

FARMER'S ADVOCATE

AND HOME MAGAZINE.

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The Farmer's Advocate

—AND—
HOME MAGAZINE.

PUBLISHED MONTHLY BY.....WILLIAM WELD.

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TO SUBSCRIBERS:

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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.

The Month Past.

The weather has been unusually mild. There has been no sleighing to speak of in this western section of the Province, and not much in other parts of the Dominion. No injury has as yet been done to the wheat plant. Markets have been very quiet, despite the variable war prospects, which have been as changeable as the wind.

THE WESTERN DAIRYMEN'S ASSOCIATION

has held its annual meeting. These meetings are not as well attended by farmers as they formerly were. There were some valuable addresses delivered, and very interesting discussions took place, such as every dairyman should obtain profit from. No report about it could half equal the reality of attending it; the difference between attending a meeting and reading about it is about as great as the difference between kissing a girl by letter and attending to it personally. Political party is too strongly on one side, and the effects are beginning to tell against its utility. Whenever the Government pays money to any institution, it must have the support of that institution. Had the Government not given a cent to it we think that the Ingersoll town hall would require increasing in size. Notwithstanding the valuable addresses given, the hall was not half as well filled as we have seen it. Besides political axe-grinding, there was too great an attempt to favor dealers by trying to give them a half pound more cheese off every cheese than they now take; at present they do not allow for half or quarter pounds. Another attempt was

made to impress on the minds of dairymen that only one brand of salt should be used; this was to give dealers an opportunity to make money. The salt they desired to palm off on the country was a brand that is not used in Europe to any extent, and there are many brands quite as good. Pure salt is necessary; the Liverpool salt has been found better than most of the American or Canadian salt that has been used. Dry salt is needed; the damp, soaking salt commonly used is not fit to make first-class butter or cheese. It was with some difficulty that resolutions commending the above two innovations were checked.

We had some conversation with Prof. Arnold about butter and cheese. We inquired about

OLEO-MARGARIN.

He said it was superior to much of the butter used by farmers and citizens; that it is purer, cleaner and has a better flavor; that the condemnation of it is a hue and cry got up by dealers only, not by consumers or dairymen; the cry is made because the oleomargarine is taking the business out of the hands of dealers. It is worth and will bring 20 cts. per pound, while a great deal of our butter will only bring 5 or 6 cts; it is not equal to gilt-edged butter, but few make gilt-edged butter in comparison to those who make a common and an inferior article.

DAIRY VS. FACTORY CHEESE.

Prof. Arnold informed us that many of the leading families in Rochester, New York, Philadelphia and other cities do not use factory-made cheese; dairy cheese is preferred, and it is of a better quality. While butter made at the butter factories is better and will command a higher price than butter made by farmers, cheese made by farmers is better than that made at cheese factories. This information quite astonished us, and should astonish you and set you all on the alert to improve and not allow such a stigma to rest on our factory system nor on our housewives. Many of you will be inclined to doubt the above facts; before doing so you must consider that they are from the highest authority on this continent, and we believe unequalled on any other.

The Annual Meeting of the

AGRICULTURAL MUTUAL INSURANCE CO.

took place on the 21st. The attendance was not and never is very large. The old officers were re-elected, with one exception, and he was appointed an honorary member. It is pleasing to report that while so many of the badly managed and fraudulent insurance companies have burst up during the past year, this Society has stood the test of all storms, despite many attempts to injure it. The whole meeting was entirely satisfied with the management of this Society. You have a Board composed of agriculturists, such a body of men as directors whose names, for honor and integrity, we do not think could be surpassed, if equalled, in any part of this continent. There is no specula-

tion; no dividend to be made or paid. They work for you for honor; the only pay they get is a very small sum for each day they attend the meeting, which occurs monthly. We have told you before and tell you again that we believe it to be the safest insurance company you can insure in. There are and will be wild-cat insurance companies that will under various pretenses take your money, but the foundations of many are unsound; the bottom will be found by some sooner or later. Enquire who are the Presidents and Directors, and if they are working for their own pockets or to make dividends. We believe every farmer should have his buildings insured.

What Variety of Trees are Best Adapted for the Shelter of Orchards, and What is the Best Time to Plant?

The opinions elicited at a meeting of the Ontario Fruit Growers' Association from several of its members will provoke a consideration of the important subject to fruit growers, from some of our readers. James Taylor, St. Catharines, spoke of an orchard in that neighborhood, which was protected by a village hedge or screen.

John Reed, Hamilton, named the Arbor Vitae and Norway Spruce.

Col. John McGill, Oshawa, had used for this purpose the yellow poplar. Had planted evergreens, and preferred to plant them in the spring, after they had made a little growth.

W. Saunders, London, had succeeded in growing a good shelter belt composed of Norway Spruce and maple trees, with Scotch and Austrian pine. The outer row is of maple, the middle row of Scotch pine, mixed with Austrian pine, and the inner row of Norway Spruce.

Dr. Watt, Niagara, suggested that such a belt required a large breadth of ground. He had found the roots of the common white pine to extend a distance of from 30 to 40 feet. His neighbors had used silver poplar, mixed with white pine, but the poplar proved to be a nuisance, because of the numerous sprouts thrown up from the roots.

Chief Johnson, Tuscarora, had sheltered his orchard by leaving a belt of the natural forest.

P. E. Bucke, Ottawa, plants pine trees among the apple trees through the orchard.

L. Wolverton would take the Norway spruce for a shelter belt in preference to any other tree; it keeps thick and close to the very ground, while the balsam fir becomes poor and thin with age, gradually losing its lower limbs.

Mr. Arnold would plant evergreens, just as the buds are beginning to burst.

Mr. Quinn planted last spring a thousand Norway spruce and lost only four. Also removed some in the middle of September, and they all grew well.

Increase of Permanent Pasture and Decrease of Cattle.

There has been for some years a continuous increase of permanent pasture in Great Britain. The ever increasing importation to England from foreign countries of breadstuffs, added to the higher rate of wages now paid, have led the farmer to the conclusion that the growing of cereals was no longer profitable. As the profits of grain-growing decreased the high price of meat seemed to indicate that the profits of the cattle feeder were greater than could be obtained by the growing of grain crops. The competition in beef and mutton was not so great as in breadstuffs, and the cost for labor was comparatively light. Hence the British farmer converted his wheat fields into pasture lands, and left the supply of breadstuffs more than ever to others. This might seem at first to tend to a proportionate increase of the number of live stock—the greater the acreage of pasture the greater the number of beeves and milch cows; but the very reverse has proved the result. There is a large falling off in the number of horned cattle. Not only has the produce of breadstuffs been decreased correspondingly to the decreased area under tillage, but also, as it has been pithily remarked, "the more grass, the less beef." This state of affairs, so unaccountable to many, is easily accounted for by observant agriculturists. A field under tillage yields a far greater quantity of food than the same field would in pasture. Of this any farmer may convince himself by calculating the feeding capability of a tract of land in pasture with the acreage of hay for winter feeding; and calculating the quantity of food he could raise from cultivated land of the same area and of equal quality. He will find the weight of food grown each year off an acre of tillage to be about four times greater than is taken off by grazing, and four times the number of live stock can be fed on land cultivated than on the same land in pasture; hence it follows that as the acreage of permanent pasture increases, the number of live stock decreases. The better course of farming is a system of mixed husbandry—a diversified agriculture combining the advantages of growing grain and feeding cattle. They both are of mutual advantage: Tillage enables us to feed more live stock, and the greater number of animals well fed and properly cared for enables us to keep the farm in such a state of fertility as to add to the yield and quality of our grain and other farm products.

Ontario School of Agriculture and Experimental Farm.

The third annual report of this School and Farm has been received, and we cannot say that we are satisfied with the results of three years' expenditure of money and labour on the Ontario Model Farm. The President of the Institution, no doubt had difficulties to contend with, and we presume he has done as much as many could do under the circumstances; but the report furnishes additional proof to confirm the opinions entertained from the first by many that it would not pay directly or indirectly.

In forming a judgment of the success of the experiment on the farm we must take into consideration its condition and capabilities, when acquired for the purpose. A farm that had been acquired for the Model Farm was condemned as of inferior quality, and the land now known as the Experimental Farm was bought at a high price. It was said on high authority to be every way suitable. The formation was limestone and the soil good—a fine rich loam, resting on a good subsoil of clay and limestone gravel. The land was in a fine state of cultivation, and the fences excellent and in good order. It was well watered having three streams

running across it at nearly equal distances from each other. This farm from its variety of soils and the high character which it had long and widely attained from the breeding of improved stock seemed to meet satisfactorily the most important conditions required, involving no serious drawbacks. See Agl. Report 1873.

Farmers must have expected from the description given of the farm on high authority, and from the expenditure on it for three years, of money and labour, that it would now be in every respect a model farm. And "where do we stand? Midway in the work of making a Model Farm." It cannot be said to have been an impoverished soil, labouring under the want of accumulated individual capital, and under a system of peasant proprietorship.

The crops of last season were none of them as might reasonably be expected under the circumstances; in some instances they were very light. Of wheat there were twenty-one acres—the greater part under root crop in 1875, the remainder old pasture unbroken for twenty years—produce, three hundred and seventy bushels. Before sowing two hundred pounds of salt per acre, broadcast with the hand, were applied. And in the cultivation of this, as well as the other crops, there was no stint of fertilizers or of labour. For instance, to the turnip-land there was an application per acre of fifteen loads well rotted farm yard dung, and bonedust two hundred and fifty pounds, superphosphate two hundred and fifty pounds, gypsum one hundred pounds, and salt two hundred and fifty pounds. The hay was top-dressed with one hundred and fifty lb. of gypsum per acre. Produce one and a half ton per acre for thirty-nine acres and $\frac{3}{4}$ ton per acre for thirty-nine acres. Of hay fifty-eight acres were first crop, twenty acres second crop. A field of twenty-two and a half acres is called in the report a root bed of thistles. Many ordinary farm accounts show heavier yields than this highly praised Model Farm, with all its appliances of means to boot. The great mistake we believe was in purchasing the farm for what it was said to be, not for what it really was.

The estimated appropriation expenditure amounts to \$22,570; capital amount \$19,000. In the words of Report 1876 "Money can do much but time must guide most of our agricultural operations."

Horticultural Conference.

The twenty-third annual meeting of the Western N. Y. Horticultural Society was very largely attended, and must have been very profitable to the members. As the business of fruit growing increases year by year, so does it seem that the obstacles to be contended with by fruit growers also increase. The apple and pear trees are affected with disease; grapes rot in the clusters on the vines and insect foes innumerable prey upon our fruit trees and fruits. If we are to be successful in growing and saving any fruit, we must take frequent council together and learn from each other's experience. Hence the necessity of Societies such as the Western New York, and such meetings as this of which we write. In the N. Y. *Tribune* we have a very good report of the proceedings, but too long for the *Advocate*.

On the question of grass or culture for orchards there was a difference of opinion, though there was but one opinion as to the advantage of cultivation and manure while the trees are young; some, however, would continue the same treatment after the trees have come to maturity. Some recommended seeding down the orchard when the trees are eight or ten years old, and then having it as a pasture for sheep and swine. This has been found an excellent way of contending with the codling moth.

The fallen apples, teeming with the destructive insects, would be eaten up by the hogs. It would also aid in fertilizing the ground at little or no expense.

Dr. Sylvester described four methods of treatment for the orchard: 1—Cultivation and surface crop; 2—Pasture for sheep and hogs; 3—Alternate grass and and culture; 4—Constant grass with surface manuring. The pasturing by sheep and hogs he prefers, though by either method a good yield of fruit may be obtained, if the ground be always kept fertile. Some advised the occasional plowing in of green crops. Major Brooks said eternal vigilance and plenty of manuring are the price of fruit.

Another very effectual means of warfare against the codling moth is the use of bands around the tree from the middle of June until the crop is gathered. The band used to serve as resting places for the moth is about 2½ inches wide, long enough to encircle the tree, and fastened with a single tack. It is made of coarse straw paper, folded three or four times, a cheap felt doubled, or a heavy waterproof paper lined with cotton, flannel or cotton-batting. In the dark, dry recesses of this band the moth deposits its eggs. The bands are now made by machinery, and can be easily got at a cheap price. Every eight or ten days the bands are taken off, the worms killed, and the bands replaced. Mr. Heath, who used felt last season, was successful in saving his fruit. For several hundred barrels of Northern Spy and Baldwin apples he was offered \$3.75. When really good apples were scarce, those free from hole or speck commanded fancy prices. His orchard was almost ruined the previous year, when bands were not used.

FERTILIZERS FOR FRUITS.—Professor Dason, having compared the amount of nitrogen, potash and phosphoric acid required by a crop of apples with that required by a crop of beans, said a comparison of these figures will show the relatively small amount required by a crop of apples and the large amount necessary when a surface crop is taken. The food for a ton of apples is found in 2,000 lbs. of fresh cow manure, in about 250 lbs. of barnyard manure, or in 25 lbs. of superphosphate and 10 lbs. of wood ashes. Mr. Boyne admitted the value of barnyard manure and ashes, but the supply of them is limited. He used last year 13 tons of superphosphate, and found it a very easy way to supply the lack of stable manure. Its effects on oats, corn, seedlings and strawberries were remarkable. Wood ashes are very valuable; gas lime a dead loss. P. Barry and Dr. Sylvester both considered gas lime worthless as a fertilizer, not worth the hauling. E. Moody had never known wood ashes to fail. Mr. Hooker said there is nothing equal to barnyard manure. He who plants more than he can fertilize with it cannot succeed. A little commercial fertilizer, however, sprinkled on with the seed, seems to be serviceable to the growth of the young plant. He doubts whether equal effect will be seen afterwards in the crop, or whether commercial fertilizers can profitably be used in the orchard. So far there was but one opinion, and that favorable to the beneficial effect of manure of some sort or other on the orchard. E. Moody said his firm cultivate 160 acres; do not keep animals enough to manure one acre, yet expect to raise as much and as good fruit as those who use barnyard manure.

The apple crop of the past season was the topic of much conversation among the members. It was generally light, except in the south-western counties of the State, but better quality and higher prices in 1876 made the result satisfactory. P. Barry said it is now generally conceded that Western New York winter apples keep better than those of other localities. What he said of apples from that district may be said of Canadian apples, which are now known to be superior to any others in the continent for keeping as well as in other respects.

Over Production.

Gloss over our financial position as we may, we must confess that there are hard times in Canada. As a class farmers stand safer than any others, though they too feel the pressure. Grain crops have yielded fair, and wheat has had a good market at paying prices; but when manufacturers and traders are found to practice the most rigid economy in order to meet their liabilities, many articles of farm produce are inevitably in less demand in the home market, and the producer has a lighter purse than he would if mechanics and all of the industrial classes were employed full time and at fair wages. When farmers have been forced to carry back from the market unsold good carcasses of beef, they may well say as we have heard them: "There is too much meat in the market, and in the country, for the demand; people do not buy as they did in other years." The demand for butcher's meat has, on the whole, been very dull this season, notwithstanding the shipments to Europe. Foreign demand cannot compensate for the want of a good home market; and a good home market we cannot have unless we give due encouragement to manufacturers. Our farmers are well aware that the best customers—they that purchase most largely in the farmer's market, are the families of mechanics; and the oft repeated cry of over-production is only an empty sound. It is not over-production, but the crowding of our markets and stores with goods of woolen, wooden, iron, and every other material made not here by Canadian workmen, but beyond our borders, that forces the mechanics who are begging for work, and who would be the best customers for our meat, cheese, butter, and other products of our farms, to stand idle around our street corners, idle because we are so unpatriotic as to defer giving any encouragement to capitalists that would willingly give employment to those who so much need it. Workingmen must now make their purchases, not as hard workingmen need for their due sustenance, but in accordance with their scanty uncertain earnings.

A Minister of Agriculture.

We Canadians are apt to think very highly of ourselves and sometimes indulge in a little self-glorification boasting of our energy and perseverance in labours as being without any equal among other people. Let us just cast a glance at what the head of the Bureau of Agriculture in Kentucky is doing in his office. It may be a stimulus to us Canadians. Example is better than precept.

The Commissioner of Agriculture of the State of Kentucky has organized a corps of special correspondents in the different counties of the State who gratuitously furnish him each month valuable reports of the acreage and conditions of various State crops, and the horticultural status of their respective counties, and the most interesting statistical information regarding the live stock and industrial interests of the county. From these reports of correspondents he has compiled and publishes each month in the papers of the State a considerable amount of acreage and condition of the staple crops, gardens, orchards, and vineyards with the numbers and condition of live stock in the various sections of the State, giving formulas for fertilizing land, and the result of experiments with them.

The Commissioner has prepared in accordance with the requirements of the law, "a general account of the Agricultural, Commercial and Mineral Resources of Kentucky," which together with a most excellent map of Kentucky was extensively distributed through the Northern and Western States, and in Europe, as a means of inducing immigration to Kentucky, from other states, and from Europe.

He has also in press his work entitled "Kentucky: its Resources and Present Condition," which contains the agricultural, horticultural, mechanical, commercial, and educational condition of every county in the State.

All this work is done at very little expense, but it is now recommended by the Governor that the Commissioner be allowed one clerk to assist him in his numerous duties.

The Best Time and Method of Applying Lime to Land.

Lime has been said to be improperly classed as a fertilizer, not really adding any fertility to the soil. Whether this theory be correct or not, there can be no doubt of the increased productiveness that has been found in almost every instance in which it has been used to increase the productiveness of the soil. The least that can be said in its favour is that it renders available inert plant-food that would were it not for the application of lime remain in the land dormant, as it had long lain. This chemical action is very beneficial. Not only is it necessary that the elements of fertility be in the soil; these elements must be in such a state as to be available for the growth and maturity of plants in their every stage. Lime also enters, more or less, into the composition of all plants, more especially wheat and clover, and for the successful cultivation of these, more than for other plants, it is necessary that there be lime in the soil, either as a natural ingredient, or applied as a fertilizer. Lime has been sometimes said to impoverish the soil. It is a powerful stimulant, and under its influence the soil yields up for the maintenance of plant-growth more food than it would were there no application of it. This is what the fertility of soil is good for, and the benefit expected from every stimulant. A large produce at once instead of a much less produce, slowly yielding year after year. Lime is most beneficial on strong clay and rich low lands; it has no effect on wet undrained soils, but on no other lands is its effect greater and more marked than such land when drained. The nutritive properties that were almost wholly inoperative in consequence of the pent-up poisonous water are at once purged of there sour qualities so injurious to plant life and by the chemical action of lime transformed into wholesome plant-food. Lime should be applied to the surface, as its tendency is to sink in the soil, and if buried deep it in short time gets beyond the reach of the roots of young plants. Our mode of application was to spread it on the surface from the cart with a shovel, evenly, at the time of sowing the seed and harrow it in with the seed. We applied it to each division of the farm every seven year, fresh slacked from the limekilns, thirty lime barrels, or about sixty bushels to the acre. We never mixed it with barn-yard manure as it would set free the ammonia, one of the most valuable constituents of the manure. In composts of muck, earth from headlands &c., we always mixed lime liberally.

Canadian Fertilizers.

The great resources of Canada as an agricultural country can scarcely be said to be fully appreciated by the most progressive and far-seeing of her people. The virgin soil has given to its toilers abundant reward for their labours, and they felt little care for what the future of the agriculture of the country might be. Even farm-yard manure was little thought of; but now in the older settled districts the fertility of a virgin soil is almost unknown; and now that there is a progressive improvement in agriculture the need of fertilizers other than farm-yard manure begins to be felt.

We doubt if any other country has greater

wealth of fertilizers than Canada. Lime, one of the important materials in improved farming, is abundant in large tracts of the Dominion, and will yet be found as valuable in agriculture here as it has been in Britain. Musselmud, a very superior fertilizer, is used in parts of the Maritime provinces. Nova Scotia is well-known not only in the Dominion, but also in the United States for her stores of gypsum; and the deposits of phosphates in Ontario and Quebec are very large. They are now being extensively mined over a wide district in the Lower Provinces. There is no longer any doubt of the existence of very rich and extensive deposits near Buckingham of phosphate of lime. Their existence has been proved, by the labour of a few miners, and of such quality and in such a large quantity that there must be a large profit in the mining. A writer in the *Montreal Witness* says:—"Scientific analysis has proved that in quality it surpasses probably anything of the kind in the world. No better can be found because it contains as high a percentage as that mineral can contain, being found in as nearly a pure state as it can exist, so that no higher grade need be looked for. As to quantity I cannot speak with the same certainty but the indications are such as to warrant the hope that phosphate mining may be prosecuted with advantage for a century to come." The Phosphate is largely exported to the United States and England, where the shippers get ready sale for it at from \$28 to \$32 per ton in its raw state, and when manufactured into superphosphate it is sold at \$50 and upwards. There is unlimited demand, but the Canadian demand for it is quite insignificant. It produces more immediate satisfactory results in climates moister than ours. Still there can be no doubts of its being remunerative here when properly applied, and that for more than the first year after its application. Land should be dry either naturally or artificially to receive the full benefits of superphosphate; and to a careless, unimproving farmer it will not bring profit. The change for the better must first be in his own ways.

Emigration to the Colonies.

Strange events and still stranger opinions are every day brought to light. From every point of the compass supplies of food have been arriving in English ports. From European Continent the fertile plains of India, the New Transatlantic world, and the more recently colonized Australia breadstuffs have been pouring into Britain, the mart of the world. All have been required for that busy hive of industry. And now we are told of millions of acres of land uncultivated in Britain, that may be brought into cultivation, and yield much of the supplies of food that are at present imported from foreign countries. The London correspondent of the *Glasgow Herald* says that an association is being formed to stop the tide of emigration to the colonies—not on the ground that the colonies are over-populated, but because there is more land in Britain than there are hands to cultivate, and thirty millions of acres not at present under cultivation. A large proportion of these millions of acres we may presume are woodland, fen and mountain, still much of it, if not all, may be reclaimed and brought into a high state of cultivation. The movement, however, cannot much effect our farming prospects. The improved land cannot supply the ever-increasing demand for meat and breadstuffs for the increasing population of the Island empire, and, as long as there is land in the colonies or elsewhere to be had for the clearing, emigration will not cease. A better home market than we have at present we will have in the course of time, and the demand for our surplus must continue.

Spring Wheat.

Numerous letters of inquiry in regard to spring wheat have been received. Some will think they have been neglected, because we could not spare time to write long descriptions and accounts to each of them. We are pleased to answer all questions of general agricultural interest to the best of our knowledge, and also to obtain information from other sources when our knowledge is insufficient. We neither spare time nor money to obtain information about seed wheat. Many of our readers have furnished us with useful information. Some persons know more, or think they know more, about some varieties than the FARMER'S ADVOCATE can give, and withhold such information from the public. It is our desire to furnish you with the most correct information we can obtain about old varieties and any new ones that appear to us deserving of attention. New varieties are often beneficial, but it requires the greatest amount of caution in giving information about them, as there have been so many useless things brought before our notice. We think we have been extremely fortunate in not having been swindled worse than we have been. There have been so many sleek-talking, swindling agents traveling with nostrums, plants or seeds, that one would think the confidence of farmers would be well shaken, but it is not so; there are just as many green farmers ready to be swindled as ever there were. Sharpers are continually operating on your credulity.

Before purchasing any new seed or plant you should write to one or two of the seedsmen or nurserymen that you have the most confidence in, and ascertain from them the value of such plant or seed.

In this western part of Ontario spring wheat is not so extensively raised as in other parts of the Dominion, because winter wheat is found more profitable, and spring wheat has proved much more profitable when raised in more eastern parts of our country than here.

There are two new varieties of spring wheat advertised this year by B. K. Bliss & Sons, of New York.

THE CHAMPLAIN

was produced in 1870 by Mr. Pringle in his endeavors to unite the remarkable hardiness of the Black Sea with the fine and superior quality of the Golden Drop. Several varieties were the result of this hybridization, from which this one was chosen, as realizing the end in view, showing greatly increased vigor and productiveness over both its parents. A careful selection from this for the past seven years has now fully established its character, and we have a wheat bearded like the Black Sea, with the white chaff of the Golden Drop, free from rust and smut, yielding a lighter colored grain than the former, which makes a flour of superior quality. Its strong and vigorous straw, growing 6 to 12 inches higher than its parent varieties, stands erect, frequently bearing, even in very ordinary culture, heads from 5 to 6 inches in length, containing from 60 to 75 kernels each.

THE DEFIANCE.

Another variety of spring wheat of the highest promise, the result of a series of experiments by Mr. Pringle in 1871 to incorporate superior qualities upon the hardy stock of our common Club wheat, by hybridizing it with one of the finest, whitest and most extensively grown sorts of the Pacific Coast.

This variety displays great productiveness, vigor and hardiness. It is a beardless, white chaff wheat, with heads frequently five to six inches long, very closely set with large white kernels, frequently numbering 75 to 80 to the single head. Its white, stiff, erect straw, exempt from the attack

of rust, its earliness, combined with great vigor and superior qualities, should claim for it universal trial.

The above descriptions are taken from Bliss & Sons' catalogue. We have not seen either of them growing, therefore can only report from what we read and hear. A cut of these varieties appears in this issue, on page 56.

The most favorable new wheat we have heard of in Canada is called

THE GORDON WHEAT.

This wheat we are inclined to attach more importance to. It was first introduced into Brant County last year; it came from Indiana, U. S., and was grown there by a Mr. Gordon, from whom it derives its name. It was introduced into Brant last year, and from the accounts received from many farmers who have seen it growing there, it appears destined to be of value to Canada. They write that it has out-yielded any other spring wheat. The samples shown to us are very fine, having a longer grain than that of our Fife wheat and pronounced of excellent milling quality. It is a white-chaffed, bald wheat.

THE MAINSTAY WHEAT.

