190 each. I believe it is impossible to glut the market with a good, clean, smooth horse, weighing from 1,100 to 1,300 lbs., for there are so many purposes this horse can be put to, uses which were not in existence twelve years ago; one of these is the street-car, which use a horse up on an average every four years. Think of that enormous consumption! Then there is another new use—express wagons in cities; 12 years ago there were only some half dozen in Toronto, and now there are some hundreds, with the number growing all the time. So breeding this class of horses is not going to be like the heavy horse breeding. You can always sell a good one, but what is to become of the common, crooked-legged, under-sized horse, with his big head and light neck? There are hundreds in this section which cannot be sold at any price, for there is no place to put them. The refuse of the coach horses—good-sized bloods or roadsters—the street cars, express and grocery wagons will take at good prices, because they can move their bones at something faster than a walk.

I hear many farmers say they want to breed for their own use. It is a foolish idea, for as soon as they want money they offer for sale at once what they bred for their own use; so they really breed for market. His neighbor, who breeds for the market, that is, selects his size with a view to selling when he has them fit, will have buyers every week at his own place to see if he will sell; the other man will be making inquiries for the horse buyer. I notice that the men who breed for their own use generally select a general purpose horse, and the man who breeds for market uses the imported or the purest bred of the class he wants to breed. And what is the difference in the money point of view? One will get \$100, the other \$200, so if the \$100 horse pays, the one bringing \$200 must pay better. So always breed for market, and never make too violent crosses.

I may say the two teams referred to were got by Canadian bred coach stallions.—I am sorry to say there are too few imported horses in the country. Lan. ag. W. L.

Wayside Jottings.

SIR,—All the way along the line of the Grand Trunk, a week ago I saw plows going in a number of places. Belleville reached, more indications of winter presented themselves, but no snow of any consequence. Montreal reached and not a particle of snow on the streets, merely a slight sprinkling to be seen on the slope of the mountain. To see at all, past the end of December, Montreal without a sleigh on the streets, and the river running perfectly free from ice is something extra extraordinary. What with the absence of snow and the presence of the all pervading hard times, the city is experiencing a dull time, which the merchants say is unprecedented in the annals of its history. Retail stores closing during the holidays at 6 p. m. to save gas, and wholesale men afraid to push agents out into the Provinces to do business. It being the Thursday before Xmas and a big market day, I visited St. Ann's and Bonsecour markets. I noticed that all the pork offered for sale had been scorched, and, on enquiring, learnt that dressed so each hog fetched fifty cents more than if scalded—certainly, they did not look so inviting to my eye. The weighing was all done on old-fashioned balances with iron weights placed in one of the scales. Apples were quoted at from \$3.00 to \$4.50 per bbl. Potatoes, 60 cents per bag; cabbage, good, 60 cents per heaped barrel; turkeys, geese, &c., 10 cents per lb., or by the lump from \$1.00 to \$1.50.

Proceeding eastward I stepped off at St. Johns, the scene of the large fire a year ago last spring. The portion of the town then destroyed is now all built up again with first-class red brick buildings, the Main street presenting many stores fully equal to anything in your own town. Here again the "demon" hard times is severely felt. Many expended large sums in re-building, and now they cannot realize the returns which their energy and perseverance in raising the town so soon again from a heap of smouldering ruins entitled them to.

The town contains 6,000 inhabitants, mostly French, if one may judge from the signs, &c., &c. One of its industries is a pottery, manufacturing what is generally known as "delf." The clay is brought from New Jersey and the flint used from England, from whence also are nearly all the operatives. Formerly it employed 100 hands; now the running force is 30. Owing to its proximity to the American lines, and its several railroads making communication therewith easy, this used to be a great point for American buyers to congregate. Horses, cattle, sheep, hay, potatoes, &c., always met with a ready sale this winter so far. With the exception of a car load or two of sheep and some droves of turkeys and geese, comparatively nothing has been done.

Some fifty miles further down the line I reached the place from whence I write, and here the first snow showed itself, extending though, as I afterwards learned, only to a radius of 6 or 7 miles around the village.

With the exception of some trading done in butter, &c., the farmers here have mainly to depend this season on the sale of bark. About 12,000 cords are annually bought in the village, 8,000 of which is consumed in a tanning establishment in the place. Formerly, the price was \$6.00, and sometimes \$7.00, per cord; now the most it will fetch is \$3.50, and there is a talk of its coming down to \$3.00. One dollar and a quarter is the price paid per cord for stripping when hired to be done, and I am told lots of it is hauled in from a distance of 20 to 25 miles.

Hard wood—beech and maple—sells for \$1.50 per cord.

In view of the above figures, is it surprising that you hear a great many people talking of following Horace Greeley's advice, "Young man go west!" Waterloo, P. Q., Dec. 27, 1877. S. J. P. N.

SIR,—I want some information about Hungarian grass—when is the right time to sow for a crop of hay? I sowed four acres last summer on a summer fallow, and plowed down about three tons to the acre. My neighbors say that buckwheat is better. I want to sow fifteen acres to plow under next summer. Which of the two would you advise me to sow? Any information will be gladly received. G. D.

[Hungarian grass and buckwheat are both plowed under as fertilizers before they form their seed. Any green manuring so used serves the purpose, but there is none equal to clover. It is in every respect the best plant grown for fertilizing the soil from its foliage, and much by its roots.]

A New Method of Keeping Grapes.

Rev. E. P. Roe, author of the really good practical work "Play and Profit in the Garden," has communicated for our publication this method of preserving grapes during the winter.

SIR,—I was once informed of a method of keeping grapes which may not be known to all your readers. For two years I have tried it with excellent results. Nothing can be simpler than this method, and it is so inexpensive as to be within the reach of all. I leave the clusters upon the vines as late in the season as immunity from frost will permit, then I provide myself with large earthen crocks or pots and stiff brown or straw paper. In the middle of the day when the berries are perfectly dry, fill the pots with thin layers of clusters and a thickness of paper between them. Let them stand in some dry, cool place for three days uncovered; then put the cover on the pots and paste thin brown paper over the covers, so as to keep the fruit from the air. Select a dry knoll and bury the pots in the earth below all danger of frost; lay a broad board over the top of the pots and cover with earth, mounding the soil upon them so as to turn the water in every direction. When the ground begins to freeze hard it would be well to cover the mound with leaves or straw, so that the pots could be dug out more easily in severe weather. Those that I buried in 1876

came out looking as fresh and unchanged as at the hour they were picked from the vine, and they were not dug until January 1st. The berries of the clusters that I had buried last fall are now as plump and fine-flavored as ever, but for the reasons that heavy rains fell soon after they were buried last October, the extreme mildness of the season, and the fact that some of the precautions named above were not complied with. The stems of the clusters are not as green and fresh as they were in the case of those buried a year ago.

E. P. R., Cornwall, N. Y.

SIR,—Will you kindly inform me through the next number of your valuable paper if we can raise grapes in Canada, say as far north as the County of Wellington, that will make a true raisin. If so, what process is required? Is there any particular variety needed. A SUBSCRIBER.

[Grapes for preserving as raisins have not been grown in any part of Canada. California is the only place in America, as far as we know, in which raisin-curing is carried on. It is not with wine which it is made in Grimsby and other places in Canada of a very good quality.]

The Best Feed for a Colt.

SIR,—Please let me know what is the best feed for a colt and if ground oats is good or not.

P. F. V.

[Colts when taken from the pasture into the stable or shed should be supplied at least once a day with some hay and some bruised oats mixed with chaff or bran. Barley and oat straw if saved early and frequently varied with an allowance of pea straw, may constitute the bulk of their winter food. Good well saved early hay is still better. A few slices swedes, or mangolds or carrots regularly given with some chaff-cut straw, or hay, keep the bowles open and add to the general health. And they require some more nutritive food. For this end, supply to each foal daily three or four pounds of oats which are best given cracked or bruised with several handfuls of chaff, and divided into a morning and evening feed. An occasional bran mash is also advisable; a pound of bruised oilcake daily given with the oats, tends to keep the skin in a healthy state. This is more necessary if roots are not given. A piece of rock salt in the manger is good for his digestion and health, and a plentiful supply of pure water is as necessary as good food.]

Honey Locust for Fences.

