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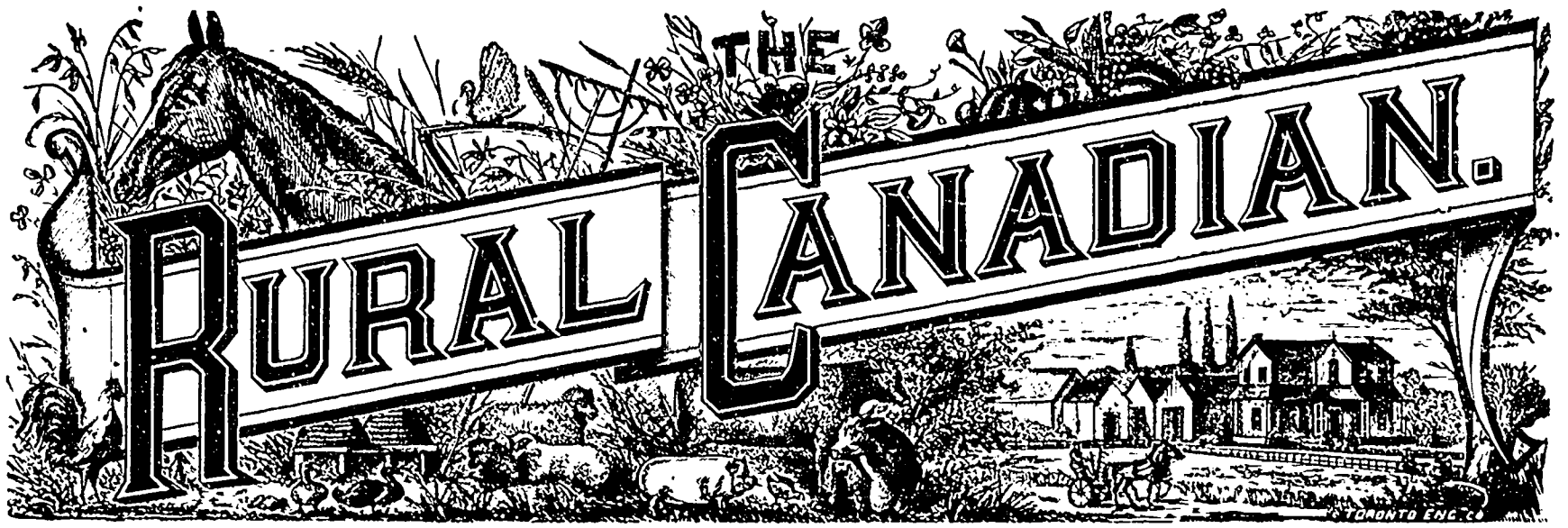
THE RURAL CANADIAN.

Vol. III. No. 9. *Toronto, September, 1884.* $1 per annum, in advance.

THE YOUNG SHEPHERDS.

C. BLACKETT ROBINSON



Vol. III. No. 9. *Toronto, September, 1884.* $1 per annum, in advance.

RURAL NOTES.

A VESSEL holding 100 pounds of water, will hold 103 pounds of milk.

OCEAN freight rates have improved with the prospect of a large surplus of wheat, and the average is fifty per cent. higher than six months ago.

THE recent rains will greatly improve the root crops, and will also leave the ground in fine condition for promoting the growth of the new crop of wheat.

IN fattening stock our best breeders go upon the principle that, the steadier and evener the grain, the better and more remunerative is the result of feeding.

IT is estimated that the wheat crop of Manitoba and the Northwest territories this year occupies an area of 400,000 acres, and that the product will average 20 bushels per acre. This will give a surplus for export of five or six millions, the bulk of which will doubtless find its way to the Minnesota and Ontario flouring mills.

THE exhibition season is now upon us, and we shall look for a fine display of the country's products, whether of grain, live stock, manufactures or the arts. The Industrial and the Provincial Societies will endeavour to surpass themselves this year, and with a season so exceptionally favourable we shall be surprised if they do not.

THE plan of pasturing clover fields intended for a seed crop to the middle of June seems to be the only sure way of escaping the ravages of the clover midge, and it seems a pity that it is not more extensively adopted where a grass crop is to be fed on the farm—as the bulk of it always should be—it matters very little in respect of gain or loss whether a portion of it be fed at one time or another. There is as much profit in January feeding.