This wheat was imported last year from Capt. Delf, of Colchester, Eng. In England and Germany it had obtained a good name. Only a small quantity was introduced to try it. The results have not been satisfactory. The English climate is so different from ours that English wheats take a longer time to mature when brought to this country than our wheats do. Some of the Mainstay that was sown early produced a small, shrunken kernel; that which was sown late formed no kernel; some did not shoot to head. The parties who have raised any of the grain intend to sow it again, and it may acclimatize and become a valuable wheat here, or it may be a source of expense to the propagator.

THE ODESSA WHEAT

has gained for itself a much higher reputation in this county the past year than any other variety. Messrs. R. Gibson, W. Walker and J. Robson, all first-class farmers in London Township, speak in the highest terms of this wheat; leading farmers in other parts of Canada also speak favorably of it. No wheat we ever attempted to introduce gave us so much anxiety as this did; two years ago those who had it complained that it would not come into head—that it was fall wheat because it laid along the ground and did not shoot up as other spring wheat does at first; but at harvest it told for itself. It does not head as quickly as our other spring wheat. It has not been long enough in the country yet. No wheat has so rapidly improved in the favor of those who first used it last year; some were inclined to abandon it; this year we think every grain of it procurable will be sown. It is a bald wheat of good quality. This wheat should be sown early.

EGYPTIAN OR ELDORADO WHEAT.

This is the whitest spring wheat we have ever seen. Any one seeing it would feel confident that it is a winter wheat, it is so white. Some good samples of it have been raised north of Collingwood, Ont., and hardly any where else. The past year it has rusted badly in the west. This wheat has been spread through some parts of Canada by pretty sharp agents—we might almost call them too sharp; many farmers have been pretty heavily mulcted by them. Some are still at work. We would advise you not to touch it, however tempting the grain may appear.

THE LOST NATION.

This variety of wheat has succeeded in some localities. We did not like its appearance when growing last year; it is very widely set in the head; it stood well and yielded a good, plump

grain. Messrs. J. A. Bruce & Co., seedsmen, of Hamilton, Ont., have grown this variety on their test farm, and speak favorably of it.

Wm. Rennie, seedsman, Toronto, Ont., has introduced the

WHITE RUSSIAN

wheat. We have had no reports from any growers of this wheat, nor have we seen it growing. He introduces the White Fife this year.

THE REDFERN WHEAT

has maintained its character as a good milling variety, and as resisting the effects of midge and rust better than any other spring wheat that has been well tested. We safely recommend a trial of this wheat in sections where it has not yet been introduced. This variety is called by some the Golden Globe wheat. It is a bearded variety.

CHILIAN, WILD GOOSE, PLATT'S MIDGE-PROOF OR RICE WHEATS.

These are all the same wheat, but known in different localities by different names; is a heavy-bearded, stiff-strawed wheat, has a long, clear looking grain, and is very flinty. Some claim that it will thrive better than any other wheat on low, wet land. The flour made from it is of inferior quality. It is not extensively cultivated, and our opinion is the less the better.

The variety most extensively cultivated is the

FIFE, GLASGOW OR SCOTCH

wheat. It is known by all the above names, but it is the same wheat. It is short-headed, bald, white-chaffed wheat; the grain is of excellent quality. It is and has been a very valuable variety, and is well known everywhere.

THE CANADA CLUB.

This is the name that our best spring wheats are sold under in the British markets. The head is rather shorter than that of the Fife. It passes under the names of Tea wheat, Baltic wheat, Mordeu wheat and Club wheat. It is a good variety; the grain is of good quality; it is not so extensively raised as the Fife, but the Fife, Glasgow or Scotch wheats are all known to the shipping trade as Club wheat.

THE RIO GRANDE

is a long, wide-set, bearded wheat, hardy and liked by some. It makes a fair quality of flour.

THE FARROW OR RED CHAFF

has rapidly spread itself over Canada. This is a red-chaffed, bald wheat; it has yielded more bushels to the acre than the three above-named varieties. It has been sought after by farmers because it yielded well. Purchasers made no distinction in price; in fact, the demand for seed kept it above the price of other wheats. The first shipments that were made of it were under the name of Canada Club. It is a good looking grain, but the quality or yield of flour from it is not as good as from other wheats. It is not worth as much for flour by 10 per cent. as other wheats. The millers, shippers and brokers found this out to their loss. The shipment of it will reduce the price of our more valuable varieties; several farmers have censured us for speaking unfavorably of this wheat. It may improve in time, as our climate has improved the quality of many coarse varieties. It improved the Mediterranean, but it has not improved the Chilian wheat.

THE MINNESOTA AND RED RIVER WHEATS.

Last year there was a large quantity of wheat imported from both the above-named places. The milling quality of both these wheats was superior to that of any spring wheat grown in Ontario. The bran is thinner, and the flour of a better quality. The wheats were both very badly mixed, the principal parts being Fife and Club. In some sections they have not given general satisfaction, chiefly because they were so mixed. They are both the same variety.

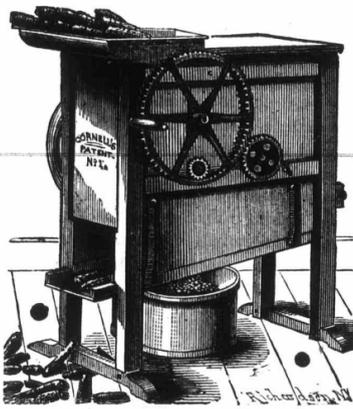
Carrot Culture.

D. E. Mc., of West River, Pictou Co., Nova Scotia, writes:—

"Please direct us how to sow carrots, what sort of manure we are to use for them, and how far to put them apart. Please give us all directions for the culture of beets."

The preparation of the ground should have been commenced last autumn or fall at the latest. It would be a means of having the land in better condition in seeding time. The autumn labor, however, may be dispensed with. If preparing in autumn for carrots, plough stubble ground as soon as the crop has been removed. After about two weeks, when the weed seeds have germinated, plow again; then give a heavy coating of farmyard manure and plow in high narrow ridges, the sod well turned and raised, and the furrows so cleaned up that no water can stagnate on the ground. By this autumn and fall tillage the land will in spring be dry, mellow and clear of annual weeds, and the manure will be amalgamated with the soil, an important point in carrot culture, as unrotted manure makes the carrot grow forked. If the land has not been prepared in the fall as described, the preparation of the soil in spring must be of a like tendency, pulverizing the soil well to a good depth, and using thoroughly-rotted manure. To have a good carrot crop it is necessary to sow early—as early in the spring as the ground is dry enough for labor. Some sow the seed in the fall. In spring level the ridges by cross harrowing; ridge it up by turning the two furrows together with the plow—the ridges about two feet apart; roll those high ridges lengthwise; sow with a drill and cover with a common wooden roller. Two pounds of seed will sow an acre. Cultivate and thin with a five-inch hoe when the plants are up strong and have got their second leaf. Thin them out carefully, six inches apart. Keep down the weeds by frequently hoeing and cultivating. Cultivate for beets as for carrots.

Cornell's Corn Sheller.



This is claimed to be the best corn sheller known. We consider it the best we have seen. It took the first premium at the Centennial Exhibition. This machine has double-feed tubes and double sheller; it is adjusted by coil springs to pressure bars, and will shell corn clean, whether damp or dry, and small or large ears. It has a wire sieve below, and separates the corn from the cobs after shelling. It is a very efficient implement, and is easily worked. We have never seen any sheller work as well. None of these implements are yet made in Canada that we are aware of. The manufacturers are Messrs. Freeman, Green & Co., of Ithaca, N. Y. We have seen one working in this city. We presume our manufacturers will make them here and save the duty. The machine has shelled 600 bush. in a day by hand power.

Notes on the Garden and Farm.

At the Michigan Farmer's Institute, C. L. Ingersoll, in a paper upon the relation of live stock to a farm, says: In the production of live stock our grain is much more cheaply and easily marketed, and the manure left on the farm, which many farmers do not take into account. In this manure we have about fifty-six per cent. of the amount of substance fed out, while about forty-four per cent. is used in the animal economy, with which to grow and lay on fat, as proved by experiments. It is also shown as the result of experiment, that of the many kinds of substances fed to produce flesh and fat, there is very little difference in the value of the manure. About ninety per cent. of the nitrogen on an average, is returned in the manure; and as corn, oats, barley, linseed-cake, etc., vary greatly in amounts of nitrogen contained, other things being equal, it pays best to feed that food which contains the most nitrogen, as by this means the manures are made more valuable.

This is very true. Live stock necessitates meadow and pasture, and grass is a true source of wealth, for the farm that will not produce grass must soon of necessity become impoverished, unless a large quantity of manure is bought. The great value of live stock to the farm is, that a large proportion of the farm produce may be consumed thereon, and at a profit, leaving the manure to be returned to the soil largely embracing the yield, of such cereals as are raised for sale. The importance of permanent pasture is beginning to be more and more felt in the West. The sagacious farmer will allow no means to be left untried to secure suitable grasses for his location. What we especially need is varieties that will produce succulent food during the droughts of July and August. This want is especially felt in dairying, and the introduction of such varieties will be a real boon to stock-growers generally. It is to be hoped that practical experiments in this direction will be followed out until we shall obtain them.—*Prairie Farmer.*

The prompt Canadians have secured a space of fifty feet square to the centre of the main tower of entrance of the Foreign Department of the Paris Exhibition—a most advantageous situation—for the erection of a trophy of Canadian produce one hundred and ten feet high.

The following cheap and simple method of exterminating rats is said to have been successfully employed by Baron Von Backhofen and his neighbors for some years past:—A mixture of two parts of well bruised common squills and three parts of finely chopped bacon is made into a stiff mass with as much meal as may be required, and then baked into small cakes which are put down for the rats to eat. Several correspondents of the *German Agricultural Gazette* write to announce the complete extermination of rats and mice from their cow-stalls and piggeries since the adoption of this simple plan.

No Chinese farmer ever sows a seed of grain before it has been soaked in liquid manure diluted with water, and has begun to germinate; and experience has taught him that this operation not only tends to promote the growth and development of the plant, but also to protect the seed from the insects hidden in the ground.

A correspondent of the *Pacific Rural Press* says, "The only effectual remedy for the wire worm I know of is thorough cultivation of the soil. Those that are troubled with them will find by examining their soil that it is cold, and by stirring in thoroughly it will get warmer. By so doing they will kill the wire worm, as it cannot live in warm ground."

Deep plowing should be confined to rich lands plowed in the fall, and shallow to thin ones plowed in the spring, leaving the middle course for the medium soils. Manure when used should, if possible, be spread and plowed in during the fall; but if spread on the surface as fast as made, during the winter season, it suffers less waste and depreciation than when heated in the barn yard. Barn yard manure stimulates stalk and leaf growth at the expense of the ear; but manufactured fertilizers exercise a contrary effect. In fact, to grow the largest crop of corn, grain being considered, recourse must be had to plant or animal ashes.

Plants respire by leaves, and dirt obstructs their perspiration; they feed by leaves and dirt prevents their feeding; hence the efficiency of leaves is considerably promoted by their being kept clean.

THE COST OF FENCING.—The fences of the United States are reported to be worth \$1,800,000,000, or \$45 per head for each inhabitant. The expenses necessary to keep them good is at least \$100,000,000. Major Brisbane, of the United States army, estimates the annual destruction of timber in the United States at 5,500,000 acres annually, and that one-half this immense area is required for fencing alone. However true this may be, and we cannot help regarding it as a wild statement, it is nevertheless true that fencing is one of the most expensive items the farmer has to deal with. The increasing scarcity of timber in the West has caused the total abolishment of fences over large areas, and the plan, where tried, seems to be effectual.—*Western Farm Journal.*

A French agricultural journal, the *Basse Cour*, describes the result of some experiments in potato growing recently conducted by scientific men in Germany, in which it is demonstrated that the "eyes" at the top of the potato produce a much more vigorous offspring than those in the lower part, and the consequence is that those agriculturists who cut their potatoes in half before planting them are not well advised in cutting them vertically, but should always divide them horizontally, planting the upper half and using the other as food for cattle. But the best plan of all is to plant the tuber whole, cutting out, nevertheless, all the "eyes" except those in the top part.

A New York farmer, the past year, cut from two acres of land six tons of clover hay, then plowed and sowed ruta bags turnips, and raised 800 bushels. These turnips were regarded as equal to eight tons of hay, making a product of that which was equal to fourteen tons of hay from two acres in one season. The turnips were used to feed the horses, at the rate of half a bushel per day, with what oat-straw they might eat, and no grain. The horses were fat and looked well, and were in good condition to drive five or six hours per day.

Professor Arnold suggested, in a recent address, that those who give us large milk records would throw a helpful light on the subject by communicating, also, a statement of the weight and cost of feed of the cows.

Poultry Yard.

SIR,—I hope you will give in the *ADVOCATE* the information that the following inquiries suggest:—

1st. I have had a flock of fowls—turkeys and hens. One day I boiled a pot full of carrots and squashes; I mixed some bran and about a tea-cupful of salt in the pail, and then fed it to the fowls rather hot. Next morning when I went to the hen house to feed them again I found one of the turkeys staggering and would not eat; his crop was as full as when he fed the previous day. Some of the hens did not come to the feed either. Next morning I found four hens and the cock all staggering, with their crops as full as they were when they fed the day in question. In short I lost seven of my best hens, a cock and the turkey. I gave them black pepper and milk, and also castor oil, but nothing could digest the food in their crops. I thought it was some disease.

Now, the query is: Was it the salt or the hot feed, or both together, that did the mischief? The solution of the query may be a warning unto others.

B. C., Walkerton.

A small quantity of salt is sometimes beneficial for poultry—two much is injurious. In this case the salt killed the birds.

Ontario Poultry Exhibition.

The Ontario Poultry Exhibition took place in London the last week in February. It is claimed by poultry men to have been the best display of poultry ever made in Canada. One American poultry dealer stated that he had gained 20 prizes in the States, but his stock would not have taken any prizes at this exhibition. He said that this exhibition was better than any he had seen there. The birds were in fine feathers and were well arranged. No names were allowed on the coops before the prizes were awarded. This gave more satisfaction than having the names on the coops. Each variety was placed by itself. This facilitated the movements of the judges and gave the public a better opportunity of seeing the birds. The directors and managers of the Provincial and other exhibitions might, with great advantage, adopt the two plans above alluded to.

Veterinary.

Chills in Stock.

BY JAMES LAW, F. R. C. V. S., PROF. OF VETERINARY SCIENCE,
CORNELL UNIVERSITY.

Too little attention is everywhere given to the approach of sickness. In man and beast alike the enemy disease, is usually allowed to secure the commanding outposts, where he can play with success on the most vital portions of the frame, before any apprehensions are aroused or any measures taken to defeat him. Many conditions of ill health, and even many diseases that show themselves suddenly and with extreme violence, have had the way paved for them by a continuous undermining of the health extending over weeks and months before the final outset of the malady. A constant breathing of impure air, loaded with organic emanations from the lungs and skins of a number of animals huddled together into a confined space, from accumulations of dung and urine, from filthy drains and the like, impairs respiration, blood formation, and nutrition, and lays the system open to disorders of all kinds. An unduly dry and fibrous food with a deficiency of water, leads to slight but increasing accumulations in the stomach or bowels which greatly impair digestion, prevent the animal from availing fully what it eats, and render it an easy victim to fever on the occurrence of any exciting cause. A comparatively insufficient supply of drinking water, and continuous dry feeding in winter leads to a concentration of the urine, to the deposit of crystals in the kidneys and bladder, to imperfect removal of the necessary vast matters from the body, and a liability to disease under any unusual disturbing cause. Heavy stimulating feedings, close buildings and a denial of all exercise induces a torpor of the liver, impairs the functions of blood-formation, urination and digestion, and strongly invites disease. So with all other unhealthy conditions of life. Their evil results are not usually seen at once, nor are they so manifestly connected with such conditions that any one can recognize them as their causes, but they are nevertheless the primary and potential, though distant causes of disease, without which the immediate and apparently exciting causes would mostly remain inoperative. But our object is not so much to write a paper or hygiene as to draw attention to the first step on disease itself, and suggest in general terms what should be done to arrest its progress. An animal weakened or rendered specially susceptible by faults in feeding, ventilation, cleanliness, work, previous disease &c., is allowed to stand in a draught between doors or windows, is caught in a storm of rain or snow, is over-heated or fatigued and allowed or compelled to stand in the cold, and very soon it is attacked with a *chill*. The surface is cold, the hair stands erect, the skin clings to the ribs, the limbs, tail and ears are cold to the touch, also the horns and muzzle, though a thermometer inserted in the rectum shows a higher internal temperature than in a healthy subject; the victim is stiff and unwilling to move, and slight tremors or violent shiverings run over the body. There may be any grade of severity from a simple chilliness of the surface and rising of the hair along the back, to a most violent rigor which will make a loose wooden building shake and rattle. The duration too, may vary from a few minutes to as many hours. In proportion to the violence of the rigor or shivering, will usually be the severity of the disease which it ushers in. If the chill can be arrested, and the functions restored to their natural course and rhythm, such disease will usually be either warded off, or at least very largely moderated in its severity. Hence the great importance

of facing such disorders at the very outset, and warding off a disease which it might be impossible at a late stage to guide to a successful termination.

We must bear in mind the true nature of the malady; that we are not dealing with a simple chilling of the body; for the great mass of the body—the interior—is unnaturally warm; it is the surface only that is cold, and this is due to nervous disorder rather than exposure. The bloodvessels of the surface have contracted driving the blood inward on the vital organs and especially throwing an undue work of elimination on the mucous membranes of the lungs, bowels and kidneys with consequent general disorder. Our first object therefore must be to restore the deranged nervous functions, and this may be sought in various ways. A common practice is to give nerve sedatives, and as a familiar remedy aconite is largely in use. The tincture of aconite root should not be given in doses exceeding forty drops to horses or cattle, to be repeated once only, at the end of an hour. It is a very potent poison and if given to excess or too frequently repeated, and if employed in a case such as we are considering it must be used so as to have a prompt and full effect on the system, to cut short the chill and induce a free circulation in the skin. Other allied sedatives, such as veratrum, lobelia, and even tobacco are occasionally employed to fulfil the same object, but all alike are violent poisons and should be used with becoming caution.

A much safer course is to resort to the use of diffusible stimulants, and other warm drinks, and to the application of warmth to the system of the body. In this purpose the alcoholic stimulants—whiskey, brandy, gin—may be used in doses of six or eight ounces for the larger animals; or $\frac{1}{2}$ oz. carbonate of ammonia; two drachms sulphuric ether; one oz. sweet spirits of nitre; or even one oz. ground ginger may be administered. Whatever is given should be associated with several quarts of warm water or gruel (100°F.), and a similar amount of the latter may be thrown into the rectum as an injection. Such stimulants, warm drinks and injections may be repeated with impunity at the end of half an hour unless they shall have secured a free circulation in the skin and perspiration before this time.

Meanwhile the free action of the skin should be further sought by applications made directly to the surface. Warm woolen clothing for the body, and loose flannel bandages for the limbs will do much to solicit a free flow of blood to the surface. Active rubbing of the back and limbs with wisps of straw is of great value, the parts being temporarily uncovered for the purpose, and wrapped up again as warmth is restored. But in all severe cases the direct application of heat should never be neglected. Bags loosely filled with hot sand, bran, grain or chaff may be laid across the back and loins, while the feet may be placed in buckets of hot water for ten or fifteen minutes each, being afterwards rubbed dry and loosely bandaged. Even mustard, pepper and other stimulants may be rubbed on the limbs to advantage, if an attendant with sufficiently dull nose and eyes can be secured.

The patient ought to have, a comfortable warm building, but not at the expense of impurity in the air, which is one of the causes most conducive to such attacks, and which cannot be continued with impunity after the attack has commenced.

By such simple measures as above referred to many serious inflammations of important organs may be checked in the initial stage, and the expensive course of nursing and medicine avoided, together with a considerable deterioration in the value of stock. When the immediate danger has been dismissed, there still remains the remote cause to be removed, and to the discovery of this the judicious

stockowner will give his earnest attention so as to avoid similar occurrences in the future.

[Thanks to Mr. Law for his valuable contribution on chills in stock. This clear method of tracing the disease to its cause, and the remedies prescribed, and the preventatives are well worthy the attention of stockfeeders, and the whole article will repay the careful study of it by all.]

Agriculture.

Good Work for Winter.

BY H. IVES, BATAVIA, N. Y.

There is no time of the year when farm-yard manure can be drawn out on to the farm so readily as in winter, with runners on the snow, or even with wheels on frozen ground. If the manure has accumulated under shelter or in basements where it does not get too much frozen to be handled, and especially if it needs to be drawn, for men and teams at that time of the year generally have plenty of time to do such work, and there is no time of year when it can be drawn so quickly and easily, and with less damage from driving over the fields.

By doing this work in the winter not only facilitates the spring work, but allows the farmer to use the manure to much better advantage than if it was delayed until plowing time before drawing, for if it is too coarse, it can be put into large piles, near to where it is to be used, where it can be pitched over and into fine quality before using. But what I consider the greatest advantage, and most economical way of using, if it is only fine enough when it is drawn, (mine is for I chaff every thing used, even to the bedding), to spread as thrown from the sleigh or waggon, to be a surface manuring, and mulching of the fields. If spread on the wheat it not only feeds the roots with the liquid, leaking from the manure, but the mulch will act as a great protection to it through the most trying spring weather, it will also aid very much in getting a good catch of clover when seeding to it, though a slight dragging or brushing should be given the wheat before seeding. The principle use that I make of manure drawn out in the winter, is to spread on any or all grass land; especially a turf lot that is to be broke for planting ground in the spring. I believe it to be the very best way that manure can be applied to land for that purpose.

By making a similar application of manure as a top-dressing to the meadow, late in the fall, or in the winter, often gives better results than from any other way of applying, when this is done, a man should pass over the ground in the spring to knock in pieces the lumps of manure, and then the meadow should be slightly dragged once or twice to work fine, and in to where it will do the most good. I have found it to be of so much advantage and economy to use manure in this way, that I believe it to fully pay for cutting all fodder, (with power machine), that goes to make manure, and to keep it so protected that it can be drawn and used at any time, even without taking into account any advantage of the feeding of it in that condition, or of keeping the stock in so warm a place that the accumulation of manure from them will not freeze.

Soils are improved by mixing. The admixture of clay with sandy or peaty soils, however, produces both a physical and a chemical alternation. The clay not only consolidates and gives body to the sand or peat, but it also mixes with them certain earthy and saline substances, useful or necessary to the plant, which neither the sand nor peat might originally contain in sufficient abundance. It thus alters its chemical composition and fits it for nourishing new races of plants.

The Cost of Growing Potatoes.

It is not possible to give any detailed cost of growing an acre of potatoes that will apply to all cases, as it costs more in some soils than in others, and some farmers have better implements than others; but the following estimate is not far from being correct in most cases:—

Plowing one acre of land.....	\$ 2 00
Harrowing and furrowing.....	1 00
Planting and covering.....	2 00
Cultivating three times.....	2 00
Applying Paris Green twice.....	3 00
Digging and drawing in.....	5 00
	\$15 00

To this should be added one-half the value of any manure applied to the land, as half its virtues may be charged to succeeding crops; and if you please, you may add interest on the value of the land. I am sure that any farmer may do all the work for an acre of potatoes, as above stated, for \$15; and in some cases the potatoes will not cost over fifteen cents a bushel, while the average will not, even when a good dressing of manure is applied, be over twenty-five cents per bushel.

Spring Killing of Wheat.

Spring killing—as distinguished from winter killing of growing wheat—is accomplished by the action of frost on the alternate thawing and freezing of the surface of the ground. In thawing the surface soil falls or settles; in freezing it is lifted up, having a vise nip on the tender wheat plant by which its roots are ruptured; and by a frequent recurrence of such process, the plant is sometimes lifted entirely out of the ground and left dead.

Good wheat soils—say rolling, sandy, clay loam, level, sandy loam, or the very deep bottom soils on the margin of streams—are exempt from this injury, partly by reason of their natural drainage, but chiefly because their soil texture exempts them. The texture of soil, of course, depends greatly upon the presence or absence of superabundant moisture. Prairie and level clay lands are especially subject to alternate upheaval and settling by the action of frost. Winter and spring sometimes give place to summer with so little of violent alternations of frost, and with such an absence of superabundant moisture, that lands liable to spring killing are so far exempt as to yield abundant wheat harvests.

The object of this article is briefly to show that skilful cultivation may, for the time being, so change the texture of such uncertain soils as to make them, in this respect, as sure as the best wheat soils.

First of the prairie, for that is somewhat the key to the whole. In the year 1824, I first beheld the prairie. The pioneer settlers were then, with huge wooden ploughs, drawn by four stout yoke of oxen, breaking up the virgin prairie sward. The furrow slices, which were eight or ten inches thick, and very wide, resembled, in consistence, hugh oak planks, so unyielding were they to the tread of man or beast. A day's harrowing was given to each acre to fit it for seed. Sometimes a light, sharp ax was used in place of a hoe in planting corn. Now, while it was said that it would be better to throw away winter wheat than to sow it on subdued prairie soil, yet on these furrow slices winter wheat was grown with absolute certainty, so far as any upheaval of the soil or spring killing are concerned. Large crops were not obtained, but very uniformly from ten to fifteen bushels per acre were harvested. The texture of the rotting sward, for the time being, bade defiance to the sudden transitions of freezing and thawing.

Now about level clay lands. When the completion of the Erie canal, and the consequent unlimited demand for wheat, in cash, at very remunerative prices, gave a great impetus to wheat growing in Northern Ohio, the owners of vast tracts of beech and maple clay lands attempted to grow that cereal on a large scale. In some seasons they were successful, and in other seasons—because of spring killing—they failed. One farmer, even in these unfavorable seasons, always had good wheat. Sometimes his wheat field, like an oasis in a desert, was in striking contrast with surrounding desolation. His success was due to an artificial change of the texture of his soil. It was the prairie exemption over again. He selected for wheat a tough timothy sward, which in the season of trial, was dead but not entirely rotten. Thereby his soil was made to resemble, in texture, soils which are naturally exempt from spring killing.