SIR,—Will the future Canadian plant and grow live fences? How to fence our farms will very soon be a "live" question. For hedge fences I know nothing more promising than the Honey Locust. In the county of Welland it is not only promising but is actually performing as a regularly established fence. One farmer who has a locust hedge exposed to the highway has so much faith in it that he has planted some miles of it.

As trees of considerable size are found in various places in Western Ontario, its hardiness seems pretty well established. Even the young plants, of which we have many thousand in this neighborhood, endure the winters easily.

Its growth is very rapid, and it seems to succeed on a variety of soils. The most extensive planter that we have in this vicinity has a pretty stiff clay soil. They grow more rapidly in sandy soil. A sufficient hedge can be established in a few years, if it receives a reasonable amount of care. Its thorns are terrible to look upon. Animals with an average intellect are satisfied with one mild attempt—even boys have a superstitious regard for this particular kind of fence. Its seeds, which are enclosed in very large, flat pods, do not require the packing in damp sand that is necessary with tree seeds generally. They may be kept either in the pods or when threshed more easily than peas, as the seeds are exceedingly hard. The threshing process is an amusing one to those who merely look on.

It is not advisable to plant the seeds where the fence is required. It is practically impossible to put the seeds at the proper distance, and to insure their growth in the case of each seed. If failures occur it will take more time to fill the gaps than to plant the entire row with new plants. Even if it were possible to establish plants regularly in the fence row from the seed, it would be unwise to do so. A better growth with one-tenth of the labor

could be had by selecting a small, rich plot elsewhere. The fence row can be otherwise employed to better advantage. A row or line of potatoes would be very suitable.

Further particulars will be given hereafter.

Drummondville, Ont. E. M.

Fruit Growers' Association of Ontario.

SIR,—The Winter Meeting will be held in the City Hall, City of Hamilton, on Wednesday, February 6th, 1878, at 10 o'clock, A. M.

The Report for 1877 is now being printed, and will be mailed to those who have paid their fee for 1878 as soon as it is ready. The celebrated Burnet Grape, a colored plate of which appeared in the Report for 1876, will be sent in the Spring to all members for 1878. Any who wish to secure two vines of the Burnet Grape can do so by sending names besides their own, and ten dollars.

D. W. BEADLE, Secretary.

St. Catharines, 7th January, 1878.

Dairymen's Association of Western Ontario.

The annual convention of this association will be held at Ingersoll on the 13th, 14th and 15th February, and the Committee hope to make it both beneficial and interesting to dairymen and farmers generally. Addresses will be delivered by several eminent gentlemen from the United States and Canada, and a large attendance is anticipated. Any parties wishing to attend and become members may obtain certificates by applying at once to the secretary, Mr. J. C. Hegler, Ingersoll, on presentation of which to the different stations on the Grand Trunk, Great Western, and Port Dover and Lake Huron railways, they will be entitled, owing to special arrangements made with these companies, to tickets at one fare and a third the double journey. It is desirable that parties wishing to attend should apply to the Secretary at once for certificates, so as to avoid confusion and delay.

J. C. HEGLER, Sec.

Odessa Wheat.

SIR,—Please let me know in your next issue how the Odessa Wheat yielded this year. Is it liable to rust—has the midge been hard on it—is it spring or winter wheat—I bought two bushels at \$3 per bushel—had I better grind or sow it—give me all the information you can about it—and oblige.

P. E. ISLAND.

[Questions regarding wheat, will be answered in the March number of the ADVOCATE.]

SIR,—Would you inform me through the ADVOCATE what is the proper time of the season to cut spruce and hardwood for durability.

J. S. Little Harbor, N. S.

The Use of Trees.

SIR,—There are many ways that they are useful, but I can tell you of some that did much harm to my own knowledge. When we were married I made a change; we at home always had plenty of trees and I feeling the place so naked and bare, put my mind together to see what could grow quickest, and minded of the long, tall English poplar's filled with bird's nests; they were nice and grand; so getting some slips near the roots, planted them. There was a large garden and well where the old house had stood. The well never went dry in the driest times. We filled our tubs in the morning, let them stand in the sun all day, ready to water the vegetables at evening. Our's was the best well all around there; plenty of water, while others had to draw miles to water their cattle. We also had a never-failing well in the yard for the common use. It was splendid water; a spring down through the gravel into the quicksand. But I just want to prove what trees will do. I planted the willows near the first well. They grew I should think six feet the first year. The roots went down to the water, through the stones, and as they are hard to kill, the well is long since dry. Now this is two year's back. Although no trees are near the other, it is dried also. I did all through want of knowledge upon roots of trees, and I know that balm of Gilead has the same nature.

When you write about hens laying eggs in winter, remember that the water should be given after feed in the morning, and always milk-warm, speak from experience, as I have made a good speck" in that line, and just feed as you say.

If you would like I could let you know just what we sold from one cow last year; what feed she got, and also how much we sold from the same, with two heifers of our own raising, up to the present time, as they still give a large milk-pailful yet once a day. I could give you a correct list if you thought to print it.

W. S.,

Riviere Raisin post office, Lancaster, Ont.

Preservation of Dried Fruit.

SIR,—We want light on the following subject.—Can you, or some of your numerous readers that have experience, advise us in what way to construct a box or two for the purpose of preserving from worms and moths apples and other fruit after drying it. We have more than one idea of our own on the subject of what would be proof against the moth, but have not had practical experience in the construction of so desirable a conservator. We fancy a box made of light boards, but do not think that pine would be the most desirable, and basswood has a strong odor or offensive smell—both the above might impart their flavor to the fruit that it would come in contact with. We are not sure that one or more thickness of paper pasted on the inside of the box would preserve the fruit from pollution by the wood intended to protect the fruit from moths. We think the box might be covered all over with tea chest lead, and that again inclosed with other boards to preserve the lead from damage. We want something that is reliable, otherwise it would be folly. Again, we have thought that paste to be used in the construction might repel the moth, if made strong by alum, with plenty of cayenne pepper stirred into it. Now, sir, the above are some of our ideas, can you not improve or advise some better method, and very much oblige a subscriber, and perhaps many more than ourselves that are readers of the FARMER'S ADVOCATE. E. E. L.

[Will any of our readers who have experience in the preserving of fruit, reply to the enquiry of E. E. L. in our next issue?]

SIR,—In your last number I see the Puslinch club wants information about the Manitoba wheat. Your own account of it is about the same as I have to give myself. I sowed two acres of it with the drill on good land, my yield 40 bushels on the two acres. The crop was heavy on the ground, and I think that all the different kinds of wheat that ever grew in the States and Canada was in that two acres. I do not think that any more of it will be seen in the township of Wawanosh. Owing to the hue and cry that was raised against the red chaff wheat by millers and newspapers last year, I sowed most of my spring grain life wheat, and lost about \$100 by not sowing red chaff. I only sowed two acres of red chaff, the yield being as follows: red chaff, 35 bushels to the acre, Fife 20, Manitoba 20. The millers and wheat buyers intend for to do away with the red chaff. They are taking every plan for to put it away, as they are not giving nearly as much for red chaff as other kinds of spring grain. The red fern has been sown here, but does not yield much better than the fife. I bought one bushel of the Egyptian spring wheat, but I have very little confidence in it. We have had nothing for yield to the red chaff, yet I mix with fall before grinding, and have as good flour as any other kinds of wheat.

W. A.

Lucknow, Jan. 22nd, 1878.

SIR,—I would like some information about a farm. There is about thirty acres of a tamarac swamy; the remainder is hardwood and hemlock. Would it pay to drain such land? There is from one to two feet of black muck on the tamarac swamp; what would it be better adapted for if it was cleared? It is very level; there is one hundred and thirty rod of a ditch dug on the line five feet wide and three feet deep, and there is only seven inches of a fall. Well would open ditches be the best or under drains? The other is a ride clay very wet.

T. G. Burris, P. O.

[There is not the least use in attempting the cultivation of swamp land till the stagnant water is drawn off. This can be done by open drains which would be most suitable for your swamp for the present. Timothy seed light top-dressing of clay, sand or gravel would be of great service to swamp land. Timothy grass, tussac grass, and marsh bent or rorion would be a good mixture of grasses for such soil.]

The Family Circle.

"Home, Sweet Home."

A Race for Life.