THE milling business is in a bad way in the Province, and millers are anxious to have some change made in the scale of duties on flour and wheat. At a convention held in this city a short time ago it was pointed out that whereas the duty on flour was 50 cents per barrel, the duty on its equivalent in wheat is 71¼ cents, and it is proposed to request the Government to make such alteration in the tariff as will put the Canadian miller on even terms with the American. Patent process flours are being imported from Minneapolis and retailed in the Provincial markets at $2.40 per 100 pounds, and our millers complain that this competition is ruining them.

THE high prices at which stall fed cattle were bought by shippers in this Province last winter, and the tumble which took place in prices before the cattle reached the English markets, have resulted unfortunately for several of the leading dealers. One Montreal man is reported to have lost a quarter of a million, and almost without exception the shippers are worse off now than they were six months ago. In a few instances, however, where purchases were carefully made, fair profits have been realized and the trade is by no means discouraging. One thing is certain, that at a price considerably under the ruling one of last winter cattle-feeding will pay better than wheat-growing in this Ontario of ours.

THE hearts of Ontario's farmers were made glad by the rich promise of the wheat fields, and business men as well as farmers were encouraged to believe that the harvest would greatly help to tide over the depression in trade. But in almost every other part of the agricultural world, as well as in Ontario, the wheat harvest has been remarkably good, and within a month the prices have dropped from 15c. to 20c. per bushel. Taking our surplus at 20,000,000 bushels, this means a loss of about $4,000,000—a sum which if realized would go far to give tone to the pulse of commerce. We are less sanguine than we were one month ago of the benefits of a good harvest.

PLEURO-PNEUMONIA has broken out in several localities in the Western States, more especially in Illinois and Iowa. Hitherto it has been pretty closely confined to localities on the Atlantic coast, and for lack of energetic action on the part of the authorities it has survived there for several years. Its progress westward is said to be due to the recent sale of Jersey cattle by an Ohio breeder, and fears are entertained that it will prove very destructive among the large herds of the prairies. The Texas fever has also been making progress northward recently, and between the two diseases cattle men are likely to suffer serious loss. We trust that the officers in charge of our own quarantine stations will exercise the utmost diligence, and see that the regulations are rigidly enforced. The proposal to allow Wyoming cattle to be shipped through Canada to England ought not to be entertained for a moment.

THE district of which Owen Sound is the centre has for several years enjoyed an excellent reputation for fruit culture, but the facts have recently gone against it. Pear and plum trees especially have been overtaken with disaster, and thousands of them are dying or dead. About a year ago some form of blight appeared in the orchards of Bruce and Gray; the fruit and leaves were seen to wither and drop off; and the trees were evidently in a low state of vitality. It was hoped that spring time would show that the blight was only temporary in its character, and that the trees would give evidence of re-established health and energy; but instead of that the malady has been increasing in intensity, and the scientific horticulturists are unable either to understand it or to account for it. In one orchard in Owen Sound, where a year ago there were 1,100 plum trees healthy and laden with fruit, there are now only two living trees.

PROF. THOMAS TAYLOR, of the United States Department of Agriculture, has recently made an interesting report of a series of microscopic observations on butter and fats, and he furnishes the following simple test for discerning the genuine and the bogus article: "Combine a few drops of sulphuric acid with a small quantity of pure butter, and the butter will assume first an opaque whitish-yellow colour, and after a lapse of ten minutes it will change to a brick red. Oleomargarine made of beef fat, when treated in the same manner, changes at first to clear amber, and after the lapse of about twenty minutes to a deep crimson." It is possible that more bogus butter is consumed in Canada than the public suspect. Toronto men are sometimes accused of importing considerable quantities from Chicago, and possibly it is a home product—but if the latter, the fact is very carefully concealed. All dairymen as well as all consumers are interested in suppressing the oleomargarine trade, and Prof. Taylor's test may be found a valuable aid to that end.

WITHIN the short period of ten years the value of India's annual exports of wheat has risen from $800,000 to $15,000,000, and the bulk of the product has come into competition with American wheat in England. British capital has been used to build railways into the heart of the wheat-growing district of India, and these railways are now delivering grain at the seaports cheaply and expeditiously. How much it costs to produce a bushel of wheat in that country as compared with America may be comprehended when we say that the wage of a farm labourer in India is ten cents per day. India is America's coming rival for the supply of breadstuffs to the British consumer; and the decline in prices this year, when harvests are bountiful everywhere, is an indication of what the future has in store. It is not improbable that ten years hence India will have so enlarged her wheat-growing area as to produce a sufficiency for the British markets, and we may rest assured that the country which takes British manufactures in exchange for breadstuffs is the country which is going to take the lead in this particular trade.