There are prairie farmers, at the present time, who very uniformly raise from twenty-five to thirty bushels of wheat from old prairie soil. One method is this:—The field is first drained. In some cases tiled. In other cases plowed in narrow ridge lands, with outlets for surface drainage. Then the plowed and harrowed surface is treated to a slight sprinkling of rotten barnyard compost; then rolled. Then the seed wheat is drilled in. Afterwards the field is undisturbed. The man who invented and practiced this method often accomplished what his neighbors previously considered impossible.

Wheat is very sensitive of a superabundance of moisture. Land must be dry either by natural or artificial drainage, or else success in wheat-growing is a very exceptional case, and the exception is very rare indeed.

Plows and Plowing.

Some of the facts connected with the history of the plow seem hardly credible at the present time. The forked branch of a tree was used by our Saxon forefathers in England to do their plowing with. As late as the year 1740 there was a custom prevalent in the remote west of Ireland of attaching the rude plow to the horse's tail. This necessitated the work of two men, one to hold the plow and the other to walk backwards before the poor animal to guide it by striking it on either side of the head. Strange as it may appear, this custom was only stopped by an Act of Parliament being passed, making it a criminal offence to attach an animal to a plow in the above singular manner.

We find the same custom was mentioned as being used in part of that country as late as the year 1792. In an article on agriculture, in the *Encyclopedia Britannica*, published about the year 1822, we find that the most approved plows of those days were constructed of wood, with a covering of sheet iron on the working parts; and that the prize plow at one of the agricultural shows in the north of England had a beam ten feet long, and required the united work of six oxen and two horses to draw it, and then not work the ground any deeper than two good horses and one of our modern plows do at present.

At the Centennial a large variety of plows were exhibited, not only from America, but also from European countries. The long-handled Scotch plow, from which pattern nearly all of ours are constructed; the American plow, with long beam and handles nearly straight up, so that if you take a long step you will strike your toes against the mould board; the Russian, very heavy and awkward looking; and the Swedish plow, which is nearer in resemblance to ours than any other I saw there.

The first successful steam plow was invented about the year 1856, by Mr. Fowler, of Leeds, England, and the enterprising firm of J. & F. Howard, of Bedford, soon followed in his wake with their patent, and carried on a successful competition for the public patronage. But steam plowing will be a long time coming into general use in Canada, as the cost alone (being about £1,000 sterling) is far too great for the large majority of farmers, and there are yet too many impediments in our farms in the shape of stones, stumps and trees for a steam plow to work. In the course of time it may be used to a limited extent, but this generation will have to look to the horse as the best means of tilling the soil. I mention two very useful attachments which are coming into general use, viz.: the Skimmer, as it is called, for turning sod, stubble or manure to the bottom of the furrow, and leaving a clean, mellow soil on top; and the Adjustable Heel, lately patented for regulating the depth of the point when it becomes worn in hard dry soil. We have now to consider the relative value of deep and shallow, and fall and spring plowing, and I hope that my remarks will be fully criticized, and, if wrong, be put right by older and more experienced farmers.

Mr. Alderman Mechi, of Tiptree Hall, Essex, England, one of the ablest experimenters on agriculture of the present day, is decidedly in favor of deep cultivation. He uses at certain times, two plows in the same furrow, the subsoil one drawn by four heavy horses, and he says thereby gets rid of a great many weeds especially of thistles, which by ordinary plowing are only cut off seven or eight inches under ground and soon force themselves again to the surface. It stands to reason that if the root of a plant is cut off twelve inches under ground it cannot come to the surface as soon, or have the same time to produce its seed, as one cut off only half the depth. Deep plowing also

acts in part as underdraining by loosening the soil and deepening the water level or hard pan and gives the roots of plants a greater distance to descend before striking stagnant water, so prejudicial to all growing crops, therefore on clay lands or low bottoms the deeper we can loosen the soil the better. Plants will send their fine fibrous roots wherever they can find nourishment, and if the soil is enriched and soft for a depth of ten or twelve inches it is easily seen that it must yield more food for the growing plants than a soil of only six inches deep. In a parsnip bed was an old well that had been filled up with debris of all kinds. On this part, the plants were very large, and the gardener had curiosity enough to see how long one of the largest was, and he dug eleven feet before he reached the end of the small roots of the plant. I myself pulled up a parsnip in our garden that grew where I had taken out an old root the year before, that measured five and a half feet to the end of the longest root, and I have no doubt but some of it was left in the ground. Again on clay or bottom lands the subsoil itself contains valuable elements of fertility, and by merely stirring this soil instead of turning it up, we give a chance for the roots to penetrate and appropriate this food to themselves. A good many farmers misunderstand the way and the use of deep cultivation. Anyone of ordinary intelligence must know that if he turns up three or four inches of cold sour subsoil, and then sows his seed he will get a very slim crop, if he gets any. The right time to plow deep in this country, is in the fall, and leave the ground rough all winter, the cold sour earth thus thrown up is exposed to the influence of the frost and snow, and being hungry absorbs large quantities of Ammonia and Nitrogen from the air, snow and rain. Then follow this plowing with summer fallow. Plow the second time in June or July only about half the depth of the fall furrow, then by plowing the seed furrow the same depth as the first, we turn back the previous top soil with the weeds, sod or stubble thoroughly decayed and the previous subsoil turned below again, enriched by natural and artificial manures, and we hereby form a deeper and richer soil for the roots of succeeding crops.

A gentleman had a field of black sand somewhat similar to our river flats plowed about twice the depth of former plowings, the succeeding crop was almost a failure, but after two or three plowings the benefit began to show itself, the land seemed entirely renovated and produced unprecedented crops. The general advice of nearly all old and successful farmers is to plow deep. From my own experience I am convinced that on heavy clays or low lands deep cultivation is extremely beneficial, while on light sandy or gravelly soil, just the reverse is the case. On the last mentioned soils we should enrich the surface, then by the law of gravitation the manure is washed to the roots of the growing plants and appropriated by them. The safest way on these light lands is to keep what soil you have in a good state of fertility by applying manures on or near the surface such land does not need draining and the subsoil is loose enough for the roots to penetrate, if there is anything there that they can use for food. Every farmer must be his own judge, and plow according to the nature of the soil he works, but give me deep cultivation on my heavy land and shallow on my sand and gravel.

Abridged from a paper read by Brother T. A. Good, before the Brantford Division Grange.

Alsike Clover.

A correspondent of the *Manchester Enterprise* writes:—

“S. B. Palmer, of the town of Manchester, has threshed 18 bushels of beautiful, clean Alsike clover seed from 4½ acres of land (a gravelly loam). In the spring of 1870 he sowed about five pounds of Alsike seed to the acre, and in 1871 he cut it for the seed. In 1872, like other clover, it was partially killed by the winter. In 1873 he mowed for hay what was left alive, and in 1874 he used the land for pasture. In 1875 he plowed it seven inches deep and raised a crop of corn. In 1876 he plowed and sowed with oats, and the Alsike came up finely without seeding. In 1877 he mowed, stacked and obtained the above amount of seed, besides the hay. Alsike makes the best of pasture or hay, and four pounds of seed are sufficient per acre. I think it is as hardy as old clover. I have found it a success on reclaimed marsh land. It is claimed to be the best of honey-producing clover.”

Canada Thistles.

SIR,—In the year 1875 I noticed an article in your paper on the method of killing Canada Thistles. It was in the fore part of the summer of that year that I noticed the article, and as near as I can remember, it read as follows (the exact dates I do not remember):—

"Cut the thistles down to the ground the first of August, and do so again the first of September, and this simple method or process would undoubtedly kill the thistles."

Out of curiosity, I went into a piece of standing oats on the first of August and cut two large patches of thistles, and I repeated the process on the first of September (not the first day of September, but nearly so—not later than the 10th). I looked at the thistles in the fall, late, and they were still growing; I then came to the conclusion that the remedy was a fraud.

The next spring we put turnips on the same land, and the thistles were not seen there that year or since. The twice cutting completely killed them. Now, if you will again publish the same article and particularly call the attention of your readers to it, I do not hesitate in stating that they will be greatly benefited by it. I think it must have been some particular of the moon. As the thistles are increasing so fast, I feel that it is the duty of us all to do what we can to keep them down, and I believe this method will surely kill them.

JOE, Richwood.

In compliance with the suggestion of our Richwood subscriber, we reprint the article on thistles. In some parts of the country this weed is on the increase, many farmers thinking they cannot be extirpated. It is to such subscribers as this, who will put into practice the advice given, that the *ADVOCATE* is really beneficial. The following is the article:—

"In our slight experience of Canada Thistles we have never had much difficulty in eradicating them, and we have no doubt that the method here recommended will, if carried out, be successful.

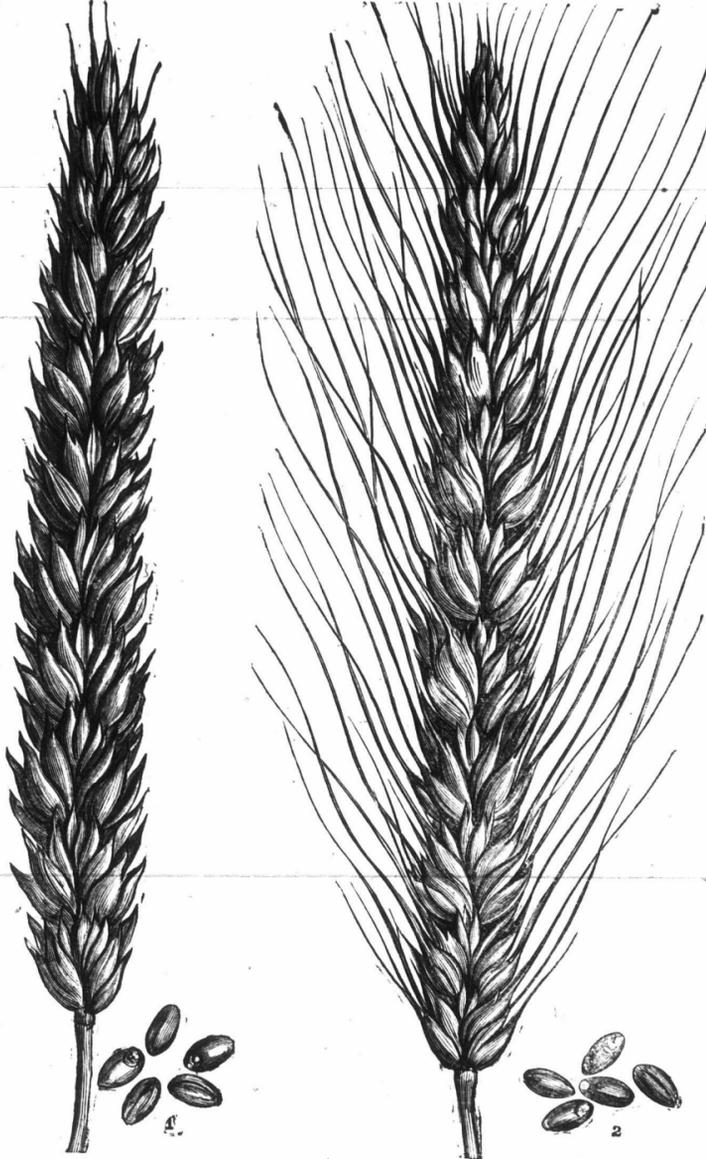
"A luxuriant crop of weeds, especially such as thistles, rag-warth, and others of the larger species, are symptoms of the fertility of the soil, and not only so, but, as the *Country Gentleman* well remarks, the thistle is a most efficient loosener of the soil. Deep down for many feet it strikes its tough roots, and they, when rotted, as they will be when its vegetation is killed, leave the places they occupied free passages for heat and moisture, and the mineral food they have drawn from the subsoil is a fertilizer of no little value.

"A farmer anxiously inquires of us how he can possibly kill a dense patch of several acres of Canada thistles. He will perhaps be startled if we should tell him that we would rather have a field filled with a dense growth of these thistles by the middle of June, on a strong soil, than to have a bare field or a badly seeded pasture.

Next to red clover, the roots, stems and leaves of the Canada thistle are one of the best green crops to plow under. The roots are powerful looseners of the soil, and the tops, when well rotted, help to increase its fertility. Plow them under with a chain on the plow, when just coming into blossom, and they will soon rot in the soil. If left a little later, the plowing will be more destructive to the plants, but they will not rot quite so quickly. If the plowing is deeply and thoroughly done, they will not be seen above the surface for a month. But the very moment the first green point is seen peeping, plow the land again, and repeat it just often enough to keep them constantly smothered. By the 20th of September or 1st of October the thistles will be effectually killed, and will never again make their appearance, while the rotted

stems and leaves will have increased the fertility of the land. Usually about four plowings will have done the work effectually, at the same time that it will have rendered the field mellow like a garden, and destroyed most of the other weeds that may have been in the soil. All perennial rooted weeds, if kept under, will be destroyed, and all the seeds of annuals that have been thrown up near enough to the surface to germinate, will share the same fate.

"We have never found any difficulty in killing patches of Canada thistles in a single season by a few plowings, if the soil is of a heavy or clayey character, so as to rest compactly upon them when they are turned under. On lighter soil more care and more frequent plowing are necessary. If there are any large stones, stumps or other obstructions to free and perfect plowing, the thistles will not be



HEAD OF DEFIANCE WHEAT.

HEAD OF CHAMPLAIN WHEAT.

destroyed at those places; or if they line boundary fences, where the plow cannot reach them, they will of course escape, and other modes of clearing them out, or the removal of the fences, will be necessary."—*Ec.*

Corn loses one-fifth by drying, and wheat one-fourteenth. From this the estimate is made that it is more profitable for the farmer to sell unshelled corn in the fall at 75c. than at \$1 a bushel in the following summer, and that wheat at \$1.25 in December is equal to \$1.50 in the succeeding June. In the case of potatoes, take those that rot and are otherwise lost, together with the shrinkage, there is little doubt that between October and June, the loss to the owner who holds them is not less than thirty-three per cent.

The Horse.**Keeping the Stable Light.—Watering Your Horses.**

From a writer in the *Ohio Farmer*.

Dark stables are an abomination and should not be tolerated. There is no necessity to sacrifice comfort, either in winter or summer, to secure enough light. A horse's eyes are enlarged—the pupil of the eye is—by being kept in a dark stable; he has the harness put on him and suddenly brought out into the bright, glaring sunlight, which contracts the pupil so suddenly as to cause extreme pain. By persevering in this very foolish and injudicious as well as cruel practice, the nerves of the eyes become impaired, and if continued long enough loss of sight will ensue.

To see how very painful it is to face a bright light after having been in the dark, take a walk some dark night for a short time, till the eye becomes accustomed to the darkness, then drop in, suddenly, some well-lighted room and you will be scarcely able to see for a few moments in the sudden light. You know how painful it is to yourself, then why have your horse repeatedly to bear such unnecessary pain?

A dark stable is invariably a damp one, and such stables we are not yet willing to put either a valuable working or driving horse in. Give good ventilation, let the sunshine and the air have a chance to effect an entrance, and your stables will be purer and more healthy than if you take such pains to exclude them and the good influence they bring with them invariably.

We must say a few words about watering your horses, for we think that in some quarters light is sorely needed in regard to it. Regularity should be as carefully observed in watering as it should be in feeding horses and all other kinds of stock. We have always made it a point to water our horses invariably before feeding, especially when feeding on dry food, such as corn, oats and hay. Some farmers, as well as other horse owners, water before every feed, except in the morning, at which time we think it more desirable than at any other meal time, for, having eaten their dry grain food and cleaned out the hay from their mangers, they are in need of water before commencing their morning meal, and they should have it. If watered after feeding, let it be done say half an hour afterwards, so as to give time for the grain food to settle. And right here let me say, in regard to feeding hay, that far too much is fed to both work and driving horses during work hours. Our plan is to give but little at morning and noon, and then give a generous supply at night. The horses will then eat what they want, after they have eaten their grain food in the evening, will then take their sleep, and consume in the early morning that part of the hay which they left in

the evening. By feeding this way, you will have your horses do their work far easier and look much better than they would if kept stuffed with hay. A driving horse, especially, should not have much hay during work hours—some horsemen say give none till evening, but we always have ours given a small bunch at the morning and the noon feeds.

The Illustrations

On this page represent two new varieties of wheat, lately introduced. A description of them will be found on page 52.

Prof. Arnold's able address to the Dairymen at Ingersoll will appear in our next issue.

A Few Words About Horses.

Hay and oats make the best feed for horses that are obliged to work hard and regularly. If the hay is cut and the oats bruised or ground, the whole mixed and moistened, the horse will eat his rations quicker, digest them sooner, and thus have more time for resting and renewing his power for labor. Farmers' horses that work little during winter may be kept cheaper by cutting and mixing bright straw and hay in equal quantities, and adding a ration of steamed potatoes or raw carrots. Colts should be fed liberally on good hay—bright clover is best—and bruised oats; give them a roomy box stall in stormy weather and during nights. Litter freely, and do not let the manure accumulate under them. Sawdust or spent tan makes good and convenient bedding; in cities and villages they are often cheaper than straw. Groom horses well, and let them have exercise every day, a run in the yard is excellent. See that stable floors over basements are good and strong. Arrange the feeding racks so that the dust and hay seed will not fall into horses' manes or eyes; some horsemen build their mangers too high, thus forcing the animal to take an unnatural and painful position when eating. Farm horses that are not working should have their shoes taken off, and those that are driven on the road should be kept well shod.

Well Bred Horses.

From a letter by Henry Ware, of Louisiana, to the *Rural World*, we take a brief extract, showing the advantages to be derived from raising well bred horses, and the early training and good treatment of colts:—

"In the first place, well bred horses are generally admitted to be the safest, healthiest, hardest and most intelligent horses. My own experience confirms this opinion, so far as handling the Ethan Allen and Seth Warner stock of horses is concerned. Good qualities will most generally be found in well bred horses. Early training has much to do with the qualities of animals as well as human beings. Well bred colts are generally better cared for, handled earlier, and make the kindest, safest and best animals for all purposes.

The first thing is the blood—the family; next the early training. The well bred horse is not only the handsomest, safest and kindest, but the advantage and pleasure of quick travel is really great, especially to men of business and means. And lastly, the well bred horses will endure more and last longer than the plug.

I am of the opinion that when breeders raise the best families of the trotting horse for actual service, as well as speed, and select horses to breed from of good size and kind disposition, with all the natural gaits for harness and the saddle, with undoubted pedigree, it will pay.

One should begin to handle the colt when a day old. It will soon become attached to you. Under kind treatment it will learn to fear and respect you. Animals of such qualities, with speed and durability combined, will always find a market among ladies and gentlemen of taste and means.

There are some things it never pays to doctor. If you have a sick fruit tree of any kind dig it up at once, and in so doing dig a big hole ready for a thrifty tree next spring.

The Hullet Agricultural Society.

The Hullet Agricultural Society are just about establishing a monthly cattle market at Clinton. The first market takes place on the 6th of March. The society have an annual dinner, and they keep up the old English plan better than any other society in Canada. The dinner takes place on the 6th of March. Go and see how they manage.

A correspondent of the *Rural Home*, speaking of the benefit which birds render the farmer, says: Recently, while at work near a wheat field, my attention was called to the fact that some of the wheat had been picked from the heads in certain parts of the field. As my neighbors seemed to think that the mischief was done by yellow birds, I obtained a gun, and killed one of the supposed offenders. Although interrupted while taking his breakfast, we found in his stomach only three grains of wheat, and, by actual count, three hundred and fifty weevils.

The Difference Blood Makes in Steers

J. B. Latta, Grandview, Louisa Co., Iowa, very briefly gives one instance from his experience in handling steers, illustrating the advantage and profit resulting from the presence of good blood in beeves, and the higher price commanded in the market, as compared with scrubs. Some four or five years ago he purchased a lot of sixteen steers to round up a lot he was ready to ship. Of these, fourteen were good, fair native steers, three years old past, and two were three-quarter-bred Durham, two year old, or one year younger than the natives. None of them were corn-fed, and they were taken direct from the farmer's pasture where they were grazing; placed upon the cars and shipped to Chicago market. The three-year-old native steers were sold for \$48.50 per head, and the two-year-old grades brought \$75 per head.

These figures are suggestive. Had these fourteen native steers been grades like the others, they would have brought \$371 more money, without allowing for the difference in age. When we come to consider the difference in age, however, and

make the proportionate allowance which the selling price indicates for the earlier maturity of the grade steers, we find these native steers brought (\$597), almost six hundred dollars less than they would have brought had they been good grades.

It would seem from this that general farmers who have no thought of going into the fancy or blooded-stock business, could afford to pay a good round figure for a thoroughbred bull, even if the number of steers raised by them be very small. There is nothing strange, in the light of figures like these, that farmers raising native steers complain of hard times. — *National Live Stock Journal*.

Hay, Grain and Water.

Hay and rough feed should be fed in racks; the simpler and cheaper, if durable, the better.

The practice of placing in the racks enough hay to last a week or more is open to objection. If in the yard it is damaged by the sun and storm; if in the shed it becomes tainted with the breath of the stock; then the stock will select the best first, which prevents even feeding. As a rule it is preferable not to fill the racks with hay and not put in more than enough for the day.

For the farmer with good hay, corn in the

ear is the cheapest grain and answers a fair purpose unless for special feeding. It seems to be the general experience that fine cornmeal ferments in the stomach, and unless feed with fine-cut hay or straw, is less profitable than whole corn. Where corn or cornmeal is used it is desirable to give a mess of wheat bran at least twice a week with a little salt in it.

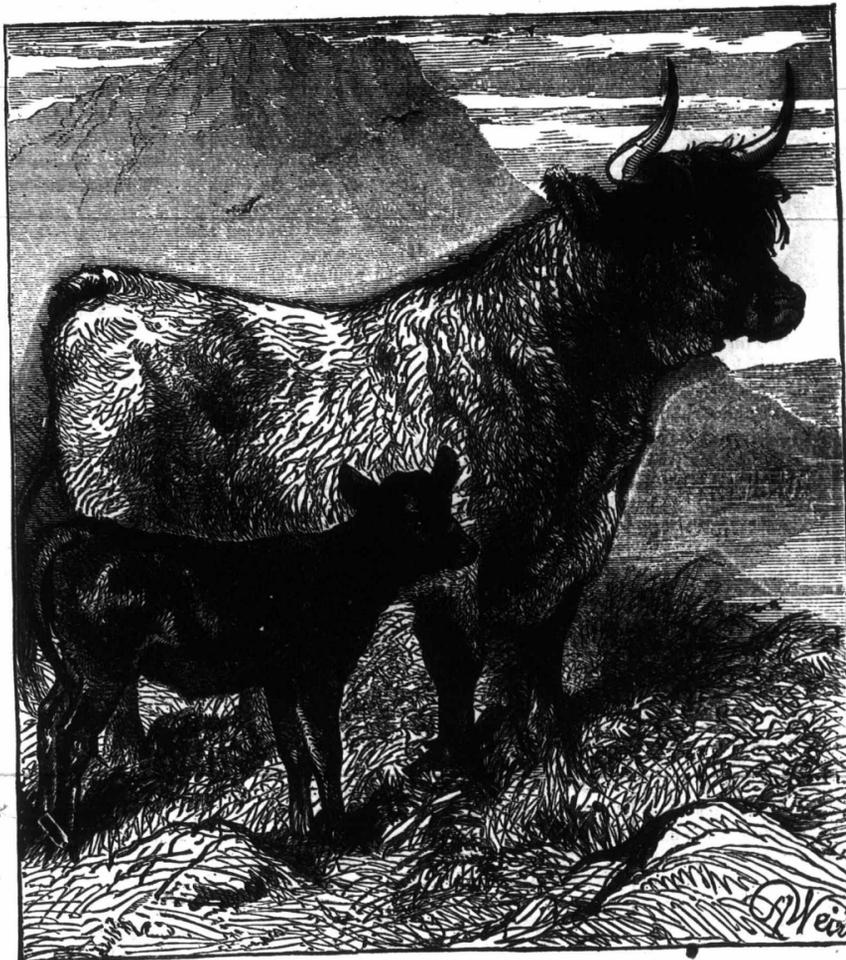
We have a poor opinion of a creek or run for winter watering of stock:

1st. The approaches are deep with mud or covered with ice to the great detriment of the stock. Frequently fear of the one or the other deters an animal from taking water as often as it requires.

2. The water is too warm in the summer and too cold in the winter.

3. Through an alluvial soil, surface water, unless in a rapid stream, retains quite a portion of the poisons resulting from vegetable decomposition.

Water the stock twice per day with water fresh from the well when the reservoir system is not in use.



THE KYLOE WEST HIGHLANDER.

Stock.

The Kyloe or West Highlander.

There is a breed of cattle that we have not yet given a representation of to our readers, and which might be advantageously introduced into some parts of our vast and greatly diversified country.

The Kyloe or West Highlander is well adapted to the rough pastures of the districts where it is bred. It yields, at four or five years old, the very best of beef, when fed for some little time on more southern grazing lands, to which they are annually driven in large droves. Their characteristics are long, upturned horns, a shaggy coat, of a yellow dun, or black color, and well-made, compact little body. They are natives of Scotland, as their name implies, and are rarely found out of that country.

Garden, Orchard and Forest.

Seasonable Hints—March.

BY HORTUS.

PRUNING.—There always is more or less of this operation to be performed every season in each well-ordered orchard and garden, and it should receive more careful study and attention from the owner thereof than any other, for on the discriminating and intelligent use of the knife and saw much of the future form, vigor, fruitfulness and longevity of the trees depend. Many a fine orchard is prematurely destroyed by one careless and ignorant pruning. This month we consider to be the best in the year for this operation. Care should be taken when cutting off a branch not to cut too close to the trunk, nor to leave a stub

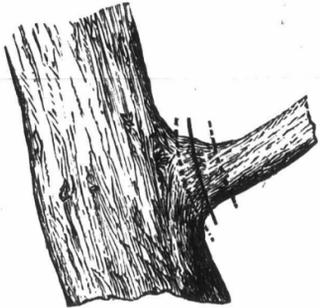


Fig. 1.

sticking out therefrom. The dotted lines show too close and too long a distance; the black line shows the proper place to cut.