By the Author of "Danesbury House," "A Life Secret," &c

CHAPTER II.

THE FIRM OF CARINE AND LETELLIER.

The summer evening sun streamed on a pleasant French scene; for never had the Terrasse du Jardin, that favorite promenade of Grenoble, been filled with a gayer crowd.

The terrace was crowded; all the rank and fashion of Grenoble seemed to be there. Groups, elegantly attired, met and passed each other, the men lifting their hats, the women with an elaborate curtsy; or they stood to converse; or they formed into parties, to sit and eat ices.

"But, Annette, where's Mademoiselle your aunt?" was asked from more than one quarter.

"Oh, my aunt has an attack again, and keeps her chamber to-day," was the answer, merrily delivered, as though the speaker thought little of the attack.

Miss Carine, a maiden lady, who ruled her niece with an iron hand, was subject to attacks—not of apoplexy, but of indigestion. She had one about every ten days, when she would be shut up in her chamber for four and twenty hours.

The Pavons walked twice to and fro the length of the terrace, showing themselves and their fine plumage to their townspeople—for that is too generally the end and aim of a Frenchwoman's existence—and critically scanning their plumage in return, lest it might be richer than their own; like so many peacocks—as the whole lot of exhibitors were.

A gentlemanly-looking man passed, raised his hat, and bowed; and the party returned the salutation. Annette Carine played with her bonnet strings, and the rest fell to talking of him who had gone by.

"We hear, Annette, that he finds more favor with your father day by day—that he says the business could not get on without Letellier. Is it so?"

"I don't concern myself with the business," returned Annette, whose color was deepening.

"And report goes that M. Carine will be making him an equal partner."

"May be," carelessly rejoined the young lady.

"He has proved himself a true Letellier," cried an old gentleman who had joined them. "Had uninterrupted prosperity been his, why I don't know how it might have been—perhaps played and frittered his life away; but when adversity came, he turned to with a purpose. Some feared the result; I did not; for I knew young Robert had the right stuff in him and would be worthy of his name. How long is it now, Miss Annette, that he has been with your father?"

"As if I kept count of the time?" was Miss Annette's retort, with a shrug of her shoulders.

"It is getting on for two years—twenty-one months about now," spoke up Pere Pavin; "and M. Carine told me himself this week, that he would not be without him for a great deal. Young Letellier will make his way in Grenoble yet; never doubt it."

Robert Letellier had certainly got on well, and you will think so when you hear that he had been for twelve months M. Carine's partner. It was, however, self-interest which had prompted the Pere Carine to take him in. The former clientele of the house of Letellier did not, as its new head had fondly anticipated, come much to the house of Carine with their orders, and the Pere found that to join the name of Letellier to it would be a means of securing them. So the firm was made Carine and Letellier—Robert receiving but a very small share of the profits, and retaining his active management; it was a fact that the business could scarcely have got along without him.

The party finished their ices, shook out their fine feathers, took another turn or two for the benefit of admiring eyes, and then left the Terrasse du Jardin for the night, escorting Annette to the door of her father's home.

It was twilight then. Annette threw off her bonnet, proceeded to Miss Carine's room, and softly opened the door. "Are you better now, aunt?"

"Not a bit," groaned Miss Carine; "my chest is on the rack, and I think it's going on to the liver. Don't come here, child," she crossly added; "nobody wants you. I have swallowed down five quarts of tisane, and yet it doesn't go away."

Singing sweetly under her breath, Annette went down, entered the court yard, and passed into the garden, where she seated herself under the lime trees, thinking of other things than her aunt's indigestion.

The truth is, that between Robert and Annette there had sprung up an attachment, very natural under the circumstances. She had seen and admired his good qualities; and

Robert had cherished hopes of winning the charming daughter of Pere Carine, who was not his superior in anything except wealth. Before making any declaration to Annette, however, he very properly sought an interview with her father. The old man told him to put such presumptuous folly out of his head, and that she was going to be asked in marriage by the son of the Prefet, who would himself be a Prefet one of these days. Robert knew that Annette cared nothing for the rich Prefet's son; but he was too honorable to interfere with family arrangements after this interview. He continued to devote himself to the duties of his position, and committed to Providence the issue of events.

The months dragged their slow length along, and there was no more joyousness at Pierre Carine's. Annette, who had kept the family alive with her innocent mirth, whose light step and loving laugh had been pleasant things in the household, was now sad and silent. She was no longer allowed to meet Robert Letellier; she was told that they were parted for ever; and she bowed to the decision, knowing there was no appeal from it, for neither son or daughter, in France, can marry without the parental consent. M. Carine had the gout more frequently; Mademoiselle, his sister, complained incessantly of her attacks; altogether, things were by no means comfortable; and, to crown the whole, Annette had displayed the unheard of hardihood of daring to refuse the Prefet's son.

In the midst of these untoward circumstances, winter set in in earnest—snow, hail, sleet frost; never had a longer or a worse winter been known in the department of the Isere; and the kind monks of the Grande Chartreuse (which establishment, you may be aware, is but a day's journey from Grenoble) were out with their dogs incessantly, to find those who might be lost in the snow.

The unusually severe winter brought its consequences. The poor were starving; and crimes, long sunk in abeyance, began to be rife. Houses were broken into, money and provisions stolen—chiefly provisions; the depredators' children were wailing for bread. And if this was the case in the town, far worse off was the country; the long and hard frost precluded agricultural labor, and hunger made the peasants desperate. Travellers were attacked in the lonely roads, and their pockets rifled; sometimes violence was done. It was a winter that will long be remembered throughout the Isere.

CHAPTER III. A MOONLIGHT RIDE.

One morning in February, Pere Carine, when he came into the sitting room to breakfast, advanced to the window, and peered out through its frosted panes. "Any signs of its abating?" asked he.

"I think it is freezing harder than ever," said Annette, who would put on a semblance of cheerfulness before her father. "Pauline says the water in the rain-barrel is a mass of ice to the bottom."

"A pretty cold journey I shall have," grumbled Pere Carine. "Are you going out, papa?"

"To-morrow, child; as far as Chambéry."

"Chambéry! why, what can ever take you to Chambéry?" screamed out Miss Carine, from her place at the breakfast table.

"Business takes me to Chambéry. I have been told of a fine lot of skins lying there to be disposed of—real kids that once ran wild on the Alps; and I mean to see them for myself before the news gets wind, and buy them up if they are worth it."

"Why, you'll be a day and a night going; the diligence will get along the roads at the rate of two miles an hour; you'll be frozen to the seat before you arrive," snapped Miss Carine.

"Very likely I should; but the diligence is not going to get me. I shall take the chaise and Belotte. What is the matter, Annette?"

Annette Carine had turned pale as she listened; absorbed though she might be in her own troubles, she loved her father with an intense love. Have you forgotten the unsafe state of the country?" she breathed.

"I don't put much faith in the reports," he slightly returned; "I am sure they have been exaggerated. I shall carry only enough silver for the journey, and if they clear me out of that they must. But I shall take my pistols, and one glimpse of their bright barrels will put a dozen such fellows to flight. They are not systematic robbers, remember, but starving peasants forced by want to poney essays of crime."

Annette shivered, she scarcely knew why; a presentiment of coming evil seemed to steal over her. "Oh, papa, go by diligence!" she cried, in a wailing tone of entreaty. "Do not risk the lonely chaise; go in company, if you must go."

"What a goose you are, Annette," laughed Pere Carine; "you always were frightened at shadows. I would not go by the crawling diligence to have the pick of all the skins in the market of Annonay I should be frozen to my seat on the road."

Pere Carine started next morning with the daylight, Robert Letellier seeing him off. They were perfectly good friends. Apart from Robert's presumptuous flight in the summer, touching Annette, Pere Carine was very fond of his junior partner. He would arrive at Chambéry some time that evening, early or late, according to the roads; it is the frontier town of Savoy; and the deliberate old diligences would make a day's journey of it in good weather. His intention was to examine the skins that night, if he reached there in time; if not, the first thing the following morning, and then immediately leave for home again.