FARM AND FIELD.

NEW INSECT PESTS.

The following are extracts from a paper read by Mr. W. Brodie, President of the Natural History Society, at a recent meeting of that body:—

The *Pegomyia bicolour*, noticed by Rev. T. W. Fyles, in the April number of the *Canadian Entomologist* as a "leaf mining fly new to Canada," occurring in Rumex leaves in South Quebec, has already been reported to the Society, as occurring in leaves of mangolds grown in the Township of Scarboro'. Since then I have found it common everywhere around Toronto, the Humber, Ashbridge's Bay and marsh, on a native dock, *Rumex obtusefolius*. I have also found it at Guelph, Harriston, Wiarton, Spry, Tobermory and Horse Island, on native docks, *R. obtusifolius* and *R. verticillatus*. This wide distribution shows it to be native to Canada as well as to Europe. Out of 27 samples of mangold and beet leaves from different points in the counties of York and Ontario, I have found it in the earliest only.

But I have to report to you the occurrence of a worse enemy—an English insect, *Pegomyia betae*, closely resembling *bicolour*—almost undistinguishable from it in the larvæ form—most likely introduced into Ontario within the last five or six years. I have found it without exception in 31 samples of leaves, gathered in the counties of York, Ontario and Halton. This season the fly appeared about the first of June; by the 19th most of the larvæ were mature, many had begun to pupate. About 4th July the imagoes began to appear, and were very abundant in mangold fields about July 12th, and now, although the weather has been cold, the second brood of larvæ are maturing. There are always two broods, and there may be three or more in one season. So you see it has qualities which make it a formidable enemy to mangold culture. Out of the many samples of leaves I have carefully handled, and the many hundred flies I have bred, I have as yet not found a parasite. No doubt they are to be found in Europe or elsewhere, and should be sought after and imported.

PLATYGASTER ERROR.

I would again direct your attention to the clover midge, *Cecidomyia Leguminicola*, the very serious injury it has already done, and the difficulties in arresting its progress. Two Hymenopterous parasites have been described. In the Washington report of the Commissioner of Agriculture for 1879, Comstock, in speaking of one of them, says:—"It has been found only as yet in specimens from Yates county, N.Y." I am very glad to report to you that I have found it in nine samples of clover heads from two neighbouring counties, York and Ontario. About one per cent. of the midge pupa were parasitized. This is a good beginning, and I would urge on all observers the necessity of carefully working out the life history of this valuable little insect in this Province, with a view of aiding its increase.

In the *Canada Farmer* of July 15th, 1875, is the first record of the occurrence of *Pteromalus puparum, Linn., P. pieridis, Prov.*, in Ontario. It was then expected this parasite would destroy the butterfly, but as you know, this expectation was not realized. We now know many of the reasons for this. I now report the occurrence in this Province of an English parasite. *Hemiteles melanarius*, no doubt introduced within the last few years. Its life history is such that it is protected from many of the casualties which have prevented the increase of *P. pieridis*. To this species, *H. melanarius*, we owe the remarkable decrease last fall and this summer in the cabbage butterfly.

This is a sample of Alsike clover, collected by Mr. W. Rennie, seedsman, of this city, and handed to me about three weeks ago. The crop presented a sickly and weathered appearance, and on close examination it was found that the seeds were quite eaten away by some insect. It is a minute and, I think, undescribed species of trips. They were very numerous, thousands of them on a few square inches, averaging more than 50 individuals to a head of clover. All members of the group to which this species belongs are characterized by habits injurious to plants, many of them too well-known as gardeners' and fruit growers' "pests." This species if "let alone" will most likely put Alsike out of our Province.

A BRIGHT OUTLOOK.