Remove all branches interfering or rubbing against another, all dead limbs and water-shoots. A good scraping of the loose bark on main trunk and branches will improve the appearance of the orchard and add to the health and vigor of the trees, besides destroying eggs and cocoons of insects. To preserve or secure a pyramidal form in young pear trees, dwarfs and standards, shorten back last season's growth to one-half on the lower branches, those higher up more so, finally cutting back the leading branches and leader to within two or three buds. This will give a renewal of young wood for fruiting, and increase the size and quality of fruit borne thereon. Plum trees should be shortened in well if they have made a strong growth the past season, to prevent them from having long, slender branches, easily broken with the wind when bearing fruit. Currants and gooseberries require the wood thinning out and cutting back to produce plenty of young wood for fruiting. Raspberries should have all the dead canes removed and those left cut back to four feet.

MANURE liberally with good stable dung, lime, ashes or any other fertilizing material, to be forked in when the frost is out.

HOT BEDS are useful to raise young plants for the garden and early salads for the table. They are a great convenience to those who have not a green-house, and are of simple construction and easily managed. Select some dry situation, sheltered from the north and fully exposed to the sun. Procure enough horse manure, with plenty of litter; mix it well up and throw in a pile for a few days, until steam escapes, when the mass should be thrown over again and left a few days longer, after which place it where your bed is to be, from eighteen inches to two feet in depth, treading and beating it firmly as you put on the manure. Having placed your sashes on, allow the bed to stand a few days to let the steam and strong heat escape. Then place on six inches of good soil and your hot bed is ready for seeds. Give some air in the middle of the day by tilting the sashes up a little.

HEDGES.—The question of hedges or live fences is a particularly interesting one to the general public, but to the farmer, who with his broad acres of land requiring fencing and the annual decrease in his woods wherefrom he derives his supply of rail timber, it is one of great importance. What makes the best hedge is the next question. Honey locust is much recommended and forms a good hedge in the vicinity of St. Catharines and south-western portion of Ontario, but in the neighborhood of Toronto, to the north and east, it is not hardy enough to thrive; it grows and lives, but soon becomes scrubby and dwarfed. The common Berry we find from experience to make a capital hedge, and the opinion of a gentleman living near Aurora, who has almost miles of different kinds of hedges, is that it is the best hedge plant for Canada, that is, for defensive purposes. Being very hardy and endowed with a nature to thrive under almost any circumstances, it soon presents a barrier sufficiently formidable to prevent man or beast, or even a mouse, from penetrating it. It makes a beautiful ornamental hedge as well, bearing in early summer clusters of bright yellow flowers, followed by pendant branches of scarlet berries, which hang late into the winter. The Buckthorn is claimed by many to be the best hedge plant, and we think it is. It has all the desirable qualities to recommend it for extensive trial—hardy, rapid growing and easily transplanted. Its leaves and bark have a pungent, bitter taste, which renders it free from attacks of insects and the browsing of cattle. Have the ground where you wish to plant a hedge of the foregoing in good condition—plowed and drained—by having level before planting. Much trouble may be saved in the future in having a straight and level top to your hedge. Procure two-year old plants, if possible, cutting them back with an axe and a block to about six inches of a top; set your line and dig out a trench of sufficient depth and width to suit the roots. With a bundle of plants prepared, one person can place them against the straight edge of the trench as fast as an assistant can put in the soil. Half fill the trench; then give them a firm treading, finally filling with nice loose earth. The plants should stand about three to the foot. Place a good mulching of manure on each side of the hedge, to retain the moisture and keep down the weeds; a hoeing occasionally through the summer, to loosen the soil, will greatly benefit them. To form a strong hedge, keep down the centre and encourage the side growth; this will also secure a good bottom. An annual cutting in the fall will suffice to form a defensive hedge.

In figure 1 we give end views of hedges showing the various forms practiced; we prefer the centre

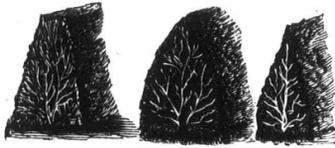


Fig. 1.

one, however, as being the most natural. For making ornamental hedges quite a variety of plants or shrubs present themselves. We will, however, confine ourselves to mentioning the following as being the most generally planted:—Privet, suitable for small places, borders of walks, &c.; Horbeam, a variety of beech, makes a capital hedge; Native White Cedar, Hemlock and Norway Spruce. The evergreens mentioned all make beautiful hedges with but little care; the White Cedar, with but an occasional clipping, soon forms a symmetrical hedge. Hemlock is so difficult to transplant that hedges of it are scarce; it forms the most graceful of any, however, wherever it succeeds. The Nor-

way Spruce makes the best of evergreen hedges; perfectly hardy and growing freely on all soils, it is deserving of extensive cultivation. Bearing cupping with impunity, it is susceptible of being trained into any form the cultivator might fancy. In fig. 2 we show an archway in a hedge; a rustic

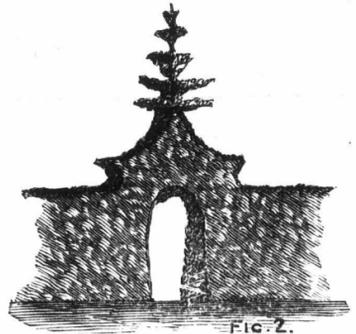


Fig. 2.

gate would complete the picture. Lovers of the grotesque may leave plants at intervals in the hedge for the purpose of training into shapes of fountains, cones, columns, &c., as delineated in fig. 3. In planting Norway Spruce for hedges, secure plants twice transplanted; a good size

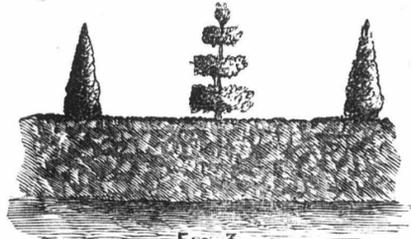


Fig. 3.

would run from eighteen inches to two feet six inches. Be sure to order them of a uniform size as near as possible; two feet apart in hedge will be about the right distance.

ROSES.—Everybody loves a nice rose, and for the benefit of those intending to plant, and who are not familiar with the varieties, we have made the following little list of hardy roses:—

M'me Plantier—Pure white, very double.
Persian Yellow—A bright yellow rose, very double, with small foliage.
Salet—About the best moss rose there is; bright pink.

Duc d'Aunxale—A free blooming, double crimson rose, belonging to the hybrid perpetual type.

La Reine—Bright rosy pink, very double; H. P.
Gen. Jacquineist—Very large, bright crimson rose; free bloomer; H. P.

The above six are old kinds and about the best, combining variety of color with free blooming and other desirable qualities.

PLANTING TREES.—Be sure to fill up any blanks there may be in your orchard or garden, for in planting trees it is not the cost of them you should look at; it is the time—"a season lost cannot be regained." Also, trees improve your place by their appearance, and enhance the value of your property. So, at all events, plant a few trees at least, the number depending upon the space desired to ornament—not crowded together, but naturally and judiciously, allowing glimpses of distant views, and yet a portion conveniently near the residence for shade. Clustered in the nooks and corners, let the various flowering shrubs and hardy flowering plants perfect their bloom in such succession as will give an added charm and continuous surprise each day. Along the borders of the walks determine to plant some flower beds of neat design, to be filled, when the proper season arrives, with choice flowers. By such means we make home dearer to ourselves and children, and make attractions around the spot that time will not efface.

Small Fruits.

By E. N., Drummondville Ont.

The directions given for preparing the ground, and for planting hedges, which appear in my article on honey locust hedges No. 2, are equally applicable to small fruits, and need not be repeated. A root crop with manure is the most suitable previous crop. Deep ploughing and clear culture are very important, and are economical in the long run. In some soils deep ploughing is impracticable or injurious, and such soils are not suited to small fruits. In annual crops it is often important to keep the best soil near the top, but small fruits are perennial and will be sure to find the best soil, however deeply it may be turned under. Previous to planting the ground should be well pulverized and levelled and smoothed by using a roller or preferably a planker. Sufficient time should be given to this part of the work, as time saved here is lost several times over in the planting and cultivation afterwards. After the ground is nicely smoothed it should be marked at a proper distance both ways by means of a hand marker. Even if cross cultivating is dispensed with—a plantation looks much better with rows running crossways. Strawberries are usually planted without crossmarks, but some good cultivators plant even these so as to allow of cultivation both ways.

When planting time arrives strike a furrow along the mark which indicates the place for each row of plants. For this purpose a narrow plough drawn by one horse is most suitable. Farrows should only be turned as the planting proceeds, which secures nice fresh soil for planting purposes. Strawberries, Raspberries, Currents, Gooseberries, Grapes and cuttings may be planted along the perpendicular side of the furrow, according to directions given for honey locust hedge plants. Plants too long to be planted this way are too large for economical use. Before planting Blackcap Raspberry tips, it is better to have some one pass along the rows and partially fill the furrow at each cross mark. At each of these points a plant is dropped and covered with two inches of earth, care being taken to preserve intact the young sprout, which can easily be seen. For planting strawberries more speedy methods are commonly practiced, but the furrow method is perhaps the best. Often the planting is done before the final filling up of the furrows, any of the finer manures may be scattered along beside the plants, and will thus be in a position to do the greatest possible amount of good. Common course manure should not generally be applied at the time of planting.

Salt may be applied to the best advantage as above indicated. White grubs and other worms are thereby turned from their evil ways.

WHAT BERRIES TO PLANT.

Orders for nursery stock of all kinds should be made up, and forwarded to nurserymen before spring opens. In selecting varieties, the novice may often make serious mistakes. It would be very easy to select a list of small fruits, which would in the end prove a loss as a whole, while a different selection might give large profits. The varieties which were extolled when berry culture was in its infancy are superseded now. The newer varieties which have not received a general test are also to be avoided when profit is aimed at. Among strawberries Wilson's Albany stands at the head of the list as a market berry. The Philadelphia occupies the same position among red raspberries. The Mammoth Cluster is the best blackcap raspberry so far.

Probably most of our cultivators would have made more money by planting these three kinds only. Although these varieties for productiveness

and adaptation to a variety of soils are found to be generally profitable; they are not equal to many others in some of their characteristics.

Nearly every grower will aim to have an assortment or varieties, from early till late, and some berries of better quality or appearance than those above named.

Seth Bayden, Peaks Emperor, Col. Cheeny, and many others give sweeter berries than Wilson's Albany.

Kentucky is later and better.

The New Dominion is a very late but not a very sweet berry. It is very large, and a handsome color, a beautiful scarlet.

The Philadelphia red raspberry is lacking in size and color; nor is it remarkable for firmness or good quality. It will thus be seen that there is room for new kinds, which shall be as hardy, and productive; while they exceed it in size, appearance, firmness and quality. There are a great many promising new varieties, but none of these have yet proved themselves more valuable than the Philadelphia, as a berry for the millone.

The Clarke has been largely planted here. It is a good-sized, handsome berry, of very good quality. A firmer berry would be better for shipping. We do not often need to ship red raspberries, as home demand is very sharp.

The Franconia does not succeed here. In the few isolated spots where it does succeed, it would pay to grow it as the berry is very large and firm, and sells to good advantage.

Ontario Fruit Growers' Association Winter Meeting.

At the winter meeting of this Association held at Hamilton on Feb. 6th a variety of subjects were discussed. We give only a brief outline of the information elicited.

The canker worm is a small measuring worm, which hatches early in the spring, and when they are regularly established proceed to denude the trees of their leaves. About June 15th they drop down and enter the ground. During the warm days of winter and spring following, the perfect female insect, which is wingless and of a drab color, crawls up the trunks of the trees (usually apple) and deposits her eggs, in patches, upon the slender twigs. This pest as far as we know has reached only a few localities in Ontario. Orchardists should, however, be on the alert as they may exist in small numbers for a year or two before their ravages attract attention.

Two classes of remedies are indicated.

1st. The application of poisons to the leaves by the use of a suitable apparatus. This is expensive and objectionable.

2nd. The application of a band to the body of the tree which shall prevent the upward progress of the wingless female parent.

The application of a band of cloth, with its outer surface covered with some material that will continue sticky at ordinary temperatures, and not be removed by showers is what we want in this case. Tar hardens too soon. Printers' ink is useful, but does not endure very long. Preparations of kerosene are likely to kill the patient, which, in this case is the tree. Castor oil and rosin melted together in proper proportions, which makes a very sticky material was suggested. No one present had tried it sufficiently to decide how it would act in mild winter weather. Leaden troughs filled with oil, and properly attended to, are effective and expensive.

The codling moth received some attention. Some new styles of bands were described. One kind consisted of waterproof paper, and an enclosed strip of what is ordinarily known as cotton flannel. This fastened about the tree, is said, to

make a more effective trap for these insects, than the bands heretofore used. The reader will remember, that the codling moth is the insect, which in one of its phases is well-known, as the apple worm.

The canals which it forms within the apple, often causes it to ripen prematurely.

The yellows in the peach tree, has invaded Ontario on the Niagara frontier. Plenty of it at Drummondville, and cases reported at Grimsby. This disease is generally first noticed in the premature ripening of the fruit, which is very highly colored, and remarkably bad eating.

Cure.—Cut out the affected limbs, or if necessary, the whole tree, and burn them.

Willow Culture.

The osier or basket willow, (*Salix viminalis*), is quite extensively used by basket factories in several sections of the country, but, strange to say, it is very little cultivated. The material worked up is brought from Europe; why one can hardly tell when he reflects that the willow succeeds as well in America as in any other part of the world, and that, all things considered, it would undoubtedly be one of our most profitable crops. In England and Scotland, where it is quite extensively grown, it yields an annual crop worth from one hundred to one hundred and fifty dollars to the acre, and calls for but a very small outlay for labour. In this country it would do much better owing to the fact that it would command better prices—the producer would get the price paid in England with a large portion of the transportation cost added on. Under favorable circumstances the crop will yield near two tons to the acre, and it is now worth, in New York, about \$150 per ton.

The osier willow now used in this country, most of which is imported from France and Germany, costs us near six millions of dollars annually. The demand seems to be constantly on the increase, and if the willow could be obtained conveniently there would, no doubt, be double the quantity worked up that is now worked. Under all these circumstances, who can explain why we do not cultivate willows? Instead of sending six millions of dollars abroad for the rough material we ought to-day to be supplying the whole world with baskets and basket stuffs. The crop is among the easiest grown, and the most profitable, as well as the most certain. We have thousands upon thousands of acres of land exactly suited to the growth of willows, (and suited to nothing else), that is now not worth a single cent to us. Like most other members of the willow family, the osier delights in a low, wet soil, and hence is the very thing for our swamp lands, and lands subject to overflow. There is scarcely a river in our country along which may not be found immense quantities of good lands that are not cultivated on account of the fact that the water rises over them two or three times in the course of a year. These overflows would not injure the willow, but on the other hand would do it good by keeping the lands up to a high stage of fertility. And yet we ship from across the ocean six millions of dollars' worth every year! No wonder Charles Dickens should give it as his opinion that we were "indeed an eccentric people!"

The osier willow grows as readily from cuttings as do any of our common wild willows. The plants are usually set in drill "rows" about four feet apart and about two feet asunder in the rows. Once fairly started and there is nothing more to do than to harvest the crop, the willows keeping all other growths choked out. In the course of the season the young sprouts run up to the height of from four to six feet. These are the crop. They must be cut off smooth to the ground. A plantation is said never to wear out—the older it gets the better the yield.

There is no question as to the advantages presented by this country for willow culture. The crop is grown to some extent in the New England States—it ought to be grown largely in every State. We ought to supply the world with willows at fifty dollars a ton and make more money by the operation than we make on either wheat, corn or cotton.

[We have often wondered why more wicker work is not in use in Canada, the numerous forms of wicker baskets in use in England is surprising. We understand there has been a good demand for all the osier willow that has been raised in Canada.

The foregoing account of yield and profit might tempt some of our cultivators to reap a lucrative harvest, as well as our cousins.

We will send a bundle of cuttings by mail to any of our subscribers that will send us a new paid subscriber. They grow very easy, any one would soon have enough to plant an acre.]

Every Farmer His Own Gardener.

The Kitchen Garden deserves more attention from our farmers than it has generally received. The products of a good garden are worth all that they cost, for the single purpose of supplying the farmers table with that variety of food which the mind and body require. It is no uncommon thing to find the table of a well-to-do-farmer very scantily supplied with vegetables. Beyond that great staple the potatoe, there is seldom any vegetable on the table, year in, and year out. Sometimes a little variety is obtained by cooking a few of the field peas when green or a few ears of corn, which the good wife gatherd, robbing the farm stock of their course fair, that she may give a little variety to the table. The delicious wrinkled varieties not only more palatable but more nutritious, are wholly unknown, and the same with all the other varieties of the well managed garden. A considerable variety of food best develops the physical part of our system. A well-stocked and well-kept garden is the means of more intelligent and more refined yeomanry.

Besides this, the influence of the garden—and the vegetables it yields—upon the minds and hearts of the children of the farm is fruitful of good. Too little is done to make home attractive. It should be the most lovely spot on earth to all its inmates. Be it ever so homely "there is no place like home." Is it not better to make things pleasant to the eye, and dear to the heart, that shall administer enjoyment to mind and body, and link the thought of it in the memories of his children with every comfort, and every joy. Who can wonder that the children of some of our cheerless farm houses have no pleasant thoughts of home, and leave it as soon as they are fledged? No wonder they seek their enjoyment elsewhere, no wonder that so many sons of farmers leave the farm disgusted with its labors, and all they have known of a farmer's life. There is no reason in Canada why our farmers should not enjoy every real comfort, live in beautiful homes, and have their tables supplied with all the leading vegetables grown in our climate.

Another thing is this, a well conducted garden is a paying thing. Vegetables may be grown in excess to the wants of the farmer, and the surplus will always find a ready sale in our city market, and as a general thing at very good prices.

Nearly every seedsman in Canada publishes yearly an illustrated and descriptive catalogue of field, garden and flower seeds, with full directions for sowing and &c., free to all applicants, so that no farmer need excuse himself for not having a good kitchen garden. Nearly every variety worthy of mention are quoted, so with a little practice every farmer can become a successful grower of garden products.

The soil which is best suited for the production of vegetables is what is called a rich loam fully a foot in depth, with a sandy or gravelly sub-soil through which the surface water readily filters. The above kind of soil is the best suited, but every farmer is in a better position to have a good garden, than many who live in the cities on account of having manure in abundance, which is the most essential for all garden purposes. When the land is very wet it should be well drained, and you will find by so doing it will repay you itself thrice over. Be sure and plow the land thoroughly, and then well harrow it until every clod is crushed, and the soil made fine and mellow. Be sure and manure with an unsparing hand.

Horse manure is considered the best, but it should be exposed as little as possible. Mix it with other manures, and cover it with absorbents as soon as possible. That of the hog comes next, and the cow is at the bottom of the list. The richer the food given to animals the more powerful is the manure.

Superphosphate of lime, or bone dust are very essential, both to the farm and garden. As it seems by the use of one kind of manure—constantly the plants fail to derive the proper nutriment from the soil, but by changing from one to another the fertility is better kept up. I have found ashes to be of a great benefit.

With soil thoroughly underdrained, deeply pulverized, and abundantly supplied with manures, the foundation is laid for successful gardening.

I am one of the many who have lived year after year upon field corn, field peas, in fact, everything from the field. But having catalogues sent me year after year, from different seed houses, I concluded to try a vegetable garden, and after giving it a fair trial, I now send my two dollars every year for a supply of garden seeds which supplies my family the year round, with the exception of potatoes; and I now look upon a kitchen garden as a pleasure, where I used to condemn it entirely. Now a few words to the

FARMERS WIVES.

Ladies should cultivate flowers as an invigorating and healthful exercise, both for the health of themselves and also for their children.

The desire to make one's home attractive and pleasant, is prominent in the mind of every right thinking person, not merely for his or her own enjoyment, but more for the sake of their children.

Long before a boy or girl is able to do farm work they could be helping their father or mother in the kitchen or flower garden.

As a general thing when you ask a farmer's wife why she don't have a nice flower garden the answer is invariably, "I have no time." Now the old adage is "where there's a will there's a way," and every woman could spare say two hours a day. Make a start and you will find by the end of three months that your labour is not all in vain. What is more delightful when a lady friend calls on you, you invite her to see your flower garden, and see how much pleasanter the time passes away.

A beautiful garden tastefully laid out, and well kept, is a certain evidence of taste, refinement and culture.

It makes a lowly cottage attractive, and lends a charm to the stateliest palace.

An English writer lately visiting our country writes:—

I can conceive of nothing more drearily than to live in the country and have no garden. To have no garden, is to take the poetry and nearly all the charms away from country life. To have a garden is to have many friends continually near.

I have little faith in American women becoming farmers—holding the plow, wielding the spade or the shovel, but I do know that all the rest of the work can be accomplished by women, if they possess a love for the beautiful.

There lies the trouble—few of our children are taught to garden. If they possess a natural taste for the pursuit, sometimes it is gratified, but not always.

The first thing necessary after well preparing the soil, is to purchase garden tools, a small set, comprising, a rake and hoe on one handle, a trowel and a spade are very essential. With their aid much light work can be accomplished.

A watering pot with a large nozzle, and a fine sprinkler is also required. With these implements every woman can be her own gardener, and not only raise all the flowers she may require, but also contribute a large share of the vegetables that are always welcomed at the table during both summer and winter.

Every morning dig one or two beds according to the size, and continue the work until all are cleared up. Then commence again, and this prevents the soil from becoming baked, and lets the air and moisture enter the earth and nourish the tender roots.

The next thing is the selection of seeds which is a very important matter and on the wisdom of the choice success or failure may depend.

Those who have had little experience should invest cautiously and in the more hardy and popular kinds, such as asters, balsams, stocks, petunias, zinnias, &c., with a few of a more tender kind just for trial. A half dozen of flowering plants well cultivated will give pleasure, when a hundred neglected or ill cultivated will be a source of pain.

Plant with care and kill all weeds, and you will never regret the small investments required to commence and continue a garden, but will become more and more enamored with the occupation and will yearly increase your stock and your pleasures.

Novelties in seedsmen's catalogues are frequent visitors, and often some varieties give satisfaction.

But my advice is to venture on one sort at a time, and don't feel disappointed should they fail to realize your expectation, and turn out contrary to what it is represented.

ANATUER.

Western Ontario Dairymens' Convention.

The thirteenth Annual Meeting of this Association was held at Ingersoll on 15th, 16th and 17th February. The Ontario Association has been divided into Eastern and Western Associations. The President, after referring to the history of the Ontario Association, stated that a debt of \$12,000 had been incurred by them in their efforts to have the dairy interests of the country properly represented at the Centennial Exhibition. This burden they are endeavoring to have the Government assume.

An interesting paper on the "Past, Present and Future of Cheese and Butter" was read by Mr. Real, of New York. Dairying he showed continued prospering while all other interests are depressed and satisfactory results must continue if dairymen produce first class articles of cheese and butter.

In reply to a question by Mr. Weld of the FARMER'S ADVOCATE, Prof. Arnold said, in his experience white oak firkins were preferable to any other in which to carry butter long distances to market; glazed crocks for short distances. Tin was objected to because it was almost impossible to get it pure. Firkins should be scalded in boiling brine, and the brine allowed to cool in them. The butter that took first prize at the Centennial was damaged two inches in depth at the bottom of the firkin. The timber was at fault. Good butter had been shown at the Centennial even four years old; it had been kept in a pure tin can.

The reason that some makers produced less cheese from a given quantity of milk was discussed—some producing a pound of butter from ten pounds of milk, others taking more than ten pounds. An instance was given when it took less than nine pounds of milk to make one pound of cheese, and that of superior quality.

Mr. Farrington showed that there was plenty of room for more dairymen to embark in the business, but it is only the best that will succeed. Some dairies, for a succession of years, have annually shown a continuous difference in the yield of milk per cow and per acre of fifty, and, in some instances, one hundred per cent. This must proceed from a difference of skill and energy; and the vast difference in value between a good cow and a poor one seems not to be generally understood. The average yield of milk in various dairies was about 4,000 pounds to the cow; the average value was a cent a pound. The best dairies were fully \$35 more to the cow than the poorest, and \$20 more than the average. We knew one dairyman produced \$10 worth of milk to an acre, and fifty produced \$5 worth. The difference was mainly attributable to—first, difference of milking qualities in dairies; second, difference in the milking and the care of cows; third, difference of water and pasture; fourth, difference in feeding, not only in the winter but in the fall and spring months. He showed that grain remained about the same price that we used to get twenty years ago, but our cheese brought about double what it brought then.

Prof. Arnold gave an address on cooling milk. He gave accounts of several artificial means by which milk might be cooled, but considered the natural cooling the best. Keep the cows cool, if not by shade trees by artificial shade.

Mr. Lossie provided all his patrons with a cooler—a trough with water. It has been found very efficient and has given a great deal of satisfaction.

A resolution, moved by Mr. W. Weld, seconded by Mr. Casswell, was passed, recommending that trees be planted along the roads where cows are driven, and in their pastures, as a means of increasing the value of dairy products.

Rev. W. F. Clarke delivered an address on

DAIRY BREEDS OF CATTLE.