Wearily enough wore the day for Annette. Miss Carine was unusually well, and consequently unusually cross and worrying. When they arose the next day, Grenoble was in a commotion at some news which had been brought into the town, and it struck a chill to the heart of Annette. A solitary traveller, coming from Sassenage (the little hamlet where the famous cheese is made, situate about a league from Grenoble) had been attacked, and—killed; he was found in the road dead, his pockets rifled. Annette closed her eyes; a mist was gathering before them. "Only in coming from Sassenage," she shuddered; and he has to come from Chambéry!"

"Well, it's a good thing he took his pistols," said Miss Carine.

But he had not taken his pistols. He had done what many a wiser man had done before him, and will do again—forgotten them. As evening drew on, Annette, in her restless wanderings—for she was too uneasy to be still, came upon them in their case, in a little room opening on the court-yard. Whether her father trusted to his servant to put them into the chaise, and the servant thought his master had done so, certain it is there lay the case and the pistols.

All the blood in Annette's heart seemed to leave it as she gazed upon them. One moment's self-debate of what could be done, and the next she burst into the counting-house of the manufactory, case in hand, where Robert Letellier sat alone. "You must go to him, Robert," she uttered, after an incoherent explanation; "you must go to his succor."

He took the case from her hand, but he seemed to hesitate.

"Are you afraid?" cried Annette, a touch of scorn in her tone.

He turned his clear, fearless eyes upon her. "You would not think it, Annette, were you less excited. I am in doubt where to look for him. He told me that, in returning from Chambéry, he should probably turn off at the cross road, and call at Vertpre; but he was not sure."

Annette's very breath seemed to stand still. "Vertpre!" she uttered; he never mentioned that.

"No; he said they were sufficiently timorous indoors at his travelling on the traffic road from Chambéry, without being told that he might risk the lonely one from Vertpre. I know not which he may have chosen."

"Go and seek him somewhere," gasped Annette; "God can guide you to the right."

Robert Letellier placed a belt round his waist and put the pistols in it, first seeing that they were loaded and in order. He caused a horse to be got ready with all speed, mounted it, passed out at the town gate which led to the road to Savoy, galloped to where two ways branched off, and there he halted. Annette's fears and agitation had somewhat infected his own mind; Pere Carine might be in danger.

But now, which way to choose? The one would lead him in due course to Chambéry, the other to Vertpre—a farm house some miles away, whose inmates were friends of the Carines. How was he to know which to fix upon? Annette's words came to his mind, "God can guide you to the right." For a moment he bowed his head to the saddlebow, and a fervent prayer went up from his heart to be guided—a prayer not only of hope but of trust, and he never doubted that he was heard. He raised his head, recovered it, and urged his horse on by a word, not touching the bridle to guide it, but suffering it to take its own course, under, he hoped, the guidance of God. The animal flew off in the direction of Vertpre.

And now, where was Pere Carine? He had arrived at Chambéry safe and sound, found the skins were really good, bargained for and secured them, starting for home again betimes in the morning. About midway between Chambéry and Grenoble he came to the road which branched off to Vertpre; having some time before him, he took it, and arrived at the farm. There he spent an hour or two, and started for home in excellent spirits, jogging along in his chaise. I don't quite know how to describe this chaise to you, since we have nothing that answers to its make in England. An armchair stuck upon two high wheels, with a head to it, is as much like it as anything, and that's near enough for description. It was a fine moonlight night; but the clustering trees, in the thick wood to his left, looked dark and weird. Little cared Pere Carine whether they looked dark or light. Having travelled unmolested so far, he was now disposed to regard the tales of thieves and assaulters as being little better than pure fables invented by the timid; and he laughed to think—

What noise was that? It was like nothing earthly—a low groaning sound, half wail, half howl. Pere Carine checked his mare to listen; but the animal raised her ears, and trembled violently.

"It must have been the wind sighing in the forest," cried he "it does make a doleful noise at times. But it's a still night—Belotte, old girl, what ails you?"

He gently shook the reins and urged the mare on. It was a plain he was travelling on, not a road; more like a tract of waste land, wild, bare, and very unfrequented. As his eyes ranged over it—so white with its lying snow in the moonlight—he thought of the vast dreary plains where travellers lost their way in the pathless waste, and never found it again.

"Cheer up, my Belotte; no fear of thieves coming here to disturb us," laughed he; "the villains lie in wait in more travel-beaten roads. This one does not see a passenger for a week together. If Annette knew I was on it, though, and my pistols nowhere, her little heart would flutter. Steady, Belotte, you are roughshod, you know; no excuse for slipping; there's a good feed of corn at the journey's end, and—"

There it came again; the same sound, only nearer. A prolonged, discordant bay, or groan; not like the cry of a human being, not like the growl of an animal, and yet not very unlike either. Belotte shook till her coat became wet, and the awful sound died away in the stillness of the night.

"That's not the wind," ejaculated Pere Carine; "it's not like any beast that I ever heard; and it can't be highwaymen; they don't announce their approach. So, ho! Belotte; stop, my girl; we'll have a look out backwards."

He pulled up. He did not care to descend, but he rose in the chaise, unfastened the joints of the head, pushed it back, and stood gazing over the extended plain. At first he could discern nothing—noting but the wide tract of land, so cold, and still, and dreary. But again rose that terrific howl, nearer and clearer; it served to guide his eyes to a certain spot, where he discerned something moving, trotting steadily onwards in pursuit of prey—in pursuit of him.

Pere Carine gave a shout of dismay, and the perspiration broke out from the pores of his skin, as it had from poor Belotte's. He had heard tales of the wolves—of the wolves appearing in the department of the Isere during a hard and prolonged winter, and devouring travellers; but the case had not come under his own knowledge. The wolves were after him, then.

He sank down on his seat; he whipped up his old mare to her utmost speed, little as the terrified animal needed it. "A race for life, Belotte," he murmured, "a race for life."

A race in which he was pretty sure to lose, and he knew it; for the French chaises are never built to be light and swift; they cannot skim along and outstrip an enemy—with every moment the wolves would gain upon him. The sky was of a dark intense blue, looking black to the eye by night, and a few stars peeped out. Grenoble was two leagues off yet—two leagues; and the dreaded animals close upon him.

Once more he rose in the chaise, and strained his eyes backwards. No need to strain them now; the danger was all too near. He could but see one animal—a large, hideous she-wolf, whose fierce teeth were gleaming in the moonlight. He supposed there might be but one; he knew, at least he had heard, that they had been seen out singly in other hard winters, hunting for human spoil—the one would be enough for him.

"On, on, Belotte! on for life!"

The forgetful mistake concerning the pistols had been almost laughed at before; but now!—Pere Carine could only whip up his mare, and in his heart seek the protection of One who could look down from that dark blue sky and see his peril.

On it came, its panting breath distinct upon his ear. Would it attack him or Beiotte first? He would have given half his substance to be able to pull up the head of the chaise, that at least that little barrier might be between him and those savage teeth; but he did not dare to hinder one precious moment.

Oh, what a yell came upon him, close to his very ear—the awful yell of a famished animal scenting its prey. Belotte's coat ran down with wet; Belotte's master could have wrung all the clothes he wore. "Oh, horror! am I to die thus?"

Something was advancing towards him in front, coming quickly from the distance; even in his terror, which was strong and painful as a death agony, he perceived it. Was it another wolf?

With his eyes strained on that in front, and his ears strained on that behind, he sat on. But for how long? Why, his life was not worth two minutes' purchase. The animal sprang forward, and placed its fore paws on the back of the chaise, its eyes like evil stars, its teeth like fangs of death, close to the head of the victim. In that same dread moment Pere Carine became conscious that the advancing figure was a man on horseback. He covered down to the bottom of the chaise from that awful death's-head behind him, and an imploring shriek, that seemed to make the forest echo, went forth for help.

"The wolves are upon me. Save me from them." The creature was completely up now, hanging over the chaise, its gaunt form conspicuous in the moonlight. There was a shot, and an animal's death yell, as it tumbled to the ground over one of the wheels. Belotte stopped, and Pere Carine was lying in a fainting fit.

"Was it you who saved me?" he murmured, when he revived, and looked up at Robert Letellier.

"Yes, I am thankful to say it. Be still and rest yourself. I'll just tie my horse to the tail of the chaise, and drive you home. Better the horse there than that other ugly customer."

"And what brought you here?"

"A fear lest you might be in danger—not, however, this sort of danger. God guided me."