According to the Report of the Bureau of Industries for August a good harvest of grain crops in Ontario seems to be well assured. The fall wheat gives an average yield of 21¼ bushels and the spring wheat of 18½ bushels per acre—the average of both being 20 bushels,—and the aggregate production exceeds that of last year's harvest by 10,360,000 bushels. Barley was a good crop in the southern and south western counties of the Province, but in the northern and north eastern counties it was affected by the summer drought. The grain, though plump and heavy, was in large areas discoloured by the rain showers of the last week of July. The accounts of the oat crop are much the same as for barley, but, being two or three weeks later in ripening, it has been greatly benefitted by the July rains, and the yield will possibly exceed the estimate. The area in rye is much less than last year, and the average yield about the same. Peas is a bountiful crop, and is ripening under the most favourable circumstances. The pea-bug has done much less harm than usual this year, and in many localities throughout the west it has hardly appeared at all.

The area and production of the foregoing crops for two successive harvests are given as follows:

	1884		1883	
	Acres	Bushels.	Acres.	Bushels.
Wheat.....	1,586,961	31,730,341	1,682,616	21,370,069
Barley....	701,435	17,860,777	757,156	18,414,337
Oats.....	1,185,620	49,383,000	1,418,309	54,573,609
Rye.....	101,141	1,630,417	188,111	3,012,240
Peas.....	570,628	13,106,062	542.717	10,673,723

The hay crop was injured to some extent by the frosts of the last week in May, and more seriously by the drought of June. The yield is estimated at 3,044,912 tons, or 1,000,000 tons less than last year. The appearance of the corn crop is not promising, due partly to inferior seed, and partly to the low temperature prevailing throughout June and July. The fortune of the crop depends on the weather of August and September. The area planted is 174,834 acres. Beans have suffered from the drought and the cool weather, and they will mature a week or ten days later than usual. The plants, however, are strong and healthy, and being well loaded a good crop is likely to be gathered—the estimate being 2,953 bushels from an area of 24,877 acres. The reports of the root crops are generally favourable. Potatoes are excellent, and mangolds and carrots are fairly good. Turnips made slow growth at first, owing to the dry weather, but the recent rains have been very beneficial. The area in potatoes is 168,862 acres; in mangolds, 18,341, in carrots, 10,980 acres, and in turnips, 104,108 acres. The total area in roots is 302,291 acres, or about 8,500 more than last year.

MIXED husbandry is what we need. The farmer who grows something of everything adapted to his locality will be safer, and in the long run will save more, than he who devotes his energies and land mainly to one or two crops.

CARE OF NEWLY SET TREES.

While it is very important that only really good trees should be selected to transplant, and equally important to set them in the best manner, it is even more important that the best of care should be given the tree after being set, not only until it shows that it is alive, but during the entire season it should be carefully looked after; in fact as a rule, a tree is not fully established until the third year, therefore should not be neglected until it has been transplanted several years.

Soon after a tree is set it should be liberally mulched with partially decayed leaves, covering the ground a little beyond where the roots extend. To keep the leaves from blowing away, they should be covered with stones, sticks of wood or short pieces of boards. Never heap up any material about the trunk of a tree except fresh earth. The mulch should be spread evenly on the ground, and care should be taken not to let it dry through during a drought, but it should be watered as often as it shows any indication of being dry. In a very dry time not only should the mulching around a favourite tree be kept wet, but the ground a few feet beyond should be watered. On cultivated land the mulching may be omitted, if the land be light and loose on the surface. It is important to keep the whole land moist if the best results are expected, because if only a small space where the roots of the tree are to be watered, the water is very rapidly absorbed by the surrounding dry soil, and thus prevent a vigourous growth, if it does not dry the tree up entirely before the owner is aware of it.

Having properly cared for the roots of the newly set tree, the top should be the next care, especially if it be a tree with a long trunk before coming to the branches. The practice of cutting off all the lateral branches is so universal that almost every tree that is set has nothing to protect it from the direct rays of the sun for the first four to six feet, unless artificial protection be resorted to, which always should be to trees that have had the lateral branches removed. This protection may be very simple; a single thickness of coarse matting tied around the tree is sufficent, or even a limb of a cedar tree set in the ground on the south side of the tree, or a board set up so as to shade the trunk of the tree during the hottest part of the day, will do much to keep the trunk from being scorched by the sun. Many trees are lost during hot weather for the want of some protection for the trunk. This is wrong, because the expense is so slight every one who sets a tree can find the time or means to do it.—*Massachusetts Ploughman.*

THE MECHANICAL FARMER.