He said that all breeds of cattle were in one sense dairy breeds, inasmuch as they all yielded the lacteal secretion which is the basis of dairying. The Ayrshires have always been bred to produce a large yield of milk. A good Ayrshire cow could be obtained at a reasonable price. The adoption of the Ayrshire for the dairy would give the following results:—1. A greater quantity of milk, butter and cheese for the food consumed. 2. Greater uniformity in the general character of the stock from its inherent or hereditary qualities. 3. Better symmetry and constitution, and greater ten-

dencies to gain flesh when not giving milk. The Ayrshire was often called the poor man's cow, being hardy, easily supported, and converting a large proportion of the food given it into milk. The general estimate of the dairy performances of the Ayrshire was as follows:—Milk, 600 to 800 gallons a year, affording 250 pounds of butter or 500 pounds of cheese. For all practical purposes the breed occupied the highest place among dairy breeds of cattle.

Mr. Weld said it would be well to ascertain something about other breeds. The Holsteins he understood would give a greater quantity of milk than any other, but of the poorest quality. The Jerseys gave a smaller quantity of milk, but of the richest quality. The butter from it was of a finer and richer flavor than that produced from any other class of animals.

Prof. Arnold thought an injustice was done to the Holstein in representing the milk to be so poor in quality. It is excellent for cheese and butter, yielding, on analysis, a fair per centage of fat.

Mr. A. A. Ayer spoke on the subject of marketing cheese. The market required a new cheeser that is: one that appeared to be new in other words, a mild cheese. A large proportion of the cheese from this district was sent to England on through bills of lading, and there was the loss of weight on their arrival. Some of the factories in Canada turned out cheese as fine as any in the world.

Mr. Allison moved that this meeting express its satisfaction with the action of the Ontario Government, in establishing a dairy, conducted on the factory system, in connection with the Model Farm, as it is believed that such dairy properly conducted will be of invaluable benefit to the dairy interests of the country, and this meeting has the utmost confidence in Prof. L. B. Arnold, as one whose great ability and practical knowledge on all matters connected with the manufacture of butter and cheese, qualify him to take charge of and make successful, the dairy part of the establishment, and we strongly recommend that his services be secured for the position.

The resolution was seconded by Mr. Lossee, and supported by other gentlemen.

Mr. Weld objected to the resolution and moved that it be laid on the table. He thought that due notice should have been given, and that the question should have been taken up before so many of the members had left. He spoke to the following effect: The Agricultural College was never brought forward for the interest of farmers, or by them, but to make a berth for a certain person who had worked for political purposes; also to check private enterprise and obtain more political prestige. The Bill was hurried through Parliament, and the land and building material hurriedly purchased. The overthrow of the late Government destroyed the first plans. The ground and property were disposed of, and the present site selected, no doubt for political ends, as this site is not as good as the one first purchased, the subsoil being so irregular and uncertain from clay ridges irregularly running through it and quicksand and gravel irregularly cropping out, that no fair test could be made on it without first making a foundation or lower strata, which would cost far more than all that has as yet been expended on it. Even for dairy purposes more satisfactory returns would follow by purchasing a suitable farm.

This institution, as far as the farm is concerned, should be and could be made self-supporting. A company of farmers could do much more good than such a scheme as this. Farmers are not beggars; they can pay for what they want. The complaints of hard times and high taxes need not be increased by this means. The dairymen are wealthy, and by uniting can have a Model Dairy where one acre is worth two at Guelph for dairy purposes. It is easy to recommend the expenditure of money. He was satisfied that a good dairy under the charge of Professor Arnold would pay; he (Mr. W.) would join the dairymen, and put down one-fourth of the money to purchase a suitable farm.

In reply to some remarks, Mr. Weld said that he had not acted for either political party; he had condemned the steps taken by both the existing and the late Governments. It was for the interest of farmers and the country that he wished to act.

Other topics were discussed, viz.:—The best salt for dairy purposes; Adaptation for the business; Returning the whey in cans; The establishing a dairy in connection with the Model Farm; The injury to the quality of cheese from feeding turnip-tops and turnips in the fall; and the hauling milk to the factory once or twice a day.

The Finance Committee reported that the receipts for the past year had been \$1,239.14, and the expenditures \$805.30, leaving a balance of \$348.84.

East Ontario Dairymen's Association.

The first annual Meeting of the East Ontario Dairymen's Association was held in Belleville, Feb. 21st and 22nd. After the adoption of the Report of the Business Committee, Mr. Graham, President of the Association, delivered a brief address on the history of dairying in Eastern Ontario.

Prof. Bell, then delivered an address on "The Past, Present and Future of the Dairy Interests of Canada." The trade during the past year had been satisfactory, though the quality, on the whole, was not up to the average. This was attributed by the buyers to the efforts of the dairymen to make a cheese which would cure more rapidly, owing to which a great deal of immature cheese was sent to England and arrived there in poor condition. The western section had been more fortunate during the past year than the eastern section, as the drought in the latter part of the country had affected the product materially, though prices had been fair. On the whole the present condition of the trade was good, and the future promising. The total cheese product of the Province, for the past year, he estimated at 44,000,000 pounds, and of butter, 13,745,000 pounds, there being a decrease in the quality of both articles as compared with the previous year. The butter was in condition; much the same as cheese was 16 or 18 years ago. He advocated the holding of Township Conventions for the information of the butter manufacturers; the establishment of butter factories; the making of butter in winter, and its shipment weekly, in small packages, and its careful inspection, and proper branding, so that it might not be mistaken for American.

The President expressed fear that the success attained at the Centennial was likely to prove detrimental, as cheese-makers and presidents of the factories seemed to think that there was nothing more to learn. He warned them, however, that the art was a progressive one.

Mr. Ashley remarked that better cheese is made in the West than in the East, quality rather than quantity being the desideratum in the former section.

Prof. Wetherall, of the *Live Stock Journal*, delivered an address on the breeding and feeding of dairy stock. In order to have a good breed it was necessary to secure a bull of a good milking family, and by raising the heifer calves, a superior breed would be secured. In the course of a few years the most profitable dairy cows had been bred from shorthorns, and from shorthorns and Holsteins. A cross breed would produce more milk than a thoroughbred. Heifers should be bred when two years or two and a half years, as they made better milkers than those bred later. After giving some instructions as to the treatment of cows during and after calving, he proceeded to notice the characteristics of the various breeds of cows as milkers, concluding that the larger breeds gave more milk in proportion to the amount of food they consume, that do the smaller breeds. He advocates feeding cows in the stable instead of pasturing in the fields, and also the weeding out of the herds of all unprofitable cows, which form one-third of the total number.

Hon. X. A. Willard regarded the future of the trade as promising, as good cheese sells readily in the English market. Therefore, he advocated the making of the best qualities of cheese in which improvement could be made. Oleomargarine butter was proving a strong competitor for inferior butter, but could never compete with fine butter; and he advocated the making of butter in winter, as the work can be easily performed, and the product will realize the best price. He advocated the holding of dairy fairs in connection with the convention, where the merits of exhibits could be discussed. In discussing the quality of cheese he advocated the making of a fine cheddar to suit the English market, and attributed the inferiority of American cheese to the defective curing rooms.

Hon. Mr. Lewis said the West had the advantage of the East in winter dairying, having cheap grain. He did not think winter dairying could be made to pay in the East, and believed that winter dairying could be adapted in the West, he advocated the continuance of the present system in the East, so that the dairymen of both sections would put their product in the market when it was most valuable.

Prof. Stewart, of Buffalo, took the opposite view, holding that he could produce butter more cheaply in winter than in summer.

On the second day Mr. Hoxie, of Wilksboro', New York, read a paper on Holstein cattle as dairy cows, the characteristics of which he described at considerable length, claiming for them superior milk production to any other breed. The milk of Jerseys and Devons was superior to that of Holsteins for butter making, but that of the latter was superior for cheese making. They were also good beef cattle maturing earlier than any other breed except the Shorthorns, and considering all their qualities they are the best cattle for farmers' use.

Prof. Arnold delivered an address on "Acid and other Processes of Cheese Making from Practical Experience."

Prof. Stewart, of Chicago, delivered an address on "Milk Production and How to Obtain the Best Results from the Dairy." He recommended the mixing of straw with clover hay for food, and the feeding of oil cake and straw, and bran and straw, which mixtures were as good as hay and cheaper. Oats and peas mixed formed one of their best soiling crops, and he found an advantage in using fodder corn in conjunction. He recommended corn meal as being cheaper than hay, as also was oil meal to feed to a certain extent, one quart of oil meal per day being enough.

The officers of the Association for the ensuing year are as follows:—President R. Graham, Belleville; first Vice-President Daniel Vandewater; Directors, M. McPherson, Ira Morgan, Charles Grass, Henry Ostom, Platt Hinman, R. Craig; Secretary, Harford Ashley; Treasurer, H. A. Daly.

Nut-Bearing Trees.

The Committee appointed by the Fruit Growers Association of Ontario for the purpose of examining the various nut bearing trees growing on the property of G. H. M. Johnson, Esq., Chief of the Six Nation Indians, report:—That this lovely natural park is situated on the east branch of the Grand River, in the township of Onondaga. The land rises from the river to the Chief's house in three broad and natural terraces of seventy feet or more in height. The various kinds of nut-bearing trees were growing and bearing in equal luxuriance on each of the terraces. There were growing on the estate some 800 walnut, 300 butternut, and about 200 hickory trees of various kinds. Many of them are noble specimens—especially the walnuts. One upon the terrace below was really a majestic tree, with a large, massive, globular head of 120 feet in circumference; the lower branches nearly touching the ground and head rising to at least 40 feet in height, and every branch drooping with its load of large fruit, some specimens measuring eight inches in circumference.

There are various opinions as to the market value of these nuts as we now see them in their purely wild indigenous state. But when we consider that all of these nuts, viz., walnuts, butternuts and hickory nuts, show a disposition to vary, so much so that scarcely two trees bore fruit exactly like their fellows of the same species; and when we remember, also, that the English walnut grows and bears fruit in a few favorite localities in Ontario, surely no one will doubt the value of a walnut that should be equal in size and thinness of shell to the English walnut, and as hardy and productive as our native black walnut. With such materials to work upon, who can doubt that in the hands of our skillful hybridists this desideratum will be achieved. When we consider the rapidly increasing value of the timber of these trees, if for nothing else, we have no doubt that it would be a good investment for many a young man to plant walnut trees on their sloping river banks that are too steep for cultivation. There are tens of thousands of farms in Ontario that would be very much improved, both in real value and appearance, by the planting of the various kinds of nut-bearing trees we have mentioned. The size and situation of the house, the position of the land and various tastes of the droprietors will easily decide as to where to plant.

The *Massachusetts Plowman* says:—"Oxen should be carded and cleaned every day, especially while shedding their coats; increase their allowance of grain as their labor increases, and remember that they are slow feeders and require long noonings."

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 "Printers' Manuscript," leave open, and postage will be only 1c. per ½ ounce.

Echoes from Quebec.

SIR,—A friend of mine, the other day, gave me a reading of a few numbers of the *ADVOCATE*, a magazine, I regret to say, I never saw before, or even heard of. I observed in the October number of last year two articles on "Horse Beans," and venture to send you a few hints on the growing of that crop, as I am informed little attention has been paid to it in either of the Provinces, and having grown them for a good many years in Scotland, I can confidently say that Canadians cannot grow a better grain for feeding purposes for all kinds of stock, provided the climate is suitable. In the Old Country they are generally sown in February; in Canada this is impossible, but by sowing them as soon as the land will permit, I think they have a good chance, the great drawback being the hot season in July causing the plants to lose their bloom, but by early sowing this is greatly avoided. I have grown the Garden Windsor Bean for some years with success. The Horse Bean, when ground dry and given to milch cows in winter along with a supply of parsnips, will make them give rich, fine flavored milk, and improve in condition at the same time.

Several advantages attend the cultivation of the bean. 1st: it is the best preparation for the following crop—wheat; 2nd: the grain always commands a good price; 3rd: the fodder, when well saved, is as good as hay for horses, and the manure from the stable adds greatly to the manure heap.

CULTIVATION.—The same soil for wheat answers for beans, viz.: a strong, rich, deep soil and dry; plough in the fall and drill in the spring 30 inches wide; manure in the drill, and sow the beans thereon with a barrow; then cover with the plow, and when up two or three inches run the drill-grubber through them; keep the soil loose and clean by this means as long as the horse can safely go in the drill without injury. The bean barrow is a simple and efficient affair, something like the frame of a common wheel-barrow with a hopper and spout in the centre and a crank attached to the wheel to turn the gear inside of the hopper. A screw is also attached to regulate the dropping of the seed. The man pushes the barrow in front of him in the drill, keeping his eye fixed on the spout, to see that the seeds drop out regularly. For a farm of 100 acres or so this answers all the purposes of a horse drill at a greatly reduced cost.

J. R., St. Philomene, P. Q.
Jan. 28, 1878.

[One of the most successful farmers we know of, near Montreal, always raises a few horse beans. We have seen them growing on his farm, and they were quite as good a crop as we have seen in England. They have not been raised to any extent in Ontario. Perhaps they have not been planted early enough, and the blossoms are apt to drop off before forming the seed. If early planting was adopted, there might be good crops raised in Ontario. In the Maritime Provinces they are successfully cultivated.]

The American Tariff.

SIR,—Will you be kind enough to publish in your valuable farmers' paper the enclosed article on the American tariff, and oblige an old subscriber.
AN IRISH FARMER, Lambton.

The farmers of Canada need not be reminded that the tariff of our republican neighbors is a matter of great importance to our financial standing. It is true we have learned that we may be in part, at least, independent of their markets. We have in a great measure dispensed with their services as middlemen, and very much of our produce is now shipped direct in Canadian bottoms to European markets. We are aware, however, that their tariff affects our sales, and any change in their tariff must be a matter of importance to us. Their tariff has been avowedly prohibitory of Canadian products and protective of their own manufactures.

The proposed changes now under consideration

by Congress are many and of much importance. Some additional articles are placed on the free list, and on some others there is an increase or decrease of duties; but one principle pervades all the changes—protection of home industry. The duty on imported raw materials is comparatively low, but it increases greatly with the degree of labor on them. The principle of Protection carried to the extreme demands that any labor more than the mere production of the raw materials be performed by their own people. Let us take some articles in the proposed tariff as illustrations of their protective (shall we call them prohibitory?) measures:

Proposed duty on barley, 15 cents per bush.; on malt, 25 cents per bushel.

Wool, according to quality, 2½c., 8c., 10c. per lb.; woollen manufactures, 25c. to 80c.

Wood, various charges according to variety; furniture, 35 per cent.

These are the liberal terms we are to expect in the proposed tariff that has been said to be a step in the direction of Free Trade. We must, as farmers, protect our own interests by raising products such as will best pay for shipment to Britain and British colonies. The more the prohibitory duties are built up against Canadian products, so much the more let our endeavors be to make ourselves independent of Americans and American markets.

SIR.—I have my orchard dug or spaded; what crop would be most suitable; I thought of clover and oats; or to sow it with orchard grass; how much seed to the acre; I am afraid the trees are too close together for vegetables. M. B. C.

[To M. B. C.,—In considering what crop is most suitable in any case the nature and condition of the soil is an important item. If the soil be rich and deep and not too retentive of water the soil will bear crops between the apple trees without at all affecting their growth or fruitfulness if the trees are not too close, as you fear they are. In such a soil as we have referred to, the roots of the trees will strike deep into the soil in search of their food, whereas in a shallow hungry soil they keep near to the surface. Whilst the apple trees are young, crops may well be grown, but care must be taken not to impoverish the soil. To avoid doing so a sufficient manuring for the crops must be applied in every instance. The soil should be kept porous and mellow till the trees have come to maturity, admitting free access to air the plant that the atmosphere bestows liberally, especially on soil in a fitting state to use it to the greatest advantage. You might raise clover and oats in your orchard, but only as one crop in a rotation, and if the oats mature the grain, the soil to be manured. The distance apart of apple trees must depend in a great measure on the variety you plant; some of the larger varieties requiring a space of forty feet and some if they begin to bear at an early age and are short and livid may not have more than half that space.]

SIR,—It is with pleasure I sit down to write to you for information. I thought you were the best man I could write too. I want to know if you have a kind of barley that is called the Hulled Barley—it is the color of red fall wheat—if you can get it, or tell me where to get it, I would be very glad. I grew it for many years, but I quit it thinking to get new seed, but I could never get any more. J. W. McF.

[To J. W. McF.—We are unable to give you the information you ask for, as we do not know of anyone having the Hulled Barley. Some of our leading seedsmen, seeing your inquiry in the *ADVOCATE*, will please if they have it, let us know.]

Algoma.

SIR,—As I have made up my mind to settle in Algoma in the spring, will you please give me what information you can about the place in your next number, and if you cannot, where can I get the necessary information? By answering the above you will much oblige. ENQUIRER, Ingersoll.

[We have endeavored to give the most reliable information regarding Algoma and all parts of the Dominion. The following report will be found useful to "Enquirer" and others.]

SIR,—At the Annual Meeting of the Algoma Agricultural Society the following resolution was passed:—

"That condensed copies of the proceedings and of the abstract financial statement be furnished by

the Secretary to the FARMERS' ADVOCATE, and the *Algoma Pioneer*," for publication.

Pursuant to the above, I beg to state that the officers for the year 1878 elected are Messrs. M. Simpson, President; Robert Laird, 1st Vice-President; George Alderson, 2nd Vice-President. Directors—Messrs. McCulloch, Bennetts, Chapman, jr., Atkinson, Murton, Londry, Plummer, Hill and Wormald. Treasurer, W. H. Carney; Secretary, Chas. J. Bampton; Delegate, W. H. Laird, Barrie, Ontario.

The gross amount of receipts from all sources for the year 1877 were.....\$1,293 11
Amount paid in prizes.....\$264 50
" to Township Societies..... 280 00
" for live stock..... 222 00
" publications..... 136 25
" " threshing machine..... 233 70
" " miscellaneous..... 154 73
Balance in hands of Treasurer..... 1 93

\$1,293 11 \$1,293 11

Your President, Directors and Officers further beg to report:—

1. That the display of grain, seeds and roots at your last Exhibition showed a marked improvement in quality and quantity, the result of improved cultivation.

2. That they regret being obliged to state, though some very good grade cattle were shown by a few exhibitors, yet the improvements in this particular are not such as your Directors would wish and expect, considering the advantages within the reach of members in this vicinity.

3. Your Directors feel great pleasure in calling attention to the fact of the large area put to wheat crops the past season, and that the yield has been all the most sanguine could expect; further, from the information gathered by your Directors, they have every reason to believe that this large area will be doubled at the next harvest.

4. They congratulate you and the farming community of Algoma on the amount of fall plowing that has been done this season, which must tell favorably on next season's yield.

Though this may be partially attributable to the unprecedentedly open autumn, allowing of work being continued up to the week succeeding Christmas Day, yet we look for the cause in the greater enlightenment and experience of our agriculturists, and to the sources of information lately placed within their reach; also to the establishment of a market at their doors at the different flouring mills recently erected.

5. They submit that the success of Thomas McCulloch, Esq., Vice-President of this Society, in producing good apples from his farm in Korah Township, two seasons in succession, viz., 1876 and '77, leads them to hope that though many had despaired of successfully cultivating this valuable fruit in the more northerly portions of the District, yet careful efforts in this direction with hardy kinds will ultimately meet with success.

6. They suggest that this Society publish a sufficient number of pamphlets, with maps, for distribution during the coming season, in which the advantages of Algoma as an agricultural district shall be fairly set forth, and useful information for intending settlers given.

7. In conclusion, they trust a new impetus will be given to the efforts of this Society by the fact of its past endeavors having been crowned by a success such as the most sanguine of the projectors or well-wishers thereof could not have anticipated. They submit that the problem is demonstrated that Algoma in a few more years will be a grain-exporting District, and that as a grazing country it is hard to be surpassed.

W. M. SIMPSON, President.
CHAS. J. BAMPION, Secretary.

P. S.—No Hessian Flies—no Colorado Beetles—no Grasshoppers—no ague. Plenty of timber for fences, fish in every stream, and wild hay for the cutting. C. J. B.

Mr. G. Weekes, of Komoka, offers \$20 to any person that will furnish him with a practicable chemical receipt that will effectually kill Elder bushes.

Change of Seed Oats.

SIR,—To any person who would like myself wish to get the best, and improve on the best oats for seed, will send me a barrel of the best in their locality, I will send in exchange a barrel of the best that can be got in Nova Scotia. Send address and directions.
ROBERT GAMMEL,
Brookfield Station, Colchester County, Nova Scotia.

[A change of seed is one of the most profitable outlays; and a change from the Maritime Provinces to Ontario should be especially beneficial. We have no doubt the inter change of oats as proposed by Mr. Gammell will be willingly taken hold of by some of our readers. The oats of Nova Scotia, if we are to judge from its weight per bushel must be of good quality.]

Seed Reports.

SIR,—I sold to Mr. George Miller, of Thorald, 400 bushels of my farrow spring wheat, and he told my son, that it was the best spring wheat he had received in to his mill in September last. For yield to the acre, I cannot find any to come up to the farrow. The redfern does not yield as much to the acre—the danish does not yield as much per acre. I am well satisfied with the farrow wheat; I don't find any trouble to sell said wheat.
R. W.

SIR,—Enclosed find my subscription for the FARMERS' ADVOCATE, for another year. It would be almost impossible for us to get along without it; it is the most welcome paper that comes to the house; every one reads it; it interests the young, and gives useful information to the older ones; it directed profit to me this year of over fifty dollars. From information that I saw in it, I was induced to send to the Agricultural Emporium in London, for one hundred pounds of Redfern, and one hundred pounds of Odessa spring wheat—which has done very well with me, both yielding about the same. I have twenty-eight bushels of Redfern from the hundred pounds sown, and twenty-seven and a half for the hundred pounds of the Odessa. I drilled each hundred pounds in $\frac{1}{4}$ of an acre, so you see I had 55 $\frac{1}{2}$ bushels from an acre and a half. The wheat is beautiful; I showed it at our County Show last fall against over 20 different varieties, and I took first prize for Redfern, and second for Odessa, and if the Odessa had a class of itself it would have taken first prize. I like the Redfern just for two reasons, the first is that it stands up better, has more straw, and stronger straw. The next reason that I like it better is because it is fully a week earlier than the Odessa; although I do think the Odessa is the best wheat for flour, it seems to be more mealy, white and thinner in the brand; although I cannot speak for a certainty, for I have not got any of it grown yet; for all I have got to spare, the neighbors want it for seed, and I am selling it for two dollars per bushel, so you see how the ADVOCATE has made me over fifty dollars the last year. I also got about an ounce of another kind of spring wheat last spring it is called the Wild Goose Wheat; it has done remarkable well. I have fully $\frac{1}{2}$ a gallon of beautiful wheat from the one ounce that I sowed; but the wheat looks coarse and very plentiful; I will try it again this spring, if it will make good flour it will be a good wheat to yield; lots of the heads had from seventy-five to eighty-five grains in each head; the straw is very tall and strong; but I have my doubts about its quality.

Dear sir, it has been three years since I commenced taking the ADVOCATE, and I can see that it is improving every year; and I hope it will continue.
A. C., Campbell's Cross P. O.

[The seed reports need no comments, they will speak for themselves. A variety of wheat whatever be its merits will not succeed in every locality and under all circumstances. Our endeavour has been to obtain the most reliable information on this very important subject from many sources, and from widely separated localities.]

Officers of the Ameliasburgh Agricultural Society for 1878.

President, N. A. Peterson, Ameliasburgh;
Vice-President, G.H. Spruny, Mountain View;
Secretary and Treasurer, E. Roblin, Ameliasburgh.
The Society being open to the county, any person sending his name and one dollar will become a member of the Society, and receive the FARMERS' ADVOCATE free for one year, and the benefits of two Exhibitions, Dominion Day and Fall Show Day.
E. R.

The Farmer's Position.

SIR,—I think there is a great improvement in the ADVOCATE since its commencement. I wish you success in your undertaking. The farmers of Canada are certainly able, and ought to be willing to support a first class agricultural paper, such a course, in my opinion, would be profitable too; because scarcely anyone is so clever that he cannot profit by the experience of others. We need all the knowledge we can get, for ours is not a very lucrative business, when followed blindly. But we need not grumble when we contrast our position with that of hundreds of small merchant, whose lives are a constant struggle with long credit and bad debt; we have reason to be thankful for our independent, quiet mode of life. If a farmer shows by true nobility of soul that he is worthy of his noble profession, he need not be afraid to stand before any man on earth.
T. D.

SIR,—Could you let me know through the next number of the ADVOCATE if salt would be as good to put on meadow or pasture land, as land plaster, providing both were about equal cost per ton, and when would be the best time to sow it.
R. T., WEST ESSA.

[To R. T., WEST ESSA,—The benefits to be conferred on meadow, or any other land, must depend greatly on the nature of the soil, and what elements of plant-food it is deficient of. Salt as a top-dressing is inferior to land plaster, which sometimes produces very remarkable effects. Superphosphate, however, is more effectual for the purpose than either, as a general rule. A mixture of land plaster and salt has been sometimes productive of very good results.]

The Farmers of Essex County and the American Tariff.

SIR,—We look to your paper as expressing the opinion of farmers in all that most touches their interest. I send you a copy of a resolution passed by the Council of this County at its late meeting.
Yours,
AN ESSEX FARMER,
Colchester.

The Warden, Reeves and Deputy Reeves of the County of Essex, in a petition to the Governor, shew: That the farmers of the said county are materially injured by the competition caused by the importation of agricultural products into this Province from the United States, while they are debarred from the United States markets by the heavy duties existing in that country upon such products; they therefore pray that his Excellency would be pleased to cause such a revision of the Canadian tariff as may enable the agricultural production of this Province and the Dominion to compete successfully with the neighboring nation; and that such revision of the tariff be affected as shall, without being prohibitory in its character encourage the languishing industries of the country.