When they arrived at home, Miss Carine and Annette met them. Pere Carine took Robert's arm, and led him into the saloon. "Thank him, both of you," he said; "he has saved my life. But for him I should now have been lost."

Annette clasped her hands, and smiled through her glistening tears. Mademoiselle, her aunt, was somewhat incredulous. "Did one of the thieves attack you?" cried she, turning up her nose. "Such attacks rarely have danger in them."

"It was a sort of a thief that I hope will never attack you," answered Pere Carine. "Robert, you are my equal partner from this night, and the half of my fortune shall be made over to you. I would have given the whole of it in that hour of peril to any one who would save me. And if you like to take Annette with it, you may."

That was how Robert Letellier won his bride at last. And half Grenoble was invited to the wedding.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—The letter budget for this month is larger than ever, the several contributions which we receive evince not only an earnestness on your part to maintain the interest of your own department, but also to strive for continual improvement the culture of your minds. Intellectual work is not like manual labor—use does not wear out the forces you work with. You, no doubt, find the more you write the easier it becomes, and the more you discipline your minds the more easily will the words follow your pen. I know many of you are tired from over work and do not have time for reading or writing, and are apt to neglect the culture of the young mind. But do not, my young friends. "Remember, as the twig is bent the tree is inclined;" so be sure and bend the "twig" that you may become intellectual and refined. Now about our letters. We received one in which the writer says:—"I hope I am not sending too many puzzles." We had to read it over twice before we could believe our eyes. Too many puzzles! Why, you might just as well say a boy can have too many jack stones or marbles, or a girl have too many dresses for her dolls. Don't be afraid of sending too many; the more to select from the better; and you know your old uncle dearly loves to know that you all take an interest and endeavor to assist him, and will be pleased to hear what you are doing and how you do it. UNCLE TOM.

Georgia negro preacher to his flock—"We have a collection to make this morning, and, for the glory of heaven, whichever of you stole Mr. Smith's sheep, don't put anything on the plate."

PUZZLES.

1—CRYPTOGRAPH.

Ohw lyon kras orf umhelbst thlaew,
Neuhng rfo mpoteecene nda ehlaht
Dan ielruse nhew shi orwk si noed;
Ot aerd ish okob
Yb hienmye kono,
Ro rostll ta etsitgn fo eth uns;
Hwo otllis sa vreye nma ouhslid iolt
Orf afir eawdrd tecre nda refe.
Htsi si het amn—
Eht esbt fo enm—
Ihst si het nma ew anem ot eb.

2—HIDDEN SAYINGS.

My daughter Marjory, with ease,
Has placed these proverbs you to tease;
They all are old and quite have shown
But don't believe the words you see,
For all these proverbs hidden be.
The letters spell no less, no more,
So try and sift the truths in store.
Transpose, repeat—do what you will—
I want to test my young folks' skill.

1. The first, you've heard it o'er and o'er,
Teaches us to preserve our store.
"O wanto E."
2. The next will bid us to beware
Of greed, or else we much may spare.
"Covet Sal."
3. The next we prove in garden bowers
If we are rash among the flowers.
"How is nature?"
4. My fourth perhaps you'll think absurd,
And yet the saying's often heard.
"Malt phisic, when."
5. Can you find this? I think it true;
So ask your friends to seek with you.
"Ask them W."
6. The next will bid you courage find,
So boys impress it on your mind.
"Find worthy veal."

Practice all these and you will be
The kind, good folk all love to see.
C. L. MATEAUX.



WHICH IS WHICH.

3—REVERSIONS.

1. To move, as water, gently and mild,
Reversed, an animal ravenous and wild.
2. Is measured by years, months and days,
Reversed, to send forth as the sun its rays.
3. Are heard in the battle's storm;
Reversed, means very close and warm.

4—ANAGRAM.

Twah nae veol eb nekiled ot?
Ot het ttilggrein, geeltfni edw,
Ot venae's high't tub gindfa obw,
Ot teh tihwe utb limmetg wons,
Ot teefingl doussn nad wiesvyl ira,
Ot lal htta's wstee, dan lascf, dna riaf.
MAGGIE PORTEOUS.

5—CHARADES.

My third on my first is often seen,
It's of many shapes and sizes,
My first plus my second on third has been,
And its by my whole he rises.

My first is liked by most folks very hot,
My next, though personal, be not offended,
My last is harmless, if you touch it not,
My whole is oft for cleanliness intended,
And is a word of one syllable.

6—HIDDEN COUNTRIES.

1. I take in the Young Gentlemen's Magazine,
which I like very much.
2. Talking in whispers I always condemn.
3. In his recital you may easily detect many discrepancies.
4. I am sorry we shall have to quit our old home.
5. Our bull ran at all persons who presumed to tease it.
6. The one which I name here is a very easy puzzle to solve.
7. My father was blind, I am deaf, and my son is dumb.

7—ENIGMAS.

My first is used at play;
My second is an adjective;
My third is a river;
My whole is the name of an author.

BERTIE.

I am composed of eight letters:
My 1, 6, 3, 7, is salt water;
My 6, 8, 7, 8, a bird's nest;
My 2, 3, 4, 5, a kind of carriage.
My whole is the name of an author.

LIBBIE ARCHER.

8—WORD SQUARES.

1. An article of jewelry. A heathenish image.
A part of the face. A valley.
2. An article used for domestic purposes. A past king of Greece. An exclamation. Show.
3. A sort of cord. A preposition. The founder of a colony in North America. A lake in Ireland.
4. A precious stone. A stick. A range of mountains. Smaller.

Answers to January Puzzles.

TO OUR NEPHEWS AND NIECES,—

We are sorry to observe from our letters that some of you expected a prize for merely answering the puzzles, whereas the rubus stated that by fulfilling the hint suggested in it there would be a chromo sent as a remuneration. Those who succeeded in sending the answer, accompanied with a new subscriber, have had their chromos sent, and those who have not done so have the privilege of doing so any time during the year.

- 164—(1) Sear, issue, Maniton, ebb, olive, notion. (2) Bunden, rub, end.
165—The Fenian invasion in Canada.

166—Thy greeting smile was pledge and prelude
Of generous deeds and kindly words;
In thy large heart were fair guest chambers
Open to sunrise and the birds.

167—Loo, nag, fine, libel, overthrow "Longfellow."

168—Ada, Bob, Bib, Aha.

169—All, wall, gall, mall, ball, pall, tall, hall, call.

170—Be not like dumb driven cattle,
Be a hero in the strife.

171—
O
C R Y
O R G A N
Y A M
N

- 172—(1) Fox-glove; (2) Haw-weed; (3) Tube-rose; (4) Candy-tuft; (5) Snap-dragon; (6) Wall-flower; (7) Sweet-pea; (8) Eal-sum; (9) Snow-drop; (10) Mari-gold (Marygold).

173—"Send one new paid subscriber."

173—(1) Shame, sham, ham, ha, a.

(2) White, whit, hit, it, i.

(3) Corat, Cora, ora, or, r.

(4) Honey, hone, one, on, o.

174—Virtue and intelligence generally secure success.

Names of Those Who Sent Correct Answers to January Puzzles.

Isaac Stinson, T. Crocker, jr., Royal Grafton, O. Blanchard, H. G. Angevine, Wm. Fenrose, Andrew Sutherland, Edith H. Cullen, John Ingle Taylor, E. L. Richardson, Robert Dobson, Amelia Straubel, Maggie A. Blair, Libbie Archer, John Oldfield, Mrs. Mary Ann Hepworth, H. V. W. Leach, James Langtry, Sarah Waram, George Whitney, Freddie Bell, W. J. Hamilton, Wm. Broughton, Rebecca Dixon, Elvie E. Tavel, J. Alexander, Wm. C. Lea, John S. Bingham, R. Adanson, G. W. Kerr, G. W. Wilson, Wm. B. Taylor, Sibly McKay, P. G. Keyes, Amos Hawkins, Lilly Wood, Alex. Kirk, Thomas Locker, Mrs. Howell, H. W. Husband, Oscar Daly, H. J. Fry, Wilhelmina Mercer, Mary Kison, James Cullen, Frank James, Lucy Mills, Jennie McPherson, Edith Lawson, Abraham North, John West, Ida J. Locke, Evaline Purdy, Nellie Carson, Fred McCrae, Timothy Scott, Orange Clinton, Jane Jarvis, Edwin Hammond, Mary McInnis, Joshua Williams, Jacob Francis, Maud Johnson, Anna McDermit, Harvey Bonson, Geo. Scott, Edwin Morrison, Hector Morrison, G.L. Chitty.