The farmer who is not is one-half a farmer. Not that he needs special training in mechanics, though this would not come amiss, but he should have a "mechanical eye," that is, ability to see clearly through any intricacies that there may be in machinery of the farm, and have a "faculty" for fixing things when out of fix, as often enough occurs with the mower, the rake, or the plow. The ordinary wear and tear of farming tools is very great under the most favourable conditions, and frequent breakdowns are inevitable. If he can turn his hand to both the blacksmith's hammer and the carpenter's plane he is truly fortunate. Yet how many helpless farmers there are. If a shaft breaks or draws out in a hayfield, if an axle springs, or a bolt or bar bends on a plow, cart, or other utensil, away he goes to the "Corner" to get it mended or bring it assistance, while the whole work of the farm waits. If a board or shingles are blown off the barn, or a shed door gets off the hinges, or needs to be "eased"

to make it shut, if the hay-rack or cart-body gets away and needs a new top-rail or bed-piece, he either lets it go until necessity compels him to tinker it up, or hire his next neighbour—who is handy with tools—to repair it. This want of ability to keep his farm tools and buildings in order keeps him continually in a fret, entails a heavy bill of expense yearly, and too often paves the way to failure. Every farm should have a roomy workshop well supplied with the common tools, and the boys should be encouraged to handle them, instead of being shouted at and scolded if they take a saw or auger in hand, for from boys are poor or good farmers made. Simply being able to draw a straight furrow, or to sow or plant in good season, does not constitute a good farmer; he must be what the theatre people call a "general utility man"—handy with the hammer and nails and not wholly unused to the saw, the square and compass, the plumb and twenty-four inch rule.—*Bedford Journal.*

HIRING FARM HELP.

Where a farmer hires a man for a definite term of service, and for a definite rate of wages, to do a specified kind of work, the contract is express. But where the farmer simply requests the man to work for him, and nothing is said about the time, or pay, or where the relation of the employer and employe is formed without a full and definite understanding, the contract is implied, and its lacking terms or conditions must be supplied by law. A contract of hiring for one year or less, need not be in writing. If for more than a year, it is not binding unless in writing, and either party can terminate the agreement at pleasure.

Express Contracts.—Where the hiring is for a definite time, both parties are bound by it until the time expires. The employer must furnish work, and the employe must labour to the end. If the master discharges the workman without legal cause before the time expires, the workman will be entitled to his wages up to the time of his discharge, and also such damages as he has suffered by being thrown out of his job. These damages will probably be the amount of the wages up to the end of the time of hiring, less what the workman has earned or might have earned at other employment. If the workman leaves without legal cause before his time is up, the great weight of authority is that he is not entitled to any compensation for the time that he has worked, though several highly respectable Courts have held that under such circumstances he has the right to the wages due him up to the time of leaving, less the damages occasioned to his employer by his leaving.—*H. A. Haigh, of Michigan, in American Agriculturist for September.*

AUTUMN CARE OF MEADOW LAND.

Meadows should not be closely grazed at any time, and especially not in the fall. They need to have fertilizing materials added to instead of taken from the soil. Young animals are much more injurious than mature ones, while full-grown stock that are being fattened, and are fed rich grain rations, may by their droppings add materially to the fertility of the soil. Young-growing stock withhold a large share of the potash, phosphoric acid, and nitrogen of the food to build up their bodies, leaving the manure comparatively poor. On the other hand mature fattening animals need very little of these three chief elements of soil fertility. Aside from the loss of plant-food, the close feeding of stock on meadow land does mechanical damage. If the soil is soft, the feet of the animals injure it, and the close grazing pulls much of the grass up by the roots. Meadows, like winter grains, are injured by freezing and thawing, and the plants need to be in a vigourous condition in late fall, with a good growth of aftermath for protection from the frosts, winds, etc. Well-rotted manure applied to the meadows as a top-dressing, will strengthen the plants and insure a fine crop the next season. This application is best when made soon after the hay is removed. Later in the season much of the soluble material is washed out of the soil by the fall rains. Quick-acting manures should be used in the growing season, otherwise loss is sustained. Take good care of the meadows, for they suffer greatly if abused. They are easily and often injured by animals in late autumn. *Dr. Halsted, of N. J., in American Agriculturist for September.*

WHY WE PLOUGH IN AUTUMN.