Mr. White, six miles from Exeter, tells us of wheat, the Red Chaff, rusted very badly, some of it was almost black, in the townships of Hay and Osborne, and that the fine wheat escaped rust, and yielded well and of a good quality. Oats was a good crop, especially the Australian, of which a half bushel of seed produced 34 bushels. He has, until lately, paid but little attention to stock and dairy farming. Last season he sent to a cheese factory the milk from his six cows. His cheese paid him \$20 for each cow, though a large portion of the milk had been used by his family. At the close of the season he sold \$30 worth of butter. A neighbor, he says, received for cheese from his dairy \$31 per cow. Mr. White's return, for a beginning in the business, was not bad, but others who have had more experience in the business, have received twice as large returns.

SIR,—E. E. L., wishes to know how to keep dried fruit from worms or moth. I have had considerable experience in keeping dried fruit, and find nothing better than cotton bags. I sometimes keep it for several years by simply putting it in cotton bags and placing it in a dark room, or a large box. Last year I kept over forty bushels, and when picking them over for sale this winter, have not found a single worm or moth.
W. P.

[Reply to inquiry, "How to keep dried fruit from worm or moth." See Feb. Number.]

Preserving Dried Fruit.

In reply to the enquiry of "L. E. L." in our issue of February, we have received the following easy, practical direction from Mrs. Dr. Doran, Rushsylvania, Ohio. She will please accept our hearty thanks:

SIR,—One of our Toronto friends sent us a copy of the ADVOCATE. On page 42 of the February number, L. E. L. asks for light in regard to the best method of "preserving dried fruit," from the ravages of the moth and worms. L. E. L. has the right idea in asking for the best. If you will allow your "Yankee cousin," to give her experience in keeping all kinds of dried fruits I think it will save L. E. L. the trouble of making "boxes," and equally as cheap.

Get a new paper sack put in fruit, tie up fast and good, hang up any place to suit you, and snap your fingers at "moths, millers, bugs, spiders," or any of the thousand and one pests. Try it, and if you fail let us hear from you, but with a full assurance of the plan. It is cheerfully recommended as the best, cheapest, and superior to all others that I have ever tried.

MRS. DR. DORAN.

Rushsylvania, Logan County, Ohio, Feb. 14, 1878.

P. S.—I should for 'tie' have said seal them up with gum arabic mucilage, cutting off two or three inches at the mouth of sack, so as to make a flap to double over. Cover well with mucilage, not paste, and then you can snap your fingers at them.

Odessa Wheat.

SIR,—In 1876 I procured the wheat, 'Pastooled' out like fall wheat, and did not come into head as soon as my Red Chaff. It was not a good season for spring wheat with me, and I thought it not as good as the Red Chaff until I threshed it; then it out-yielded the Red Chaff. In 1877 I sowed 45 lbs. of the Odessa wheat; it yielded 20 bushels. I think it will be a valuable wheat. It yielded better than the Red Chaff.
J. B. L., Dorchester.

Preparing or Making Clean Ice.

SIR,—To prepare a small quantity of clean ice, my plan is to make a box of inch lumber—size, 12 inches deep, 12 inches wide, and 24 inches long, but half an inch larger at top than bottom. Bolt the ends to prevent bursting; fill with water when the "hard freeze" comes; set it on two saw-horses, and cover with an inch board; leave it outside the door over night. Set it inside in the morning, on a chair, not too near the stove, and in a short time turn it out carefully and place it in the open air to freeze solid.

By having four such boxes, and attending to them a few minutes evening and morning, in eight days you will have sixty-four square feet of solid, close-packed, clean ice, sufficient to do any common farmer or mechanic through the hot season. This saves a good deal of hard labor in sawing, besides sometimes drawing a long distance from a dirty pond.
FARMER, Mount Charles.

[Had we been in the receipt of this letter a month or two earlier, it would be more useful for this season. It may even yet be of some use, however; it may be kept over and acted on next winter.]

SIR,—Will you please inform me in your paper or otherwise where I can buy salt cheap for fertilizing, by car load?
W. A., Queenston.

[You can have good salt for agricultural purposes, on reasonable terms, from Messrs. Gray, Young & Spaulding, Seaforth P. O.]

SIR,—"F. A.," Caradoc, gives some encouraging accounts of the use of superphosphates; therefore for the information of myself and perhaps other readers of your valuable journal, I would ask him where his superphosphates were manufactured and what was the price per ton; also, if he used salt upon the land at the same time that he did the artificial manure.
W. S., Richwood, Ont.

N. B.—Farmers should return thanks, if they can do no more, to Edwin Redfern, for the propagation of the wheat which bears his name. W. S.

[Will "F. A.," Caradoc, be kind enough to give the information asked for by "W. S."]

SIR,—If "F. A.," of Caradoc, will call at Lot No. 7, 5th Con. London Township, he can purchase a grain drill that may suit him. I see he advertised in Jan'y number to get a grain drill.
T. E., London.

Does Farming Pay?

SIR,—May I give you a little of my experience in farming? I settled in Garafraxa 24 years ago, and bought my land on credit. All I was worth was a yoke of oxen and \$10. This settlement was then a wilderness. I made it a practice to keep out of debt, and I have never been in a pinch; if one thing missed, another paid. So I now have the deed of 600 acres of good land, and enough money out to keep me and the family. I don't say this to boast; I would like to encourage others to do likewise. I find the *ADVOCATE* a great help and good company. E. L. F., Cumnock.

SIR,—I see that you persist in advocating the compulsory belling of sheep as a preventative of destruction by dogs. Now, I wish to say that I dissent wholly from your plan, let the bells be put upon the dogs, then every body will know just where the dog is, and in most cases whose it is by the bell. In this neighborhood dogs are at present causing much alarm and considerable loss. On the 9th instant I was out a little late, and before I returned my nine-year-old boy had the pluck to tackle two and drive them from the premises. The sheep were at the house or damage would no doubt have been done; but on hearing the rumpus the boy sallied out, when one sheep was run into the house. The next day one dog came to grief. Again, last night, a neighbor had three sheep killed, but as it was a good morning for trailing another dog came to a like end, and now the farmers are beginning to awake to the importance of dogs vs. sheep and grange vs. dogs. There are, perhaps, to-day, not more than half the number of street curs in Blenheim there was two months ago. Please tell us how much power we have in our hand—i. e., to execute by lynch law. Some of us are very determined. E. J. Y.

[We here give you the law from our statutes. There are many by-laws in counties, townships and cities that give greater power than the statutes. We have killed numbers of dogs when on our farm which the law might not have justified us in doing, but we deemed the preservation of our stock required it. Our plan was to shoot them dead, put them out of sight, and say nothing about it.

"Any person may kill any dog which he sees pursuing, worrying or wounding any sheep or lamb."—*Revised Statutes of Ontario, Cap. 104, Sec. 10.*]

SIR,—I sometimes notice in your paper an occasional item on porkers. I have just killed a pig ten months old which weighed three hundred and ninety pounds dressed weight. If any of your subscribers can beat that, I would like to hear from them. W. P., East Zorra.

SIR,—I want to ask you through the *ADVOCATE* which is the best form to take fresh butter to market, whether in pound rolls or pound prints, and what kind of packing boxes are the best. I have seen by the *ADVOCATE* that some have wood and some have tin. Please tell us what kind of wood is the best and how they are made, and, if of tin, how they are made. If any of your correspondents can inform us we shall be obliged, as we are thinking of selling our butter fresh this season. I think the *ADVOCATE* is improving all the time and is doing a great deal of good through the country. I like Minnie May's Department well; the recipes are splendid, only I think we could do without alcohol in any shape and at all times in our cooking. I know that some think we cannot do without wine or brandy in some of our cakes and sauces, but I would rather let them go than use it in any shape. Our young people have enough temptation away from home, so we should not create an appetite for it there. Flesherton, Feb. 7th, 1878. MRS. J. B.

[It will depend entirely on how far you have to take your butter to market. If within driving distance you will require nothing but a good basket, but if shipped by rail any distance you will require a box or pail. The Americans get up what they call a "return butter pail," which is so made that the prints or rolls do not touch each other, and when empty they are returned. It is made with loose or false bottoms, so put in that they keep each layer of butter from touching the other. They are shipped by express, and when empty are returned and filled again. The butter sent in these is put up in either pound prints or rolls with a piece of nice muslin cloth around each roll or

print, with the maker's name on each, which are returned with the pails. Butter put up in this way, nicely made and nicely packed and sent to a good market, will always command a good price. When sending butter in this way you should have your regular customers, and if shipped there should be some one to receive it and see that it is properly handled.

To J. L. SANDWICH.—The Pearl Millet is advertised by W. H. Carson, 125 Chamber Street, New York.

Post Hole Auger.

SIR,—Can you tell me anything about a patent ground auger to bore post holes. By so doing you will oblige J. M., Campden P. O.

[There is a post hole borer sold in this city. The price is \$2.65. It weighs about six pounds and is worked by hand. Large numbers have been sold, and we hear that they give the best of satisfaction.]

Golden Midge-Proof.

SIR,—Will you be kind enough to inform me what is your opinion of the "Emporium," or Golden Midge-Proof wheat. Do you think it adapted to the Island soil, and does it deserve that reputation which has been given to it by travelling agents. J. McM., P. E. Island.

[The Red Fern wheat has, we believe, been sold under the name of Golden Midge-Proof.]

SIR,—Last year I purchased nine bushels of Red Fern wheat, and got 160 bushels returned eight days earlier than any wheat I know of. I also got one bushel of the Odessa. For seven or eight weeks it looked wretched, and people passing along the road said that it was a failure. In fact, my father said there was not much of it, but it was plenty, for it would be a poor crop. The result was, I had eighteen bushels for one sown, and good wheat. I got one bushel of Scotch Black Tartar Oats. They yielded twenty-eight bushels, but the sample is not as good as the original. W. W., Ilderton P. O.

Jersey Cattle.

SIR,—I wish to ask you, through the *ADVOCATE*, who keeps the most popular herds of Jersey cattle in Ontario, and where one would be most likely to purchase a herd of that breed. Feb. 16, 1878. J. C., Nova Scotia.

[There are but few Jersey cattle in Ontario. There is no herd that we know of. There are a few Jerseys in the hands of a few individuals. The largest herd of them in Canada is that of Romeo H. Stephens, Slocum Lodge, St. Lamberts, Montreal, P. Q.]

[Many communications from different parts of the Dominion that we would gladly make place for were it in our power we are compelled by press of matter to hold over till our next issue.]

Cattle Breeding and Feeding.

The breeding of a better class of cattle alone will not suffice. There is also great need for improvement in the system of feeding pursued by many farmers. At present there is considerable waste of food and time, arising from a want on the part of farmers of any knowledge of the essential ingredients which the food given to cattle ought to contain, and from a want of care and attention in feeding unvaryingly and systematically. Continuous and intelligent feeding from calf hood onwards is the only means by which the greatest quantity and best quality of beef can be put on the animal, and the nearer farmers approach to this ideal the larger will be their profits, and the better they will be able to defend themselves from the invasion from America. Calves should receive a liberal supply of milk for at least five months, with cake or some equivalent added, or substituted for a portion of the milk, towards the latter end of that period; and then when they are weaned, the greatest care ought to be taken not to allow them to fall away, or to allow their constitutions to be impaired by the change of food, which for some time should be of a very nourishing kind. During the first winter they need not be fed too highly—just liberally enough to retain the calf flesh, keep the animal in a healthy growing condition, and gradually add a little beef. Then at the first of summer they ought to be kept in the house, even though a little artificial food should have to be given them, till the grass has advanced sufficiently

to maintain them in a progressive state; and in the same way at the end of the grass season, they should be housed as soon as the grass begins to fail or the cold to interfere with their feeding. The loss that farmers in this country sustain through turning their cattle too soon on to the grass in spring or beginning of summer, and leaving them too long upon it in autumn is very great indeed, and demands that strenuous efforts should be made to remedy the evil. House-feeding must be continued longer in spring even if artificial food should have to be used a little; and to tide over the interval between the grass and turnips and straw seasons, much larger quantities of tares and such crops ought to be grown, especially in Scotland, where there is less provision made for this short season of cold and hunger than in England. It sometimes takes a month of liberal house-feeding to replace what has been worn away by the half-starvation of a fortnight on the open field. Cattle would make more progress in a comfortable house, a little more than half fed, than out on an exposed field during cold weather, even if they should have all the meat they could consume. And in addition to the waste of time, labor and food, this "wearing away" process, as previously noticed in referring to the American system of feeding, has a very injurious influence on the quality of the beef, while it also, in many cases, weakens the constitution of the animal. In the majority of cases it would probably be advisable for the ordinary farmer to feed off his cattle at two years old; and in this case the feeding through the last winter ought to be liberal and skilful. The temperature and constitutions of the animals ought to receive constant attention, and every animal ought to be fed exactly according to what its constitution can bear. They ought to be cleaned and groomed more frequently than they are in general, and so also must they be allowed longer and more regular periods of rest.

The questions of byre, box and court feeding can hardly be entered upon here; but it may be remarked that the feeding house ought to be kept clean and well ventilated, but free from draughts. For about half the winter 100 lbs. of turnips are not too much for each animal per day; but during the last two months of its feeding, it ought not to have more than 80 or 85 lbs. of turnips, and 4, 5, or 6 lbs. of artificial stuffs, each in two meals per day, according to the constitution and relative condition of the animals. A mixture of good linseed cake and grain—say oats and Indian corn, and perhaps beans or locust beans, in equal parts—forms one of the best feeding mixtures any farmer could desire. In a mixture of grain and either of many kinds of cake there is too little oily matter; but in linseed cake all that is necessary is supplied. There is little doubt that the general body of farmers with considerable advantage to themselves, might use a great deal more artificial food than they do, and thus spread their turnips over more ground, so to speak; for at present turnips are too heavy a share of the feeding allotted to them. The "soiling" system—i. e. feeding in the house during the summer on cut grass and artificial food—ought also to be pursued more largely; for where there are half-covered courts, it has been found to pay splendidly, and then summer is the season of the year during which there will be least foreign competition in the beef markets. In concluding this part of the subject, I would sum up my advice to farmers who feed and breed cattle, thus—keep few, keep good, keep well.—*Cor. Scotsman.*

GRAIN.—America may not long be the granary of England. Official reports state that from Upper India, wherever canals cheapen transport, wheat can be laid down in England at four shillings a bushel less than the present average cost of American grain. The quality of the wheat from the foothill country on the lowest slopes of the Himalayas is pronounced good. The Indian Government seems determined to push forward the extensive system of inland navigation already yielding results so beneficial to the farming interest. Labor is so cheap that public works cost but a fractional part of the expense in England. It looks decidedly visionary, yet it is suggested that in ten years, time India may be receiving one hundred millions a year, now paid to the United States for wheat alone. Egypt is also entering the field. The great Sudan country at the upper sources of the Nile is being tapped by cheap railways and free canals. Wheat can be supplied in unlimited quantities, two crops a year, at prices that will make great changes in the commercial channels of the world. A few years may place an immense supply in the English market.

The Family Circle.

"Home, Sweet Home."

Loaning a Lover.

My sister Patricia was an heiress. Strange enough, for we had always been terribly poor down at Lowbridge, my widowed mother bringing up her four daughters with the greatest difficulty; but when brought up we were worth looking at, I believe. Healthy habits and frugal living are apt to make good conditions, and Bess and Amy and Patricia and I were as bright and handsome girls as are often seen.

Bess and Amy were twins, with eyes as blue as the sea water near which they were born, rosy cheeks, and long, light brown curls; Patricia was a sparkling brunette, while I was as perfect a blonde, with crinkled hair like molten gold.

Great had been our excitement when Aunt Betty wrote from Fairhaven:—

"Dear Sister-in-Law: I am going to do myself the pleasure of visiting you this summer. I hear that brother Abel left four girls, and I want to see them. I am getting on in years, and will make one of them my heiress," etc.

Aunt Betty of Fairhaven was worth a hundred thousand dollars if she was worth a cent.

Well, in due time she came. She put up at the hotel, for our cottage at Lowbridge wasn't big enough to hold her, with her maid, coachman and carriage; but fortunately that was close by, and she spent the larger half of three days with us.

We all thought Bess would be her choice, for father had named her Elizabeth for Aunt Betty, though she had always been "Bess" with us; but it was not either of the twins, and it was not I—it was Patricia.

"Where did that girl get her black hair?" Aunt Betty asked, as soon as she saw her.

"I think she looks like my brother Luke, don't you?" asked her mother, with a wistful look.

"The very image of him," answered Aunt Betty, turning pale.

I divined then, as I learned afterward, that Uncle Luke had been a lover of Aunt Betty's when both were young, before her marriage, and the fact seemed to have a power over her.

She looked at Patricia until the girl blushed rosy red, and would have slipped out of the room, when she called her to her, and drawing her down upon her knees on a footstool before her, she put a withered hand each side of the warm cheek, and said warmly:

"My dear, you shall be my heiress."

So it was Patricia she chose to leave her money to; but we were not left out in the cold, for she sent the twins, who were only sixteen, to a convent school for two years, and invited me with Patricia to the Hermitage.

It was her home—a stately old mansion of gray stone, gloomy-looking on the outside, but luxuriously comfortable and beautiful within, without being in the least modern. We had each a maid and the free use of the horses and carriage. After making this provision for our comfort, Aunt Betty excused herself from making company of us, and we were free as air to enjoy ourselves as we chose, provided we did not interfere with her naps. We chose to make a great many pleasant acquaintances, guided conscientiously by Aunt Betty's wishes, and the result was that I returned to Lowbridge in the summer engaged to Mr. Clyde Sherrington. He was wealthy, handsome, agreeable, well connected. Everybody said "Gertrude has done well for herself."

That autumn Aunt Betty died. Patricia was to come in possession of her fortune in a year, when she was twenty-one—full and undisputed possession of one hundred thousand dollars.

It was arranged that we were all to come to the Hermitage to live. We did so, and had lived there quietly, as was becoming, for nearly a year, when Patricia made the acquaintance of Mr. Gage Redmond.

She met him first at a funeral—of all places!—the occasion caused by the death of our next neighbor, Gen. De Lacy, Gage Redmond being a neighbor of his. He was well connected, but poor as a church mouse, people said; so of course he was after Patricia's fortune, mamma declared.

"Patricia is rich and beautiful. Pray don't let her marry a fortune-hunter, mamma," said I, looking up from a letter I was writing to Mr. Sherrington.

"I would not, if I could help it; but what authority have I, Gertrude," said my mother. "In a few months Patricia will be in undisputed possession of her fortune. We are here only by courtesy. The Hermitage is her home. I have no right to control her whatever."

"But your influence, mamma."

"Will have very little effect if she sets her heart on this Gage Redmond. Pray stop staring vacantly out of the window, Gertrude, and attend to what I say. I want assistance in this matter."

"Please excuse me. I am thinking of my own affairs just now, mamma. They may be of no consequence to you, but my letter is a matter of some importance to me."

I did not mean to be saucy, only pettish; and mamma having had long experience with four headstrong girls, bore it with me quite patiently.

"Well, finish your letter, Gertrude, and then advise with me."

"But my train of thought was broken, and after a few moments I put the sheet in my writing-desk."

"What can't be accomplished openly must be done by stratagem, mamma. It is probable this Gage Redmond is after Patricia's money. She is a great prize matrimonially. Well, you say I am prettier than Patty. Suppose I play decoy?"

"What?" cried mamma.

"Mr. Redmond is dark and reserved. I am fair and volatile. Don't you think he would appreciate my style of beauty? I took a little pains to make him do so?"

"But Mr. Sherrington?"

"I will tell him. He will not object."

"I think he will."

"Oh, no! He will be interested in the good of the family. He comes next week. Fortunately, Patty is sick with a cold, and Mr. Redmond can see but little of her until then."

Quite pleased with my scheme, I ran up stairs to give Patricia her cough drops, sitting down at the window of her room, and bowing cordially to Mr. Redmond, whom I could see writing in his uncle's study in the great mansion across the way. The larches hid all the house but that one window. He was there a good deal, and I reflected that Patty's blue silk curtains were more becoming to my style of beauty than hers.

"I'll bring my embroidery up and sit with you Patty," I said.

"Do," she said. "I am tired of watching the evergreens swaying about against that gray spring sky."

So I filled my lap with rose-colored worsted, and framed myself in the blue window drapery for Redmond's benefit. Just the colors to set off the snow and pink of my complexion. I had the satisfaction of meeting his eyes more than once when I glanced over the way.

"Seems to me you've got wonderfully good spirits, Gert," remarked Patricia, laughingly.

The De Lacy dinner-bell rang, and Mr. Redmond disappeared.

"Well, I must take them in another direction now," I said, rising. "I can't give any more time to you, sis, for I want to finish my blue silk suit before Mr. Sherrington comes. You'd better take a nap."

Patricia settled herself obediently among her cushions. Suddenly she lifted her beautiful head.

"Has Mr. Redmond called to inquire for me to-day, Gertrude?"

"No, I believe not," I replied, indifferently.

She showed a moment's surprise, then settled herself on her couch again, and in five minutes was sleeping sweetly.

The blue silk suit was finished, and, having laid aside my half mourning for Aunt Betty and donned it, the family pronounced it charming.

"Is Mr. Sherrington coming to-day, Gertrude?" asked mamma.

"Yes."

"I want to say to you, my dear, that on Mr. Sherrington's account I don't think you had better—" she whispered, but I interrupted her by my exit from the apartment.

The next train brought Mr. Clyde Sherrington.

"How delightful that the spring is at hand," said he; "the sunshine growing warm and the grass springing. I passed a bit of wood coming up from the station that is full of arbutus. We will have some delightful walks, Gertrude. I am very tired of city life."

"Yes, Clyde, dear, but you see I have been obliged to make a little plan which will interfere somewhat with that arrangement," I replied, quickly. "In fact, for the family good, you know, I want to lend you to Patricia."

"Lend me to Patricia?"

"Yes; while I lure away a most ineligible suitor she has. Mamma and I conclude that it is the only way," I added. "Patricia has a fortune of one hundred thousand dollars, you know."

"Yes."

"Well, we think this Mr. Gage Redmond is after her money. He is only a briefless lawyer. We can't afford to let Patty make such a match as that, and so, as I don't think I'm a totally uninterested person—do you Clyde?—I am going to try and flirt a little with Mr. Redmond. Now, you won't be a bear, and say no, will you, dear? And you'll try to help us by devoting yourself a bit to Patricia, won't you?"

At first my companion did not believe that I was in earnest but when convinced of my sincerity, his astonishment was inexpressible. I remember that he stammered out some faint objections, but I would not listen, and, before retiring that night, I whispered to mamma that I had made it all right with Mr. Sherrington, and she had only to observe how nicely I would manage the whole matter.

I sent Patricia off in the morning to find arbutus with Mr. Sherrington, while I waited to receive Mr. Redmond.

When he came I was in the garden, and ordered lunch an hour earlier than usual. My pale blue silk looked beautiful on the lawn grass.

"Pray come and see my tulips, Mr. Redmond," I called as he walked up the avenue.

He came, pleased enough, and as he was especially fond of flowers I had no difficulty in detaining him for more than half an hour.

Then, seeing him looking at his watch, I observed:—

"We won't wait lunch for Patricia, for Mr. Sherrington is with her. They have gone roaming off after spring flowers, and may not be back these three hours. Come in and have a bit of salad with a cup of chocolate, Mr. Redmond. I made the chocolate myself, and can recommend it."

So I kept him for another half hour, and he left, pleased with his visit.

Patricia and Sherrington came back only fifteen minutes after the usual lunch hour, the former so delighted with a profusion of pink arbutus as hardly to heed when a servant informed her that "Mr. Redmond had called to see her, and had staid with Miss Gertrude for lunch."

She had put the rosy clusters in her dark hair and on the bosom of her graceful gray dress, and, flushed with her long ramble, I think I never saw her look so perfectly lovely. "He has been here. Very nice of you to keep out of the way so long," I whispered to Clyde.

He looked at me queerly, but said nothing. I did not want him to expostulate with me as I believed he wished to do, and so kept apart from him during the evening, leaving him to play and sing with Patricia.

He was interesting with his very natural manner of reserved modesty. I was glad when Patricia found him so. He had pale, silken hair, that fell in shadowy curls over a beautiful forehead; soft, dark eyes, softly modulated tones. He contrasted nicely with her dark, spirited beauty.

for your sister. Since you are free, then, will you marry me? I can support you well, Gertrude, or I would not ask you to bind your future to mine. The death of my grandfather two years ago left me \$50,000, besides some real estate. I have a pleasant home on the Hudson—retired but elegant—where I would like to take you. What do you think, Gertrude? Could you be contented to leave your friends and live at Rose Cottage with me?"

My amazement allowed me to stammer nothing intelligible. In some distant way I temporized the matter, and begged Mr. Redmond to give me time for reflection.

He went away, making an appointment for the next evening.

So thunder struck was I by the revelation of Mr. Redmond's wealth that I wandered about the house in a dazed way, not heeding how mamma was fretting about Patricia, who had gone to ride with Mr. Sherrington.

"What is the matter, mamma. Is it going to storm?" I said at last.

"The storm? Nonsense! Where are your eyes, Gertrude? But it is nearly nine o'clock. Patricia has been gone seven hours with Mr. Sherrington, and I know something is wrong."

"What?" I demanded, arousing myself.

"I don't know."

Nine, ten, eleven and twelve o'clock passed. No carriage—no news.

At noon the next day the buggy drove into the yard. Patricia and Clyde Sherrington alighted. Patricia coolly presented her husband. They had been married the evening before, by our pastor at Lowbridge.

"So nice and quiet," said Patricia. "No fuss and no notoriety."

She took her place coolly at the table.

"You needn't hesitate to take Gage now, Gertrude; he's dead in love with you, and as I like Clyde best, I thought I'd decide the matter without any complications."

I think I was dumbfounded. But I found my tongue when Mr. Redmond came in the evening, and said, "yes."

I give my experience for the benefit of others. It is dangerous loaning one's lover.

Minnie May's Department.