A man went home and found his house locked up. Getting in at the window with considerable difficulty, he found on the table a note from his wife—"I have gone out. You will find the key on one side of the door-step."

Professor—"In one evening I counted twenty-seven meteors sitting on my piazza." Class expresses great astonishment at the sociable character of the Heavenly bodies.

A politician who was kicked down a flight of stairs in a New York office the other day, said he felt as though his seat had been contested.

It seems to be the ambition of all young wives to look well when any one calls. The other day a south-side bride heard a ring at the front door. The maid was out, and she rushed up-stairs to "fix up" a little before admitting the caller. There was a moment of lightning work before the dressing-case. Quicker than it takes to tell it a ribbon was fastened at her throat, a flower stabbed into her hair, a flash of powder on her face, and she was at the door, all smiles and blushes. The gentleman said he had walked from Memphis, and couldn't remember that he had tasted food since he left Cincinnati.

Nellie has a four-year-old sister Mary, who complained to her mama that her "button shoes" were "hurting." Why, Mattie, you've put them on the wrong feet." Puzzled and ready to cry, she made answer: "What'll I do, mama? That's all the feet I've got?"

She Left Her Breath Behind Her.

A hater of tobacco asked an old negro woman, the fumes of whose pipe was annoying to him, if she thought she was a Christian.

"Yes, brudder, I 'spects I is."

"Do you believe in the Bible?"

"Yes, brudder."

"Do you know there is a passage in the Scriptures which says that nothing unclean shall inherit the kingdom of Heaven?"

"Yes, I've heard of it."

"Well, Chloe, you smoke, and you cannot enter the kingdom of Heaven, because there is nothing so unclean as the breath of a smoker. What do you say to that?"

"Why, I 'spects to leave my breff behind when I go dar!"

Didn't Make a Cent.

An unknown man entered a hosiery store in Detroit, and asked to be shown "a few socks." When he learned the price per pair of wollen ones, he put them aside, and said:—

"I guess I'll keep on wearing cotton ones. They say if you wear 'em right along through the winter your feet don't get cold."

Some cotton socks were handed out, and he persuaded the dealer to drop from twenty to fifteen cents per pair. Then he said:—

"I can buy the same kind as these in Toledo for ten cents."

"It doesn't seem possible," replied the dealer. "Will you swear to it?"

"I will. I'll make affidavit to the fact."

The dealer told him to go around to a justice, make the affidavit, and he should then have four pairs at ten cents per pair. The stranger was as good as his word, and he chuckled and cackled over his shrewdness until the document was made out and he had been sworn. Then the justice remarked:—

"A dollar is the fee!"

Something came over the stranger about that date. His knees wobbled a little, and he swallowed as if something choked him. He handed over the dollar, walked out, and the four pairs of socks are still left on the shelf. If the shrewd chap made any remarks to himself, he probably whispered:—

"Virtue is its own reward, and you are one hundred and fifty pounds of fool!"

IMPORTANT QUERY.—Mrs. Partington is anxious to know, if the compass has a needle and thirty-two points, how long it will take a woman, with such a needle, to make a shirt.

A Sister's Plea.

Far from the shelter of the town,
A little lass and lad
Towards the shore came stealing down.
Why should a look so sad
Touch his sweet face with pensive grace,
And hers, which should be glad?

Among the rocks they rest anon
In silence; then the maid,
"Now, you'll not be a sailor, John,
And leave me?" softly said.
The wistful gaze she did upraise
More strong than language prayed.

"I would have been a sailor, Nell,
Had it not been for you.
Our father toiled both long and well
Upon the boundless blue;
And though he sleeps five fathoms deep,
I'd be a sailor too.

But mother told me, as she lay
Upon her dying bed,
That I must keep by you alway,
And work for you, she said,
When she was gone, and we alone,
And win your honest bread.

"And so, my dear, I shall obey
Our mother's last command,
For I shall keep by you alway,
Yet have a helping hand
Ready to lend that hapless friend
Whose bark may get astrand."

pesious lam." The smile which illuminated the passengers' faces upon this outburst of childish expectation drove away the frown, and brought them out of themselves for the rest of the journey.—
Danbury News.

Conduct in Case of Fire.

The following directions for conduct in case of fire are issued by the British Royal Society for the Protection of life from fire.

"Every householder should make each person in his house acquainted with the best means of escape, whether the fire breaks out at the top or at the bottom.

"Inmates at the first alarm should endeavor calmly to reflect what means of escape there are in the house. If in bed at the time, wrap themselves in a blanket or bedside carpet; open neither windows nor doors more than necessary; shut every door after them. [This is most important to observe.]

"In the midst of smoke it is comparatively clear toward the ground; consequently progress through smoke can be made on the hands and knees. A silk handkerchief, worsted stocking, or other flannel substance, wetted and drawn over the face, permits free breathing and excludes to a great extent the smoke from the lungs. A wet sponge is alike efficacious.

"In the event of being unable to escape either by the street door or the roof, the persons in danger should immediately make their way to the front-room window, taking care to close the door after them, and those who have charge of the household should ascertain that every individual is there assembled.

"Persons thus circumstanced are entreated not to precipitate themselves from the window while there remains the least possibility of assistance, and even in the last extremity a plain rope is invaluable, or recourse may be had to joining sheets or blankets together, fastening one end to the bed-post or other furniture. This will enable one person to lower all the others separately, and the last may let himself down with comparatively little risk. Select a window over the doorway rather than over the area.

"Do not give vent to the fire by breaking into the house unnecessarily from without, or if an inmate by opening the

door or windows. Make a point of shutting every door after you as you go through the house. For this purpose doors enclosing the staircase are very useful.

"Upon discovering yourself on fire, reflect that your greatest danger arises from draft to flames and from their rising upward. Throw yourself on the ground and roll over on the flames—if possible on the rug or loose drugget, which drag under you. The table cover, a man's coat, anything of the kind, at hand will serve your purpose. Scream for assistance, ring the bell, but do not run out of the room or remain in an upright position.

"Persons especially exposed to the risk of their dresses taking fire should adopt the precaution of having all linen and cotton washed in a weak solution of chloride of zinc, alum or tungstate of soda."

"Every man," said Mark Lemon one evening at his club, "has his peculiarities; though I think I am as free from them as most men. At any rate I don't know what they are." Nobody contradicted the editor of Punch; but after a while Albert Smith asked, "Which hand do you shave with, Uncle?" "With my right hand," replied Lemon. "Ah!" returned the other, "that's your peculiarity. Most people shave with a razor."

It wouldn't be a bad idea to pin the little boy's comparison of "cold" to your memory nowadays: "Positive, cold; comparative, cough; superlative, coffin."



A CANADIAN WINTER SCENE.

Home Song.

Stay, stay at home, my heart, and rest;
Home-keeping hearts are happiest,
For those that wander they know not where
Are full of trouble and full of care;
To stay at home is best.

Weary and homesick and distressed,
They wander east, they wander west,
And are baffled and beaten and blown about
By the winds of the wilderness of doubt;
To stay at home is best.

Then stay at home, my heart, and rest;
The bird is safest in its nest;
O'er all that flutter their wings and fly
A hawk is hovering in the sky;
To stay at home is best.

H. W. LONGFELLOW.

It was quite cold in the car. The passengers were shrinking up in to as small a space as possible, and looking straight ahead into nothing with frowning visages. A very little boy was snuggled up in his mother's arms. The train stopped at a station, when he said:—"Am I goin' home, mamma?" "Yes, dear." "Papa's home?" "Yes." "Are you going to see papa?" "Yes, dear." The child lifted up his head, and looking eagerly into his mother's face, enthusiastically exclaimed, "When papa sees me, he'll say, 'Come here you

Winnie May's Department.