On this subject a practical farmer writes: Close observation for more than two scores of years, teaches us that maximum crops are more uniformly secured upon the ground that is ploughed in Autumn or early winter. Even a casual observer is aware that fineness and firmness of soil are essential to quick germination of small seeds, and the healthy growth and the perfect maturity of the plant. These two mechanical conditions of the soil differ so widely from each other as to render it extremely difficult to secure one except at the expense of the other. This is accomplished more perfectly by fall ploughing, where the seed is to be sown or planted in early spring-time, and we deem it of the utmost importance that all crops be started early. Again, scientific men tell us that "Matter must somewhere in its course become soluble before it can be taken up and appropriated by the plant." Be that as it may, we are reasonably sure that mere plant food is developed from soil ploughed in the fall and fully exposed to the winter's frosts and drenching rains of spring-time, and the beneficial effects sometimes extend over a whole course of cropping. The intelligent reader will call to mind instances where a good catch of grass was secured by reason of these conditions, and abundant crops produced for a series of years, when with spring ploughing the results would have been the opposite. There are some exceptions to this rule, but it will apply to a wide range of tillage land.

MAKING ROADS.

With the press of farm work over, as it will be soon, we may expect road-making to engage attention in a great many districts. There is just one word of caution applicable now, but it is doubtful if it will be heeded. It is this: Don't pile the fresh earth from the road sides on the beaten track; don't draw mud from the ditches into the roadway. The best thing that can be done with the roads at this time of year is to clean them of stones, fill in mud holes with stones or gravel, and for the rest wait until spring, except as the best material be used when work is attempted. Nothing is more absurd, when considered as an improvement, than the usual way of piling fresh earth upon the road-way just in season to receive the fall rains, and make an unending stretch of mud until freezing weather, and the roughest possible course during winter.—*The Husbandman.*

We are not as careful of our pastures as we might be in most parts of the country. There is work in cutting the weeds, but it often will be work for which a large return will be made. So, too, it often pays well for the time taken to run over parts of a pasture that have become "patchy" with rank grass or grass mixed with weeds, setting the machine high.

HOUSEHOLD HINTS.

Grated cheese is sometimes sent to the tea-table heaped in cone shape on a china plate, and is eaten with unwonted relish.

Apple Cheese.—To each pound of pulp add two ounces of butter, the juice and rind of half a lemon, the yolks of two eggs and white of one; boil again gently until it thickens. This makes a delicious filling for tartlets or open tarts.

To make cloth waterproof, in ten gallons of water dissolve two pounds and four ounces of alum. Dissolve the same quantity of sugar of lead in the same quantity of water, then mix the two together. Pour off the clear liquor, immerse the cloth in it for an hour, take it out, dry it in the shade, wash in clear water and dry again.

The following is a good way to mix whitewash so it will not rub off: Mix up a half pailful of lime and water ready to put on the wall; then take one quarter pint of flour, mix it up with water; then pour on it boiling water, sufficient quantity to thicken it; pour while hot into the whitewash; stir it altogether and it is ready for use.

Milk porridge can be varied so that an invalid will not tire of it soon. Put a dozen raisins in about two cups of milk, boil for five minutes; they will flavour it agreeably, though they are not intended to be eaten. A little nutmeg can be added, or the white of an egg beaten light may be stirred in, just after the milk is taken from the stove.

Croup can generally be greatly alleviated, if not cured very speedily, if the following remedy is applied promptly: Take a knife, and grate and shave off in small particles, about a teaspoonful of alum; then mix it with twice its quantity of sugar to make it palatable, and administer it as soon as possible. Almost instantaneous relief will follow.

Meadow hemlock is said to be the hemlock which Socrates drank; it kills by intense action on the nerves, producing complete insensibility and palsey of the arms and legs, and is a most dangerous drug, except in skillful hands. In August it is found in every field, by the sea shore and near mountain tops, in full bloom, and ladies and children gather its large clusters of tiny white flowers in quantities, without the least idea of their poisonous qualities. The water hemlock, or cow bane, resembles parsnips, and has been eaten for them with deadly effect.

Minimize as we may the progressive contamination of an inclosed inhabited space, the contamination is still progressive, and, without renewal of the air, in a few hours you will reach the boundary beyond which lies impaired health. Open your windows, pull up your window-blinds, turn up your mattresses and bedclothes, and every morning let the products of the night be swept out by the incoming current of fresh air. Then, all through the day remember to have a small chink open at the top of your windows; or, better still, raise the lower sash, close the opening beneath with a piece of wood fitting closely, and so the air will enter at the junction of the sashes and pass upward without draught. The secret of ventilation without draught is a little and constantly. Once permit the air to become close and stuffy, and the moment you endeavour to remedy this result of carelessness, a cold draught will rush in and the fear of injury will cause you to stop it. The mere fact of living in a close atmosphere begets a shivery, susceptible condition of body, which is intolerant of the slightest sensation of chill. If you accustom yourself or your children to fresh air, you become robust, your lungs play freely, the vital heat is sustained, and even a draught becomes exhilarating.