MY DEAR NIECES,—I am sure all who have been cherishing with tender care their favorite window box, hanging basket or stand of plants through the long, cold winter, experience a glow of pleasure as they look upon their little pets. Flowers may be counted amongst things which make homes most cheerful looking in winter time. But now thoughts of spring work and gardening come crowding upon us, making us long for the sweet, fresh, early days of warm sunshine that brings to us, from under the snow, our tulips, lilies, crocuses and all the lovely buds that we know are only awaiting for the soft south-west wind to bring them to life once more. We must await patiently for the good time to come, and in the meantime give a little extra care to our plants that are now looking so nicely. Let us dig around them, loosening the earth quite deep down in the pots, and give them a little ammonia, bone dust or lime, diluted in water, once a week. If dust has accumulated on them, give them a thorough bath. Watch for insects. To destroy them use tobacco water or carbolic soap suds, or else powder with helibore. To have plants ready for transplanting, we might sow in boxes seeds of phlox drummon petunias, dianthus and various others.

RECIPES.

CHICKEN CROQUETTES.

One large chicken; two sweet-breads; two ounces of butter; one wine glass of milk; one loaf of stale baker's bread; pepper, salt, parsley, onion and two eggs. Boil the chicken and sweet-breads separately until tender—saving the chicken broth. Chop both together very fine; season with pepper, salt, parsley and one teaspoonful of grated onion. Grate or rub bread until you have equal quantities of crumbs and chicken. Take as much chicken broth as will moisten the crumbs; add the milk, butter and let boil; then stir in the crumbs, mix with the meat and when sufficiently cool, stir in the two eggs, well beaten. Mold into croquettes; roll in crumbs or Indian meal and fry in lard.

CANDIED HONEY.

To prevent honey from candying after being strained from the comb, put it in a kettle over the fire, boil it gently, and as the scum rises skim it off until it becomes clear, when it can be turned in the vessel you wish to keep it in, where it will keep clear and fresh without candying. There are many persons who cannot eat new honey, but when so prepared no injurious effects will follow.

KEEPING EGGS.

A farmer who has given much attention to raising eggs for market, publishes the following as his method of preserving them:—"My mode of preparation was to varnish the eggs as soon after they were laid as possible, with thin copal varnish, taking care that the whole shell was covered with varnish. I subsequently found that by painting the eggs with fresh albumen, beaten up with a little salt, I preserved them equally and for as long a period. After varnishing or painting with albumen, I lay the eggs upon rough blotting paper, as I found that when they were allowed to rest till dry on the plate or on the table, the albumen stuck so fast to the table or plate as to take away a chip out of the shell. This is entirely obviated by the use of blotting paper. I pack these eggs in boxes of dry bran." By this means, the writer adds, eggs are preserved so perfectly that after six months they have been mistaken for fresh laid eggs, and he thinks they can be kept good for a year.

SYRUP OF COFFEE.

This preparation is of great use to those who have to take long journeys. Take half a pound of the best ground coffee, put it into a saucepan containing three pints of water, and boil it down to one pint. Cool the liquor, put it into another saucepan, well scoured, and boil it again. As it boils, add white sugar enough to give it the consistency of syrup. Take it from the fire, and when it is cold, put it into a bottle, and seal. When travelling, if you wish for a cup of good coffee, you have only to put two teaspoonfuls of syrup into an ordinary coffee pot, and fill with boiling water. Add milk to taste, if you can get it.

FRUIT AND FEATHER CAKE.

Six eggs, two scant cupfuls of sugar, butter twice the size of an egg, two cupfuls of flour, two teaspoonfuls of cream of tartar, one teaspoonful of soda. Mix as usual, and take out one half, or rather less; into this stir half a pound currents, half a pound raisins, seeded and chopped, two tablespoonfuls of sliced citron, and half as much candied orange or lemon; one teaspoonful powdered nutmeg, one of cinnamon, half a glass of brandy, one teacupful of molasses, and two teacupfuls of flour; bake in jelly cake pans, first the plain, then the fruit cakes. Cover each with jelly, then pile one on another alternately and ice the outside. A beautiful and delicious cake.

CORN BREAD FOR BREAKFAST.

Five handfuls of Indian meal, three handfuls of flour, two eggs, salt, one-half teaspoonful of soda, and one of cream of tartar; sweet milk enough to make a little stiffer than batter.

PULLED BREAD.

Take from the oven an ordinary loaf when it is about half baked, and with the fingers, while the bread is yet hot, dexterously pull the half-set dough into pieces of irregular shape about the size of an egg. Don't attempt to smooth or flatten them; the rougher the shapes the better. Set upon tins, place in a very slow oven, and bake to a rich brown. This forms a deliciously crisp crust for cheese.

YORKSHIRE PUDDING.

One pint of sweet milk, four eggs, one cupful of raisins or currants, one teaspoonful of soda and two of cream of tartar; a pinch of salt and flour enough to make a stiff batter; pour into a buttered pan and place in the oven under a roast of beef, allowing the drippings to fall upon it while baking. It requires about twenty minutes to bake, and should be eaten as soon as dished.

POTATO PUDDING.

Boil two medium-sized potatoes; mash smoothly, and add two beaten eggs, one pint of sweet milk, two tablespoonfuls of sugar; flavor with vanilla and bake.

WASHING FLUID.

There seems to be a strong prejudice against washing fluids, and a general idea that to spare the wash-board is to spoil the clothes. It is reasonable to suppose that any compound strong enough to remove the dirt from clothing will also affect the fabric; but I have used a fluid made from the following recipe for years, without discovering any premature signs of "mild decay" in the linen, while it saves at least half the weariness of wash-day.

Dissolve two pounds of soda ash and one-half pound of unslaked lime in one gallon of water;

let it boil; pour into a jar or jug, and add two gallons of water; when it settles it is ready for use. Soak the clothes over night; put a teacupful into the boiling suds; let it come to a boil; put in the clothes, and boil for a few minutes. If they are passed through a pounding-barrel, both before and after boiling, table and bed linen will need no rubbing at all, while any stain remaining on bands, sleeves, etc., of garments will rub out very easily. Care should be taken to rinse them thoroughly.

EGG PUDDING.

One quart of sour milk, eight beaten eggs, two teaspoonfuls of soda, flour to make a stiff batter. Bake quickly and eat warm with cream and sugar, flavored with nutmeg.

MRS. MARY McC.

BREAKFAST RELISH.

Cut into small pieces one-quarter of a pound of cheese; place in a spider with a small piece of butter; pour over it one cup of milk and one egg well beaten; season high with salt and pepper.

CORNED BEEF.

For one hundred pounds of beef take three buckets of water—or sufficient water to cover the meat; four pounds of brown sugar, with as much salt as will dissolve; boil and skim; put in the meat and boil thirty minutes; take out and cool; pack into a barrel and turn on the pickle when cold. The boiling of the meat closes its pores, and no blood escapes into the brine. The meat is really excellent, while that miserable task of re-scalding the brine is unnecessary.

LOOKING-GLASS IN MOUSE TRAPS.

Rats and mice will go into a trap much more readily if a piece of looking-glass is put in any part of the trap where they can see themselves. They are social little creatures, and where they see any of their tribe there they will go. I am quite sure of the effect the looking-glass has, as I properly "baited" my trap for a whole week without being able to coax one of the depreddators in; but the first night after putting in the looking-glass I caught two—one very large and one small rat; and every night since this device has made one or more prisoners.—*Cor. Germantown Telegraph.*

CRACKER PUDDING.

One quart of milk, one cup of powdered cracker, four eggs, two tablespoonfuls melted butter, half a teaspoonful soda, dissolved in boiling water. Heat the milk slightly, and pouring it over the cracker, let them stand together fifteen minutes. Stir into this, first, the beaten yolks, then the butter and soda; beat all smooth and add the whipped whites. Eat hot with sweet pudding sauce.

LOOK TO YOUR CELLAR.

Clear out all decaying vegetables, for the bad air will find its way into the rooms above and poison your wife and children, who may pine away and die. Do not in such cases lay it to some mysterious Providence. When the air is dry outside and near freezing, or a few degrees below, open the windows and cool and purify the air. Keep the windows closed on damp and warm and on very cold days. Pick up the rubbish; sweep up the litter; whitewash the walls and ceiling.

SYSTEM IN TABLE-SETTING.

Housekeepers would many times be spared the annoyance of missing needed articles, after being seated at the table, if they would pursue some system in its arrangement.

By way of explanation, when the cloth is laid, place upon the table the napkins, and if a child sits at table, its bib. Then the knives, forks, carving knife and fork, tablespoons and teaspoons. Next the plates, seeing that each is in its proper place and the number sufficient; then all dishes used in drinking, not forgetting the small children's. After the same method, all required seasoning, such as cream, milk, sugar, pepper, salt, or, if castors are used, see that each bottle is properly filled, and thus proceed through each division. One soon becomes accustomed to system in this department, omissions are rare, and the work is more easily and quickly done.

MRS. H. L. JONES.

Labor conquers all things. Everything that we do must have a certain amount of labor expended on it to bring it to a state of perfection. However difficult it may appear, however impossible it may seem to be, remember, if you attack it with energy, and labor with all your might, your efforts will be crowned with success.

Selecting Meats.

In selecting beef to roast, if it be for a small family, the rib is by far the best and most tender cut; have some of the bone removed, then make your butcher skewer the beef. The best beef-steak for broiling is porter-house. The best beef for a la mode is the round; have the bone removed and trim off all the gristle. For corned beef the round is also the best. For mutton roast choose the shoulder, the saddle or the loin and haunch. The leg should be boiled. Small rib chops are best for broiling; those cut from the leg are generally tough. Mutton cutlets to bake are taken from the neck. For roast veal the loin, breast or shoulder is good. Veal chops are the best for frying; cutlets are apt to be tough. In selecting beef, take that which has a loose grain, easily yielding to pressure, of a dark red color, smooth, with whitish fat; if the lean is purplish and the fat is yellow it is poor beef. Grass-fed is the lightest, ox the best, and next the heifer. Perhaps the nicest mutton roast is a small leg, the bone taken out and the cavity stuffed with forced meat. The best beef roast is (for three) about two and a half or three pounds of porter-house. Sirloin ranks next. A rump roast is very nice. Two or three pounds is a great plenty for three. In chops, I think that from the hind leg of mutton is best, unless you can get a "meaty" sirloin. The same in pork: about one and a quarter to one and a half pounds is sufficient; beef-steak about the same quantity. Porter-house is cheaper than sirloin, having less bone. Rump-steak and round, if well pounded to make them tender, have the best flavor.

Advice to Young Ladies.

1. If you have blue eyes you need not languish.
2. If black eyes you need not stare.
3. If you have pretty feet there is no occasion to wear short petticoats.
4. If you have good teeth do not laugh for the purpose of showing them.
5. If you have bad ones do not laugh less than the occasion may justify.
6. If you have pretty hands and arms there can be no objection to your playing on the harp, if you play well.
7. If they are disposed to be clumsy, work tapestry.
8. If you have a bad voice, rather speak in a low tone.
7. If you have the finest voice in the world, never speak in a high tone.
10. If you sing well, make no previous excuses.
11. If you sing indifferently, hesitate not a moment when you are asked, for few people are judges of singing, but every one is sensible of a desire to please.
12. If you would preserve beauty, rise early.
13. If you would preserve esteem, be gentle.
14. If you would preserve power, be condescending.
15. If you would live happily, endeavor to promote the happiness of others.

Saving Work.

An acquaintance, who manages to do the work for a family of six, and to get, besides, some time for reading and society tells me some of her ways, which I mean to put in practice, more or less. All of the family wear flannel next the skin in winter, and this washes more easily than cotton cloth, needing no rubbing when washed with a machine and good suds. The outer garments in winter are mostly made of worsted or woollen material, and so are sponged off when soiled, without the labor of washing and ironing. She reasons that if her boys can be decent in dark cloth garments, seldom washed all over, her girls, with neater habits, can do the same. So she puts a colored worsted or plaid polonaise on each girl instead of an apron, protecting it when dishes are washed or wiped with a sleeved calico apron, and at table with napkin or bib.

No doubt it would be the perfection of neatness to wear freshly laundered garments outside and in every day, but she has counted the cost and cannot afford it. With weekly changes of under flannel, frequent baths, pure air and wholesome food and drink, she hopes to maintain the family health without much expenditure of strength in washing and ironing outer garments. With the same end

in view, she carpets all of the rooms except the kitchen, and lays strips of rag carpet and rugs over parts of the kitchen. The flannel undergarments, being wrung with a wringer, are considered ready for use when clean, dry and well aired, without ironing. Night gowns being made of flannel or of soft blue cloth, are folded and put away dry, without ironing. Dish towels are treated in the same way. No ruffled garments are allowed in the washing, and no time is spent at the sewing machine in making ruffles or knife-plaiting. Seldom is any time spent in making cake or pie, some fruit usually satisfying all demands in the way of dainties or delicacies. The most common desert at her table, one satisfactory to each member, is a single good raw apple after the body of the meal.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—I want to talk to you this month about letters. I am very anxious that you all should early commence the practice of writing to friends, and learn to do it easily and well. Most persons have to write letters, either of friendship or business, and it is desirable that in doing so attention should be paid to a number of details. There is no doubt that a well written letter is often a great advantage to the sender, and always a pleasure to the receiver. It is essential to use good paper, pens and ink. Of all faults in letter writing, the most important to be avoided are bad spelling and bad grammar. I notice in some of my little Nephews' and Nieces' letters sometimes that they make a small i when speaking of themselves instead of using the capital I, and begin proper names of places and persons with small letters where capitals are necessary. There is another fault of which one may be guilty, it is to write whole letters as if it were a single sentence. They run on from beginning to end joining their words with its, ands, buts &c., and their name in conclusion winds up the whole. Of course such persons never think of stops, and indeed the use of stops or punctuation is very commonly neglected. A letter should be written in an easy and natural style as possible, and not a fine oration adorned with rhetorical flourishes, nor filled up with high sounding phrases, though the choice of words is very important. But dear Nephews and Nieces your old Uncle likes to read the simple letters you write with frankness and naturalness. It is good exercise for you at any rate, and affords me great satisfaction to read them.



TORONTO ENG. CO. We hope all will adopt this motto.

PUZZLES.

10—CONUNDRUMS.

1. What roof covers the most noisy tenant?
2. Why is coffee like an axe with a dull edge?
3. Why should you always have meat under done?
4. Why is it never high tide in France?
5. Why was the Emperor of Russia like a famished fox?
6. What would a 70-gun ship weigh?
7. What is it you must keep after giving it to another?
8. Why are games of chess of equal duration?

11—RIDDLE.

I'm slain to be saved;
With much ado and pain
Scattered, dispersed, and
Gathered up again.
Withered, though young,
Sweet, yet unperfumed;
And carefully laid up
To be consumed.

W. BROUGHTON.

12—CONVERSATION BETWEEN WORDS ALIKE IN SOUND, BUT HAVE DIFFERENT MEANINGS.

- First—"I am bright and shining."
Second—"I am a dark, evil thing."
First—"I stand at the entrance."
Second—"I always go on."
First—"I give wages."
Second—"I'm more elevated."
First—"I belong to the face."
Second—"I belong to the mind."
First—"I am very essential to the comfort of every house."
Second—"I'm a great discomfort to every one in the house."
First—"I am very peaceful."
Second—"I take everything by force."
First—"I am a perfect circle."
Second—"I twist and twist." M. B. H.

13—COMBINATION WORDS.

I am composed of six consonants and one vowel.
My first and last letters are often heard in a sick room.
My second and sixth letters are alike.
And my three middle letters name a troublesome animal. L. R.

14—CROSS-WORD ENIGMA.

In cloud, but not in sky,
In slow, but not in shy;
In hand, but not in finger,
In sulphur, but not in ginger;
In sad, but not in sorrow,
In night, but not in morrow;
In sea, but not in shore,
In sand, but not in ore.
My whole is the name of a poet.
SKY LARK.

15—ILLUSTRATED REBUS.

16—ELLIPSES.

Fill the blanks with the same words the letters of which are transposed.
1. If you keep up at that—I shall lose my—in the wind. 2. I don't—I will have my—
3. I'm running on—you little—!
4. The dull boy over his—gives many a wide-mouthed—. 5. Some bad boys make up a—when they are—at school.
6. We do not care to—with people who are—
7. It is a greater wrong to—a boy to break—at school than to do the same yourself. M. B. H.

17—HIDDEN AUTHORS.

1. Did Emil Tonridge recover?
2. He spoke words worthy of a philosopher.
3. Do you love green corn, Wallace?
4. The wren and bul-bul were fighting.
5. Yonder ran dolphins.
6. Roger shared his triumph.
7. One spark erased the labor of years.
8. That sort of wood smokes.
9. The red corn-bob broke in two.
10. My pet R. arched the evergreens.
11. Viola in yon chamber sleeps.
12. Frank lined his coat himself.
13. Robert, as so many are here, I'll go home.
14. Humph! Reynor, the idea is absurd.
15. Yes, her I danced with.
16. The mansion was consumed.
17. See Victor hug old Miss Ann.
18. It had a drab bottom.
19. I fear that Rolio perished.

LITTLE ONE.

18—DOUBLE ACROSTIC.

Walking through the—of our—town the—day, I thought it strangely like—a town in Canada; which—is one of the most beautiful places I ever visited.
The initials and finals give the names of two celebrated poets. R. A. S.

19—WORD-SQUARE.

- I.
1. A quadruped. 2. A narcotic. 3. The top of a slope. 4. A sweet substance. 5. A kind of sand. E. P.
II.
1. A month. 2. A river in Russia. 3. A bit of iron. 4. A girl's name. N. F.

20—WORD-SQUARES.

- I.
1. A body of water. 2. To encourage and aid. 3. An English county. 4. A girl's name.
II.
1. To be submerged. 2. A metal. 3. A letter. 4. Past tense of a common verb. N. F.
21—Curtail a beautiful marine production, and leave a girl's name. Behead, and leave an ancient coin. Curtail, and leave a conjunction. Behead, and leave a consonant.
22. Behead a part of the body, and leave a kind of tree. Curtail, and leave an article used in toilets. Behead and leave a preposition. Curtail, and leave a pronoun.

Answers to February Puzzles.

- 1—Who only asks for humblest wealth,
Enough for competence and health,
And leisure when his work is done,
To read his book,
My chimney nook;
Or stroll at setting of the sun;
Who toils as every man should toil,
For fair award, erect and free,
This is the man,
The best of men;
This is the man we mean to be.
2—Waste not, want not;
Covet all, loose all;
No rose without a thorn;
When the cat's away, the mice will play;
Haste makes waste;
Faint heart never won a fair lady.
3—(1) Flow, wolf; (2) Time, omit
(3) Guns, snug.
4—What can love be likened to;
To the glittering fleeting dew;
To heaven's bright, but fading
bow;
To the white, but melting snow;
To the fleeting sounds and view-
less air;
To all that's sweet and also and
fair.

- 5—Sea-Man-Ship—Tub.
6—Chili, Persia, Italy, Quito, Natal, China, India.
7—Ballantyne.
8—Thackery.
(1)—King, Idol, Nose, Glen.
(2)—Roap, Otho, Ahean, Pomp.
(3)—Mope, Over, Penn, Erne.
(4)—Opal, Pole, Alps, Lesne.

Names of Those Who Sent Correct Answers to February Puzzles.

James M. Taylor, Edgar west, Mannie B. Fraser, Frank Mc Norton, Martha Abbott, James Evans, E. A. Layton, Eleanor Mann, And Sutherland, Jennie Freshman, John Naram, John McArthur, H. Broughton, Andrew Proctor, Maggie Carlyle, Louis Farmer, M. G. Adamson, Thos. Johnson, James W. Jackson, Malcom McPherson, Mrs. Mary Ann Hepworth, Edwin Fuller, Minnie Barber, James Sutherland, Maggie Blair, M. North, H. W. Husband, Mary Adams, A. Hawkins, Maria Summers, Robina D. Scott, Wm. Barnes, Geo. E. Chitty, Samuel Evans, Jessie Thittermaster, James Jones, Anna McPherson, Charles Leach, Lizzie Mann, Edmond Whetter, James McDermit, John Lewis.

"Next Door."

About 9 o'clock yesterday morning a farmer-looking man entered a grocery store on Woodward avenue, having a jug in his hand, and he said to one of the clerks :—
"I want two pounds of nails and—"
"Next door," promptly replied the clerk motioning with his thumb.
The farmer entered the store next door, placed his jug on the counter, and said :—
"I want a gallon of molasses and—"
"Next door," said the proprietor, motioning to wards the grocery.
The farmer looked at him for a minute, and then went out and re-entered the other store. As the clerk came forward again the man with the jug remarked :—
"Why in blazes couldn't you have told me in the first place that I could get the molasses here and the nails next door! What's the use of being so mighty high-toned about nothing?"—*Detroit Free Press.*

Effects of Bad Company.

How important is it that young people should realize the bad effect that evil companions will have on the character, while they are undecided as to what position they are best suited to occupy through life. There is, truly, a vast difference in people, which is even manifested by little children while attending school. Some will pick up all the slang phrases that they chance to hear used, and learn all that is low and despicable, while in others who are exposed to the same example and associations, the habit will not be noticed half so quickly. But there is none of us, I think, to whom refined and honorable company is not more beneficial than companions who are well versed in the vice and wickedness of the world; for we cannot help, in time, imitating to some extent the ways and manners of our associates, and most surely it would be wiser to seek company amongst those whose influence is ennobling, and whose society lifts us up to a higher and better life than those who drag us down, down, to the lowest grade.

I once knew two young men who had always lived in the same neighborhood, attended the same school, and been associates from earliest boyhood. They were both smart and intelligent, and as their teacher declared, they were both smart enough to make very bad men, or very good ones. They left school, each bearing away a sought-for prize. One entered a seminary, and the other, traveling for pleasure and instructions, sought the far West, joined a company of gold diggers, and soon so far conquered his conscientious principles, that he could enjoy his beer and tobacco, and use bad language, with the best of them.

Two years pass by and they return. They are both much changed, but oh, how different! One, by two years of faithful study has fitted himself for any vocation that may be pointed out to him, —has prepared himself for usefulness that he may act his part in the drama of life and perform it well! The other has changed also; but as they stand together now on the old playground, one seems a creature to honor, the other to loathe. The frank, open face of the one contrasts strangely with the low, cunning look of the other. But two years ago they left school together, both full of bright hopes and anticipations for the future; but those two short years had wrought a wondrous change. They had given to the happy, hopeful youth a blighted character and a wicked heart. They had taught him to abandon the pursuit of that knowledge that was once so dear to him, and to become a slave to vice, to wickedness, and to ruin! There is nothing now too low and degraded for his attention, and yet he had some noble traits, and he might have been a noble man! How much has the world lost by his taking the first step into bad company, and going down step by step to the modes and customs of his associates, and ceasing at last to think or care of what is right.

We see such examples around us every day and strive to lend a helping hand, but in vain! Pride is in the way. We see the wealthiest citizens yielding little by little to the temptations placed before them, and what will be the result? What is to be done to prevent the sorrow that we can plainly see is awaiting some of our people? There is no way but to establish characters of our own. We must have our own ideas of right and wrong fixed and never permit them to be shaken; and now is the time to begin. Let us resolve to shun those that are rough and unprincipled and whose influence must be injurious and full of evil. And though we are often laughed at and slighted by our old associates, yet we are constantly gaining in the respect of those who are worthy; and what is better, we are laying a true and solid foundation on which we build in future years, which will never fall. We are also forming a character which the jeers of others cannot destroy, but which will shine forever. And if we shun bad company, and choose only what is virtuous and good, we will be lifted higher and higher, in our moral life, until we reach the throne of the Most High! M. M.

The best part of human qualities is the tenderness and delicacy of feeling in little matters, the desire to soothe and please others—*minutiae* of the social virtues. Some ridicule these feminine attributes, which are left out of many men's natures; but the brave, the intellectual, the eloquent have been known to possess these qualities; the braggart, the weak, never! Benevolence and feeling ennoble the most trifling actions.

In all worldly things that a man pursues with the greatest eagerness imaginable, he finds not half the pleasure in the actual possession that he proposed to himself in the expectation of them.

"Mother's Fool."

"'Tis plain to me," said the farmer's wife
"These boys will make their mark in life;
"They never were made to handle a hoe,
And at once to college they ought to go.
Yes, John and Henry, 'tis clear to me,
Great men in this world are sure to be;
But Tom, he's little above a fool—
So John and Henry must go to school."

"Now, really, wife," quoth Farmer Brown,
As he sets his mug of cider down,
"Tom does more work in a day for me
Than both of his brothers do in three.
Book learnin' will never plant beans or corn,
Nor hoe potatoes, sure as you're born—
Nor mend a rod of broken fence;
For my part give me common sense."

But his wife the roost was bound to rule,
And so the "boys" were sent to school;
While Tom, of course, was left behind,
For his mother said he had no mind.
Five years at school the students spent,
Then each one into business went.
John learned to play the flute and fiddle,
And parted his hair (of course, in the middle;

Though his brother looked rather higher than he
And hung out his shingle—"H. Brown, M. D."
Meanwhile, at home, their brother Tom
Had taken a "notion" into his head,
Though he said not a word, but trimmed his trees,
And hoed his corn and sowed his peas;
But somehow, either by "hook or crook,"
He managed to read full many a book.

Well, the war broke out, and "Captain Tom,"
To battle a hundred soldiers led;
And when the enemy's flag went down,
Came marching home as "General Brown."

But he went to work on the farm again,
Planting his corn and sowing his grain,
Repaired the house and broken fence,
And people said he had "common sense."
Now common sense was rather rare,
And the State House needed a portion there;
So our "family dunce" moved into town,
And the people called him "Governor Brown;"
And his brothers, that went to the city to school,
Came home to live with "mother's fool."

Advice to Boys.

Whatever you are, be brave, boys!
The liar's a coward and slave, boys;
Though clever at ruses
And sharp at excuses,
He's a sneaking and pitiful knave, boys.