MY DEAR NIECES.—It is quite unnecessary to remind you of the responsibility you sustain to our country and the world, that it is in your power to brighten the future of our country. It is women that mould the character of a nation. Pure and noble womanhood will make pure and noble citizenship. And while the accomplishments of education are desirable, and if rightly used adorn the female character, it should never be forgotten that life is practical, and that in being useful woman fills her loftiest mission. There is no happiness in idleness or fashionable frivolity. There are many who wear out their lives worrying over new fashions, and the charms of society upon them. It is a mistake that some girls make to suppose that ignorance of the practical duties recommend them to any one whose good opinion is worth having. It is the daughter or wife who can leave the piano and enter the kitchen when necessary and feel at home there that sensible people admire, and who are equally as able to discuss upon the best authors or of the best method of making bread, pies &c., And now dear nieces we hope the foolish notions of fashion will never find a lodgement in your minds but may each one of you remember how much the future will expect of you, and strive to be truly good and useful.

MINNIE MAY.

RECIPES.

MY DEAR MINNIE MAY.—I was asked by a lady friend of mine the other day how I made my soap, who complimented me upon having it very nice. I have thought since it might be useful for some of your friends to know, therefore send my receipt. My process has at least the merit of simplicity:

In the first place we save none but hardwood ashes, that our lye may be strong and good; otherwise soap-making will very likely prove troublesome, if not an absolute failure. Our soap-grease is generally a variety of odds and ends—scraps from the lard-frying, rinds from ham and shoulders, with an occasional bone thrown in (which will not injure the soap—the marrow makes excellent soap-grease, while a small proportion of bone itself is not deleterious, but helps to give 'body'), along with whatever drippings of lard or tallow we may have not fit for other purposes. The whole will make excellent soap if only kept clean and free from taint and mould. When soap-making day arrives, have your soap-kettle—if you have not a furnace—set upon stones, and build a fire under it. Start your fire with chips or small sticks if you like, but have a large chunk or block for your main fire. It is not necessary to get it wholly under the kettle, but close up at one side. This will give you what is very essential, a *steady heat*, that you may not have to run every five minutes to fish out the blaze from under the kettle, to keep the contents from running over-board. Take a pailful or two of the first lye that has dripped through your leach—which should be strong enough to bear up an egg—and boil, stirring frequently, till the grease, scraps, &c., are mostly eaten up; then fill up with the weaker lye, boil a few moments longer, and your soap is made. In regard to leaching the ashes, the leach should be good, the ashes well packed, and the water added slowly, a pailful at a time, a day or two before the lye is needed."

A teaspoonful of black pepper put in the first water in which gray or buff linens are washed will keep them from spotting. It will also keep the colors of black and colored cambrics or muslins from running, and does not harden the water. A little gum arabic imparts a gloss to the ordinary starch.

Simple garden perfumes are charming in linen when put away in trunks or drawers. To handkerchiefs the perfume is more delicate and much more desirable than the stronger odors so freely used. Always preserve the trimmings of rose-geraniums in envelopes for such purposes, and lay in plenty of sweet clover when it is in blossom.

Lace curtains should never be ironed—not even the embroidered muslin ones. Have two narrow, slender boards, as long or longer than your curtains. Tack strips of cloth or wide tape the entire length of these. Place them out doors upon chairs as you would quilting frames, and carefully pin the wet curtain between—stretching it until it is entirely smooth. Every point, every scallop should be pulled in shape and fastened down. It takes but little time for it to dry, and then its place should be filled with another. Housekeepers often stretch a sheet on the carpet of some unused room, and then pin the curtain to the floor, but the above method is greatly preferable.

TO KEEP SMOKED MEAT.

In the spring, before fly-time, take your meat down, and rub it with a cloth until you make it greasy. This fills up all the cracks. Now take a large-sized pepper box, and pepper your meat well with black pepper. This keeps away all flies and bugs. Then hang in a cool, dry place. This is much better than putting it up in ashes. I have tried the above receipt for the last six or seven years, and never lost a pound of meat.

A POLISHING POWDER.

An intimate mixture of one part of Paris rouge (oxide of iron) with six parts of carbonate of magnesia, is one of the best polishing powders, not only for silver, but for iron, steel, copper or gold. It is best used with a piece of rag dipped in a little water or alcohol, and then rubbed until dry, when the object is cleaned with soft leather.

CLEANING CHROMOS.

When chromos require cleansing remove all dust with a feather brush, and wipe carefully with a soft chamois skin on fine linen cloth, very slightly dampened. If a little spotted or dull, a drop of oil on the chamois will remove it. If the varnish is dull or rubbed off, re-varnish with thin mastic varnish. Like oil paintings, it is not desirable to hang chromos in a dark room; but never expose them to the direct rays of the sun.

MOLASSES COOKIES.

One cup molasses, one-half cup sugar, one-half cup melted butter, one-half cup hot water, one and one-half teaspoonfuls soda, one teaspoonful ginger. Mix soft and bake in a hot oven.

HOW TO POACH EGGS.

When the water has boiled in the frying-pan break the eggs separately in a saucer, remove the pan from the stove, and slip the eggs (one at a time), on the surface of the water; when all are in place the pan again on the fire, and boil about three minutes; take them out with a skimmer, drain well, lay them upon pieces of buttered toast, place on a hot dish, salt to taste; garnish with parsley.

ABOUT FEATHER BEDS.

Should you wish to wash the ticks don't empty the feathers in a barrel and let them fly about the room; but take a sheet, double it and sew up to within a few inches of one side; rip the tick the same length, sew the openings together, then empty the feathers into the sheet. Carefully baste both openings and when the tick is washed and dried, return the feathers in the same manner. Feathers can be nicely cleansed by washing as you would clothes; wring dry and put them in sacks and place in the sun or by the fire where they will dry quick.

TO SETTLE COFFEE.

Don't put white of eggs, or fish skins, or pebbles, or mustard seed, or emancipated proclamations, or tenpenny nails, or burnt leather, or scorched bran, peas or molasses into your coffee pot and then call it coffee. Don't put "extract" in it either. Be satisfied with ground coffee and hot water, saving the other ingredients for different occasions. Boil your coffee until it is done, then pour it out, while boiling, into the pot for the table, and add half a gill of cold water, let it stand three minutes, and it will be clear. These are philosophical and scientific reasons why the cold water makes it settle. Try it and trust in me.

ROSE GERANIUM.

BLACK TEA TO COLOR HAIR.

A lady thus tells how to color hair without risk or injury: Get some black tea and steep it as you would fortable; pour off the tea into a bottle and cork. When combing your hair use it for wetting instead of water. I think you will find before using it two weeks your hair will be darker and more like its original color than it would have been by using any of the other dyes so much in use. I use it myself and know it is good.

PICKLE FOR PORK, HAMS, TONGUE OR BEEF.

Put two gallons of water, two pounds of brown sugar, two pounds of bay-salt, two pounds and a half of common salt, and half a pound of salt-petre, in a deep earthen pan, with a cover to fit close. Before putting in the meat sprinkle it well with coarse sugar and drain. Pack close; so that the pickle may cover. This pickle is not to be boiled. A small ham may lie fourteen days, a large one three weeks; a tongue twelve days, and beef in proportion to its size. They will eat well out of this pickle without drying. When they are to be dried, let each piece be drained over the pan; and when they cease to drop take a clean sponge and dry thoroughly. Six or eight hours will smoke them; a little saw-dust and wet straw burnt will do this. If put into a chimney, sew them in coarse cloth, and hang them a week. This pickle if skimmed before each pickling will last for years.

TO BLEACH WITH CHLORIDE OF LIME.

First, soak the cloth a couple of hours in hot water. Use twelve ounces of chloride of lime to five pounds of cloth. Pour boiling water on the lime to dissolve it well: when cool enough, strain into a tub, and add water sufficient to cover cloth. Now wring cloth from soaking water, put in tub with lime; and let it remain fifteen or twenty minutes, during which time turn and stir frequently; then take out and rinse thoroughly. I have used this recipe many times, and know it to be reliable, not injuring the fabric in the least.

MRS. P. C. R.

MONEY TO LEND on the most liberal terms. Apply personally or by letter to JOHN MARTIN, Barrister, &c., 438 Richmond Street, London.

Commercial.

LONDON, Saturday, January 26, 1878.

There has been no improvement in business the past month. The open, mild weather, together with the almost impassable state of the roads has made trade of all kinds very dull, and has retarded the movement of produce generally.