Whatever you are, be frank, boys!
'Tis better than money and rank, boys;
Still cleave to the right,
Be lovers of light,
Be open, above board and frank, boys!

Whatever you are, be kind, boys!
Be gentle in manner and mind, boys;
The man gentle in mien,
Words and temper, I ween,
Is the gentleman truly refined, boys!

But whatever you are, be true, boys!
Be visible through and through, boys;
Leave to others the shamming,
The "greening" and "cramming,"
In fun and in earnest, be true, boys!

A clergyman, being much pressed by a lady of his acquaintance to preach a sermon the first Sunday after her marriage, complied, and chose the following passage in the Psalms as his text: "And there shall be abundance of peace—while the moon endureth."

Quite recently a short-sighted husband saw a large bouquet of flowers on a chair, and, wishing to preserve them from fading, placed them in a basin of water. When his wife saw the "bouquet" half an hour afterwards, she gave one piercing scream, and fainted on the spot. Her defective-visioned husband had mistaken her new summer bonnet, with its abundance of flowers, for a freshly culled bouquet.

Candid Husband: "I tell you what, Rose, it was well I didn't meet that superb creature" before our marriage." Wife (with equal candor): "It was, for you."

Benefit of Being Knocked About.

It is a good thing for a young man to be "knocked about in the world," although his soft-hearted parents may not think so. All youths, or if not all, certainly nineteen-twentieths of the sum total, enter life with a surplussage of self-conceit. The sooner they are relieved the better. If, in measuring themselves with wiser and older men than themselves, they discover that it is unwarranted, and get rid of it gracefully and of their own accord, well and good; if not, it is desirable for their own sake that it should be taken out of them. A boy who is sent to a large school soon finds his level. His will may have been paramount at home; but school boys are democratic in their ideas, and if arrogant, he is sure to be thrashed into a recognition of the golden rule. The world is a great public school, and it soon teaches a new pupil his proper place. If he has the attributes that belong to a leader, he will be installed into the position of the leader; if not, whatever his opinion of his abilities, he will be compelled to fall back into the rank and file. If not destined to greatness, the next best thing to which he can aspire is respectability; but no man can be truly great or truly respectable who is vain, pompous and overbearing. By the time the novice has found his legitimate social position, be the same high or low, the probability is the same disagreeable traits of character will be softened down and worn away. Most likely the process of abrasion will be rough, but when it is all over and he begins to see himself as others see him, and not as seen in the mirror of self-conceit, he will be thankful that he has run the gauntlet and arrived through by a rough road of knowledge.

Commercial.**London Markets.**

FARMERS' ADVOCATE OFFICE,
London, Mar. 1, 1878.

The markets have fluctuated considerably during the past month; wheat has at times tended to slight advance then receded to its nominal quotations. Barley has been firmer. Peas and oats have raised but slightly. Clover is low, and we see no prospects of its advancing this season. Much will be held by farmers and speculators. The crop is so large that a great proportion of this year's crop will not be wanted this year. Whether it will pay to hold or not will depend greatly on next year's crop. There is one thing to be considered who can hold it cheapest? British capitalists can command money at four per cent. Money is worth 6 per cent, and often more, to farmers. Farmers cannot keep it near as well as speculators. Dealers know when and how to keep it with the least loss. The average loss in our farmers' hands is five times greater than when in the hands of dealers. This may appear strange, but estimate the damage of rats to bags or bins. The losses by fire, theft and waste and shrinkage, and the prospects for next year's supply are all closer estimated and guarded against by speculators than by farmers. The farmer should be in a good position and well posted before he takes the place of merchant or speculator. The prospects for a good price for early cheese is very good, also first-class butter will be remunerative—second and third qualities will not pay as well as they have done. There is a good demand in England for good beef, and good horses, and good sheep. They have paid well and will pay better; but there is not one in ten, if any, consider stock fit to send to that market.

Dehl wheat.....	\$2 00 to	\$ 2 05
Treadwell.....	1 90 to	2 00
Red.....	1 85 to	1 90
Spring.....	1 50 to	1 75
Barley.....	80 to	1 14
Peas.....	90 to	1 05
Oats.....	90 to	93
Rye.....	— to	—
Buckwheat.....	1 25	90
Corn.....	90 to	1 37
Beans.....	1 00 to	1 15
Eggs, per dozen.....	15 to	20
Roll Butter, fresh.....	15 to	18
Tub Butter.....	3 00 to	3 50
Clover seed.....	3 50 to	4 00
Wool.....	28 to	30
Cheese, per lb.....	11 to	12 1/2
Hay, per ton.....	10 00 to	12 00
Straw, per load.....	2 00 to	4 25
Turnips.....	25 to	25
Carrots.....	25 to	30
Potatoes.....	55 to	60
Onions.....	60 to	70

Liverpool Markets.

Liverpool, Mar. 1, 1878.

Flour, 24s 6d to 27s; Spring Wheat, 9s 9d to 10s 10d; Red Winter, 10s 10d to 11s 6d; White, 11s 8d to 12s 1d; Club 11s 9d to 12s 8d; Corn, new, 26s 9d to 27s; Oats, 3s to 5s; Peas, 30s 6d; Barley, 3s 11d; Pork, 54s; Cheese 69s; Beef, 85s.

Chicago Markets.

Chicago, March 1, 1878.
Flour, steady and firm; Wheat, active and firm; No. 1 Chicago spring, \$1.10; No. 2 do., \$1.11 to \$1.11½ cash, \$1.11½ to \$1.11¾ March; No. 3 do., \$1.04½ to \$1.05. Corn higher; 43½c cash and April. Oats steady; 24½c cash, 25½c April. Rye firm, 55c to 56c. Barley irregular; 45½c to 47c. Dressed Hogs firm; \$4.25 to \$4.30.

New York Markets.

New York, March 1, 1878.
Flour dull; receipts, 10,000; sales 12,000; \$4.95 to \$5.75 for common to choice extra state; \$4.95 to \$6 for do. Western. Rye Flour steady. Wheat firm; receipts 131,000 bushels; sales 10,000 bushels; \$1.35 for No. 2 Winter red March. Rye firm; 73c to 75½c. Corn dull; receipts 47,000 bushels; sales 20,000 bushels; 51c to 56½c. Barley quiet; two-rowed State 65c. Oats steady; receipts 25,000 bushels; sales 14,000 bush. Peas—Receipts to-day 4,360 bushels. Canada peas nominally at 83c to 85c asked, in bulk and bond, as to quality. Barley Malt—Sales of 5,600 bushels at \$1.10 to \$1.20, 60 to 90 days, and 1,000 bushels old six-rowed State at 88c cash.

Toronto Markets.

Toronto, March 1, 1878.
Barley 50c to 63c; Spring Wheat \$1.00 to \$1.05; Red Winter \$1.00 to \$1.03; Treadwell, \$1.12 to \$1.15; Delhi, \$1.15 to \$1.20; Oats 35c to 36c; Peas 65c to 65c; Hogs \$5.50 to \$6.00; Flour, Superfine \$4.10; Spring extra \$4.50; Extra \$5.35; Superior, \$6.70; Butter 8c to 16c.

Montreal Markets.

Montreal, March 1, 1878.
Flour—Receipts, 1,300 barrels. Market quiet and steady. Prices nominally unchanged. No transactions reported on which to base a quotation.

We regret to report the death of Mr. Joseph Kirby. He has acted as F. W. Stone's herdsman for many years. He died on the 10th of February, from a fit of apoplexy. He will be much missed by all exhibitors of stock, and particularly by Mr. Stone.

Consumption Cured.

An old physician, retired from practice, having had placed in his hands by an East India missionary the formula of a simple vegetable remedy for the speedy and permanent cure of consumption, bronchitis, catarrh, asthma, and all throat and lung affections, also a positive and radical cure for nervous debility and all nervous complaints, after having tested its wonderful curative powers in thousands of cases, has felt it his duty to make it known to his suffering fellows. Actuated by this motive, and a desire to relieve human suffering, I will send, free of charge, to all who desire it, this receipt in German, French, or English, with full directions for preparing and using. Sent by mail by addressing with stamp, naming this paper, W. W. Sfarer, 126, Powers' Block, Rochester, N. Y. feb2

Patrons of Husbandry.

New Subordinate Granges.

626. North Bay—James H. Wager, M. Napanee; Jno. C. Carscallan, S. Napanee. 627. Balsam Grove—D. Kennedy, M. Peterboro; W. Stewart, S. Peterboro. 628. Otter—Thos. Miller, M. Lombardy; Clark Nichols, S. Lombardy. 629. Sunny Glen—Thos. McBratney, M. New Dublin; Jno. B. Barry, S. New Dublin. 630. Bethel—Wm. Evans, M. Camden East; James N. Switzer, S. Camden East. 631. Fairfield—Brook Cowan, M. Fairfield East; A. C. Johns, S. Fairfield East. 632. Glen Huron—Jno. McLeod, M. Glen Huron; Jno. Jamieson, S. Glen Huron.

Stock Notes.

Read Powell Bros. advertisement of Hambletonian and other strains of trotting stock.

There have been one thousand head of cattle fattened at Gooderham & Worts' Distillery, near Toronto. The Devonshire Cattle Feed has been used there extensively with marked success. There is a strong contest existing between the manufacturers of the Yorkshire and Devonshire Cattle Feeds, some prefer one and some the other. They are both highly beneficial in fattening stock. Those who have once used the feed for fattening are not apt to abandon it.

F. W. Stone, Morton Lodge, Guelph, reports very brisk sales of stock, and offers some excellent stock for sale. See advt.

The Cotswold Breeders' Association of Canada is now organized, and has already received a large number of entries for registry. The leading officers are—President, John Hope, Markham; vice-President, J. C. Snell, Edmonton; Treasurer, W. H. Miller, Claremont; Secretary, Arthur Johnston, Greenwood, P. O., and R. Craig, recording Secretary, Toronto, Ontario. The following rules of entry are adopted:—

Only such animals shall be admitted to the Record as are proved to be imported from the United Kingdom, or descended from such imported animals.

The breeder of the animal shall be considered the one owning the dam at the time of the birth of the animal to be recorded.

Each person shall name his flock, and number them consecutively from one (1) upwards; and in producing a pedigree for entry, the number produced shall in all cases agree with the number on the animal.

At a recent meeting of the American Cotswold Association, held at the Grand Pacific Hotel, Chicago, it was resolved to make the association a corporate body, with a capital stock of \$2,000 in shares of \$25 each. The organization is so nearly complete that the present subscribers stand ready to take the remainder of the stock, but it is desired that every reputable Cotswold breeder in the United States or Canada, who desires, may become a stockholder.

The North British Agriculturist reports that a well-known English stock-breeder has offered to the Earl of Dunmore the enormous sum of ten thousand guineas for the two-year-old shorthorn heifer the daughter of Duchess 97th, by the 6th Duke of Geneva. This extraordinary offer is conditional upon the coming calf of the heifer to be purchased being alive and a heifer.

The sales made by Mr. W. M. Millar, from the Echo Bank, of Cotswolds for 1877, were 110 head of sheep, bred on the farm, sold at an average of \$45 each, also 24 imported sheep at an average of \$98 each.

A representative meeting of breeders of Poland-China Swine for the United States and Canada was held at the Grand Hotel, Cedar Rapids, Iowa, January 23, 1878. It was unanimously agreed that a record for registering the pedigrees of this breed of swine had become a necessity. The following officers were elected:—President, W. P. Sisson; Vice-Presidents, B. F. Dorsey, Jos. Morton, Wm. A. Macy, S. A. Clark; Secretary, J. T. Mitchell; Treasurer, J. C. Traer. A standard of entry was agreed upon, and an Executive Committee appointed, whose duty it shall be to pass upon all pedigrees.

E. Jeff, Bondhead, Ont., has sold to George Axford & Sons, Tempo P. O., three well bred shorthorns, and to Seth Heacock & Son, Kettleby, Ont., one shorthorn heifer.

Mr. S. Wood, of Islington P. O., has purchased from Mr. George Rudd, of Puslineh, the Devon heifers that took the prizes at the last Provincial Exhibition.

Messrs. Snell's Sons report sales of 75 Berkshire pigs within the past four weeks; prices from \$20 to \$250 each. Their sales for 1877 are 141 Berkshires, average price \$66 each; and 93 Cotswold sheep, average price \$62. Lowest price \$25; highest \$225.

B. B. Groom, of Ky., has expressed an intention to locate on a stock farm in Colorado.

Mr. Jas. P. Dawes, sr., Lachine, Canada, writes us that he intends disposing of his entire Ayrshire herd at auction about the last week of March. It comprises about forty-four head. Further particulars appear in his advertisement.

Messrs. Wrill and Osborn, Clayton and Elkader counties, Iowa, have been making a tour of inspection amongst the Clydesdale horses of this Province. They express themselves as much dissatisfied with the Norman or Percheron horse that their country is flooded with, as being light, round-boned, poor of action, soon becoming of bad color, and of little value in comparison to our Clydesdales. Among their purchases in Scarborough is the young stallion "Scotland's Glory the Second," for \$1,000, bred by Mr. James Burrows.

Messrs. J. & C. Coughlin, of London, Ont., shipped 400 fat sheep for the English market one day lately, by the Dominion steamer Quebec, from Portland. They were a very even lot of choice Leicesters, averaging 150 lbs. per head. This firm will also ship shortly 600 sheep of the same breed from Portland for the London market.

Mr. Bonner, New York, is now driving his recent purchase, Maud Macey, in double harness, with Music. They are both of the same color (chestnut), are gaited exactly alike, and are of the same disposition. They work together like one horse. Music has trotted a mile with John Taylor in 2,23, on a three-quarter track—the fastest time ever made in double harness; and Major McDowell and other Kentuckians say that Maud Macey is the best trotter that ever left the Blue Grass region. Mr. Bonner expects to drive Music and Maud Macey in 2.18 together.

Mr. John Morgan, jun., of Adelaide, has purchased two thorough-bred Durham cattle. One is the famous cow Levina, bred by George Shipley, Esq., Falkirk. The other is the yearling heifer, Florence.

The attention of our breeders is directed to the advertisement of Wm. Long, in the usual columns. The stallions for sale, as many visitors will remember, were at the late Provincial Exhibition at London, Ont., and attracted general attention.

Money to lend on the most liberal terms. Apply personally or by letter to John Martin, Barrister, &c., 438 Richmond Street, London.

Seeds! Seeds! Seeds!

Spring Wheat. Champlain. Defiance. Lost Nation. Russian. White Fife. Gorden.

(The above are new varieties.)

Fife. Chillian. Red Chaff. Red Fern. Ballie. Manitoba. Minnesota. &c., &c., &c.

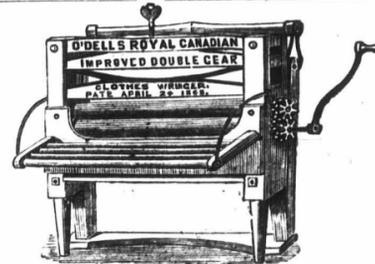
Oats—Black Tartar. Finefellow. Hopeton. Black Poland and Australian.

Peas, Barley, Silver-Hulled Buckwheat, Grapes, Field, Vegetable and Garden Seeds. Superphosphates, Bone Dust, Agricultural and Garden Implements.

For Catalogue, free, send to
Can. Agricultural Emporium,
London, Ontario.



ARE PLANTED BY A MILLION PEOPLE IN AMERICA. SEE Vick's Catalogue—300 Illustrations, only 2 cents. Vick's Illustrated Monthly Magazine—32 pages, fine Illustrations, and Colored Plate in each number. Price \$1.25 a year; Five copies for \$5. Vick's Flower and Vegetable Garden, 50 cents in paper covers; with elegant cloth covers, \$1. All my publications are printed in English and German. dc-1 Address, JAMES VICK, Rochester, N. Y.



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OUR WRINGERS
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THE BEST WRINGER MADE OR IN USE.

Sold by all principle hardware dealers in the Dominion. Ask for it. Take no other; or write us for Price List Catalogue.

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THE "CHAMPION" RECORD FOR 1877.

Over Thirty-five Thousand Machines Sold.

NO BREAKAGES—No vexatious delays in gathering the crops—NO CROPS DAMAGED while waiting for repairs—No telegraphing for repairs—NO REPAIRS TO BUY—No express charges to pay
 —Easily adjusted to all kinds and conditions of grass or grain—A CHILD CAN MANAGE IT—LIGHT IN DRAUGHT—A PERFECT MOWER
 —THE BEST REAPER—The most simple and durable of all Harvesters—The best and cheapest machine in the market.

Purchasers Always Entirely Satisfied. FOR 1878.

Forty Thousand Machines are being built,
 Steel Frames being substituted for Wrought Iron Frames,
 Malleable Iron chiefly used in place of Cast Iron.
 Only Five Pieces of Cast Iron in Combined Machines
 (Weight thereby reduced over Three Hundred Pounds).
 Single Reapers, or Light Mowers.

The result is that the "Champion" will be the lightest in weight and draught of any machine in the market, and at the same time equally as strong and durable, and as free from liability to breakage as those built in 1877. The manufacturers are determined that it shall excel in every particular all other machines offered, regardless of first cost, and have therefore taken this UNPRECEDENTED STEP IN ADVANCE OF ALL THEIR COMPETITORS in the manufacture of Harvesting Machines. For further information, address,
JOSEPH HALL MANUFACTURING COMPANY, OSHAWA, ONTARIO.

de-11

WE BEG TO CALL THE ATTENTION OF ALL FARMERS TO OUR **Wonderful FIRE-PROOF CHAMPION ENGINE** FOR THE ESPECIAL USE OF FARMERS AND THRESHERS!

Our Engine is so SAFE from FIRE that INSURANCE COMPANIES make no EXTRA CHARGE in their rates where it is used.

It will do any work that an Engine of its size is capable of doing

- THRESHING.**
- STEAMING FEED.**
- GRINDING FEED.**
- SAWING WOOD.**
- CUTTING STRAW.**
- SAWING SHINGLES.**

Or will Drive a 44 in. Circular Saw for Sawing Lumber, and will cut 500 ft. per hour of inch Lumber



FARMERS!

You cannot afford to have your Horses used up; your Grain wasted; your time taken up by threshing with the old-fashioned horse-power, when the CHAMPION ENGINE can do the same amount in two thirds the time without any risk from fire or wasting of Grain. We can guarantee perfect uniformity of speed whether feeding Separator or not. The speed can be instantly changed to suit all conditions of grain.

One-half Cord of Wood, and from 10 to 12 Barrels of Water will run Engine all day.
THE WATEROUS ENGINE WORKS COMPANY (Limited), BRANTFORD, ONT.

SEEDS, SEEDS

For 1878.
 Pure, Fresh and Reliable.

CROSMAN BROS will send their beautiful Illustrated Catalogue of Flower and Vegetable Seeds to any address on receipt of the stamp
CROSMAN BROS.
 ROCHESTER, N. Y.



THE CHAMPION CHOPPER

Will pay for itself in saving of toll alone in feeding ten head of Stock one winter. It will grind 5,000 bush. without renewing plates. This would save 500 bush., sufficient at ten cents per bush. to more than pay for Machine. Time saved going to mill will equal time and trouble of running Chopper. New Plates, \$6.50 per Pair. Read the following:—

TAVISTOCK, FEBRUARY 25, 1878.
 WATEROUS ENGINE WORKS CO., BRANTFORD,—I hereby beg to inform you that the Champion Chopper you sent me has so far given entire satisfaction to myself, also to my many neighbors who saw it running, and who are certain to purchase one. Let me know when you will have another finished.
 Yours, **ANDREW ZEBER.**
 Address, **The Waterous Engine Works Co., Brantford, Ont.**

BLACK HORSE HOTEL.

Corner George and Toronto Streets,
TORONTO, ONT.,

JOHN HOLDERNESS, Prop'r.

The largest stables in Canada. Accommodation for 200 horses.
Also, Breeder of Pure Berkshire Pigs. Correspondence solicited. DF-12

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TEMPERANCE ST., TORONTO.
[Established 1862.]

PROFESSORS:

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Buckland, Breeding and Management of Farm Animals.
Prof. Croft, Chemistry.
Prof. Grange, Demonstrator of Anatomy.
For particulars apply to the Principal, A. Smith, V., Temperance St., Toronto. db-11

COTTON YARN.

White, Blue, Red and Orange. Warranted the very best quality. None genuine without our label. Also, BEAM WARPS for Woolen Mills.

Send for Circulars, &c. Address—
WM. PARKS ON,
New Brunswick Cotton Mills,
St. John, N.B.
de-12

IMPORTED**CLEVELAND BAY STALLIONS For Sale.**

I offer for sale—Lord Zetland, Emperor, Dalesman 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.

AMERICAN INSTITUTE. QUINTUPLE HIGHEST AWARDS

1873! 1874! 1875! 1876! 1877!

WHEELER & WILSON'S New Machine, THE BEST IN THE WORLD**Unanimous Opinion of the Judges.**

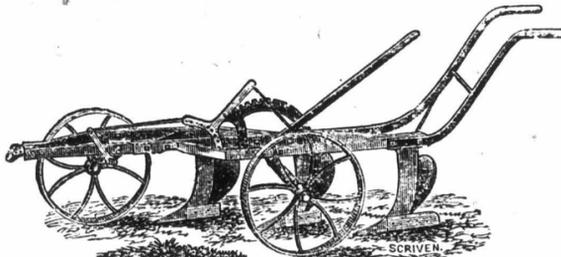
1873. "This Machine is a decided improvement over all other machines in the market, and fully merits the Grand Medal of Honor."
1874. "We unanimously recommend it for the highest award which it is in the power of the Institute to bestow."
1875. "We unanimously recommend that the Great Medal of the American 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, corroborated 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 respectfully recommend that the GREAT MEDAL of the American Institute be awarded to the manufacturers for the same."
"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 recommend for it the highest recognition under the rules that can be awarded."

THE SPECIAL MEDAL OF 1877.
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Wrought Iron Frame.



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The most successful at Plowing Matches and Exhibitions during 1877, and has given entire satisfaction to all who have used it.
Send for circular, terms, &c. Manufactured by

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IMPORTED AND THOROUGHBRED
AYRSHIRE CATTLE, CLYDESDALE and other valuable HORSES, BERKSHIRE PIGS, IMPROVED IMPLEMENTS, HARNESS, ETC.

The subscriber is instructed by JAMES P. DAWES, SENIOR, ESQ., to sell at his well-known Farm, LACHINE, near MONTREAL, on WEDNESDAY, 27th MARCH, the whole of his splendid stock, including 33 FINEST PURE-BRED AYRSHIRE COWS and HEIFERS, the thoroughbred Bull, "Dunkirk," C. K. 1,249; the thoroughbred Alderney Cow, "Louise;" 8 Heavy-Draft Horses, by imported Clydesdale and Norman Horses; Trotting Mare, "May Flower;" thoroughbred Stallion, "Brage-lonne;" and other valuable horses; 20 THOROUGHBRED BERKSHIRE PIGS, all from Imported stock.

FARMING IMPLEMENTS.—Combined Reaper and Mower, Mowing Machine, Plows, Harrows, Farm and Market Wagons, Carts, Seed Sowers, Root Cutter, Sleighs, Harness, etc., etc.
Sale at ten o'clock; cattle will be sold at one o'clock. Catalogues, with pedigrees, etc., ready.

JOHN J. ARNTON, Auctioneer,
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Indicating the Weather about 48 hours in advance. Sent by mail for 25 cents. Address—NIELSEN & OSTERHOLM, P. O. Box 4542, New York City. dc-1

BERRY PLANTS

Mammoth Cluster, Seneca Clark, and other Raspberries.

New Dominion, and other Strawberries.
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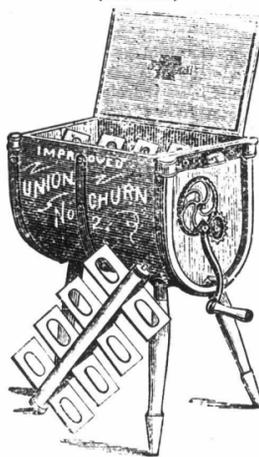
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25 CARDS—25 styles, 10 cents, or 20 Chromo Cards, 20 cents, with name.
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New and Second-Hand

BOILERS AND ENGINES

Portable Engines and Boilers, complete, suitable for farmers' use, from \$100 upwards. Boilers for Hot-houses, and for Steaming Cattle Feed, a specialty. Turning Lathes, Boring Mills, Drilling Machines, and other Machinery on hand for sale.

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Manufacturers of
Superphosphate of Lime, - - - \$30 per Ton
Fine Bone-Dust, - - - - - 30 "
1-2 inch " - - - - - 25 "
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Diploma was awarded to us at the Provincial Exhibition, Sept. 23, 1852, for the first Bone Mill established in Upper Canada.

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The best Spring Wheat we ever grew. Yield -31 bushels per acre. Price, - \$2.00 per bushel.

REDFERN.

A hardy and good Millers' Wheat. Price, - \$1.50 per bushel.

Also a few bushels of

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Price, - \$2.50 per bushel.

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Is the best preparation known for fattening HORSES, COWS, SHEEP, PIGS, etc., etc., with great saving of Time and Money. It gives strength and life to Horses even during hard work. COWS fed with it produce more milk, and the butter does not taste of turnips.

FOR STALL FEEDING CATTLE

its effects are marvelous.

Farmers and Stockmen have told us that a ONE-DOLLAR BOX is worth more than an extra TEN BUSHELS OF GRAIN.

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All the reliable novelties in style.
Courtesy and attention to our customers.
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TYTLER & ROSE, Family Grocers and Seedsmen. Timothy and Clover seed; all kinds of field seed, turnip, mangel, etc., etc., imported direct by themselves, and of the very best quality. Land Plaster. TYTLER & ROSE, Wine merchants and Seedsmen. Du-las Street nh-21