WHEAT.—During the early part of the month there was a fair export demand, which enabled dealers to turn over their stocks at fair prices. However, the prospect of peace in Europe the past few days has caused English importers to reduce their orders, and also lower the limits given their friends on this side to such an extent as to bring things to a complete standstill. Prices will either have to come down on this side or the ideas of English buyers improve before shipments can be resumed to any extent. Yet we cannot see anything to either warrant very much of a decline on this side or an advance on the other. The English wheat crop is not coming up to the estimated yield. The crop of France and Central Germany proves to be under early estimates. Latest advices from important markets on the Black and Azoff seas are of considerable interest. At most points the very inferior condition of the wheat is alluded to and the opinion is advanced that the surplus of good wheat in Russia has been over-estimated.

PEAS.—Are dull and stocks are beginning to accumulate. The very heavy crop of Western corn, with so much of it in a rather soft state, will have the tendency to keep down the price of peas.

BARLEY.—Is again dull. The English demand having fallen off for a time. As soon as some of the heavy shipments for English account are worked off we look for a better feeling. We look upon this feature of the Barley trade as a very important one to Canada and Canadian farmers will do well to consult the requirements of the English market, which calls for a good heavy barley.

CLOVER SEED.—There has been very little done in this article yet. The ideas of buyers and sellers are apart. The very heavy crop of French seed, which is very fine, has fully supplied the wants of English seed men up to the present time. Some English seed circulars express the opinion that they will not require any seed from Canada this season. We look for low prices in this article.

BUTTER.—The export trade is very dull, with little or nothing doing. The quality of Canadian butter has not been up to the mark this past season. There is great need of improvement in this article, and dealers and manufacturers would do well to try some means of raising the standard of Canadian butter.

CHEESE.—Is much the same as butter, dull and stagnant. The very foolish move on the part of some of our shippers last autumn had a very bad effect, and has caused the trade to drag along ever since. A leading Liverpool dealer predicted months ago that we should not see 70 shillings this year, and we begin to think he is right. Any one who knows anything about the trade knows how much profit there will be in cheese costing 13s. with Liverpool at 64s.

PORK.—Is dull and likely to be so the entire season.

Liverpool Markets.

Liverpool, Jan. 24, p. m.—Flour, 26s. 6d.; Wheat, spring 10s. 4d. to 11s. 2d.; Red Winter, 11s. 2d. to 11s. 9d.; White, 12s. 6d. to 12s. 9d.; Club, 12s. 9d. to 13s. 1d.; Corn, 28s. to 28s. 3d.; Oats, 3s.; Peas, per qr., 36s.; Barley, 3s. 11d.; Pork, per 112 lbs., 56s.; Cheese, 64s.

Toronto Markets.

Toronto, Jan. 24.—Wheat, fall, per bush., \$1.20 to \$1.21; Spring, 90c. to \$1.02; Barley, 52c. to 65c.; Oats, 36c. to 37c.; Peas, 64c. to 65c.; Hye, 60c.; Dressed hogs, per 100 lbs., \$4.75 to \$5.00; Beef, hind quarter, per 100 lbs., ; Mutton, per carcass, per 100 lbs., \$7 to \$7.50; Butter, roll, 18c. to 22c.; Potatoes, per bag, 60c.; Hay, per ton, \$13 to \$20; Wool, per lb., 30c. to 31c.

BLACK HORSE HOTEL.

Corner George and Toronto Streets,
TORONTO, ONT.,
JOHN HOLDERNESS, Prop'r.

The largest stables in Canada. Accommoda-
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Also, Breeder of Pure Berkshire Pigs.
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WHITE, BLUE, RED and ORANGE.
Warranted the very best quality. None
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WARPS for Woollen Mills.
Send for Circulars, &c. Address—

WM. PARKS ON,
New Brunswick Cotton Mills,
St. John, N.B.
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**CLEVELAND BAY STALLIONS
For Sale.**

I offer for sale—Lord Zetland, Emperor, Dales-
man and Victor.
Also noted Imported Heavy Draught Stallions
—Royal Tom, North Lincoln and Yorkshire Lad.
Above horses are all sure stock-getters, and
will be sold on reasonable terms.
db-2 WM. LONG, Lansing, Ont.

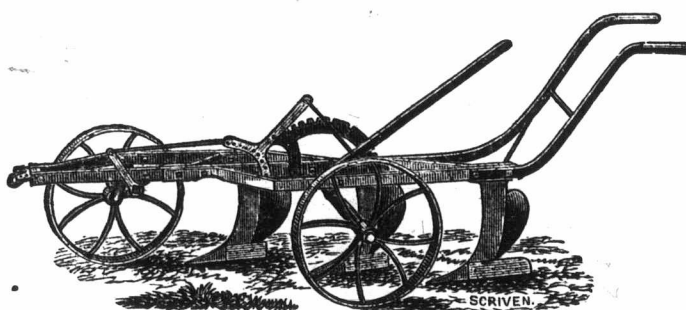
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QUINTUPLE HIGHEST AWARDS
1873! 1874! 1875! 1876! 1877!**

**WHEELER & WILSON'S
New Machine,
THE BEST IN THE WORLD**

Unanimous Opinion of the Judges.
1873. "This Machine is a decided improvement
over all other machines in the market, and fully
merits the Grand Medal of Honor."
1874. "We unanimously recommend it for
the highest award which it is in the power of the
Institute to bestow."
1875. "We unanimously recommend that the
Great Medal of the American Institute be
awarded to the Exhibitors for this Machine."
1876. "The Sewing Machines manufactured by
the Wheeler & Wilson Company, are, in our
opinion, of the highest order of excellence, as has
been shown by tests made by the Judges, cor-
roborated by the reports of the several Boards of
Judges for the last four years, and by original
certificates of satisfactory operation from parties
using the machines for long periods of time.
"This type of machine practically fulfilling, in
our opinion, the conditions required, we respect-
fully recommend that the GREAT MEDAL of
the American Institute be awarded to the manu-
facturers for the same."
1877. "This machine has already received
from the American Institute all the awards and
recognition under the rules possible to a Sewing
Machine. We do not hesitate to declare it the
best Sewing Apparatus in the World. We recom-
mend for it the highest recognition under the
rules that can be awarded."
THE SPECIAL MEDAL OF 1877.
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In the World.**

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Send for circular, terms, &c. Manufactured by

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d.a.t. JOHN A. ROE, Manager.
—THE—

Ontario Poultry Society

will hold their
ANNUAL EXHIBITION
In the City of London,
on Tuesday, Wednesday, Thursday and Friday,
Feb. 26, 27, 28, and March 1.

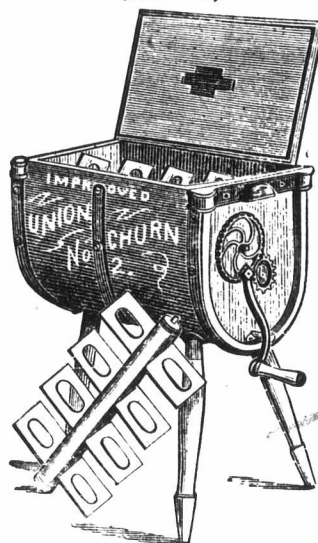
\$1,500 in premiums will be awarded. The
prize list will be out in a few days. Entries close
the 19th February. L. G. JARVIS,
db-1 Sec. Treas., Nilestown P. O.



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It contains nearly 150 pages, hundreds of fine illus-
trations, and six Chromo Plates of Flowers, beautifully
drawn and colored from nature. Price 50c in paper
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in every language. Price \$1.25 a year; 5 copies for \$5.
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(Pat. 1876.)



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1st Prize at London, Western Fair, 1876.
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ping Agent, 373 Richmond Street, London. dg-t

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Fine Bone-Dust, - - - - -	30 "
1-2 inch " - - - - -	25 "
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Diploma was awarded to us at the Provincial
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\$8,000 Dollars will buy 100 acres of good
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One bull 2 years old, two bull calves 11 months
old, three cows 3 years old, three heifers 2 years
old, four yearlings and five heifer calves, cows
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db-2 Address J. R. PETTIT, Grimsby.

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A hardy and good Millers' Wheat.
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All the reliable novelties in style.
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Millions of trees and plants. Best strawberries,
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