HORSES AND CATTLE.

BREEDING FOR SEX.

A correspondent of the *Breeders' Gazette* writes: Can we control this matter? Is it not beyond our reach? What do we know of its laws? These and similar questions are discussed among all intelligent breeders. Prof. Thury claimed that he could control the sexes. If the male is given to the female in the first hours of her heat, the offspring will be a female; but if delayed until the last part, the result will be a male. Then there is another theory—the alternate heat theory. That is, if the last calf was a heifer, if served in her first heat her calf would be a male and in her second it would be a female, and so on.

Years ago I tried both rules, but got bulls when I should have had females. Out of fourteen cows bred in this way for heifers, they gave me twelve bulls and three females. Yet the theory is very generally believed in, and men breed as they say according to a great law, and they get just what they breed for. But repeated trials did not help me, and so I gave it up. Then with another bull, paying no attention to these rules, I have succeeded to my satisfaction. Ninety-eight cows bred to Lemon Rex 5458. A J. C. C.; eighty-four have produced females. This has convinced me that we must depend upon the tendency in the sire to get one or the other. It has long been doubted that the ovum of the female has anything to do in determining the sex of the offspring in the slightest degree. No one claims that life first appears in the egg of the female; for within the spermatic fluid of the sire organic life first manifests itself to our sight. Thousands of active living beings exist in a single drop. If but one of these gains the inside of the ovum it will be impregnated, and the spermatozoid is developed into a fœtus, and finally into a calf. If this is true, must we not look to the bull, and not to the cow, for the production of a female offspring? Then might we not confidently expect that the get of a bull that produced a majority of females, or nearly all, would be apt to bequeath this tendency to his male offspring?

This is a question of great importance to young or old breeders, for such knowledge would simplify the business of selecting a bull for our herds. And from what I have observed in some herds of Jerseys, of breeding from animals that give three-fourths males, there would be a change. Last year I was told by my friends that I would get all males from this bull this year. But the percentage of females is as great as ever, and he is in his four-year-old form.

The Editor replies as follows: Under this theory how does our correspondent account for the well-known fact that while one cow will bring nothing but heifer calves, no matter what bull she may have been bred to, another one will bring only males? Taking up at random Part I of Vol. V of the English Short-horn H. B. we find not less than thirteen cows that have produced five calves or over, the entire produce being of one sex. In two of these cases three different bulls were used, in eight cases four different bulls, and in two instances six different bulls. Some very remarkable instances are found: The cow Ann by Abraham (2905) dropped nine bull calves in succession, the last two by Belshazzar (1703), and then her tenth calf, also by Belshazzer, was a heifer. Dorothy by Fisby (1040) dropped six bull calves in succession by four different sires, the fourth and sixth being by Roman (2061), but the seventh, by the same bull, was a heifer. Her eighth calf was also a heifer. Down Horn by Budget (1759) began with a heifer, her next was a bull by the same sire as the first, and she then dropped five more bull calves in succession by as many different sires. Fair Helen by Young Albion (15) began with a bull calf, and then went on with five cow calves in succession by four different bulls. Florence by Lindrick (1170) began with a heifer, then a bull, then six heifers by six different sires, Jessy by Sheridan (2616) dropped six cow calves in succession by four different bulls, and then wound up with a bull calf. Lady by Reformer (2502) began with a cow calf, and then to the same sire gave a bull which was followed up until she had six bull calves in succession by five different sires.

With mares the same law doubtless applies. Turning to the Stud Book we find that the thoroughbred mare Rosemary produced two males from two different sires; next she produced three females, two of them by the same horse that got the males; then another male, and then eleven females in succession from nine different sires. Scythia produced six females, and no males, from three different sires. Another mare by Scythia, on the same page, produced four males in successive years from as many different sires; and still another on that page, also by Scythia, produced four females by as many sires. Ærolite produced six males to successive covers of imp. Australian; while Dolly Carter, bred to the same horse, produced nothing but females. Mary Lewis began with two male foals, the second being by Glencoe, her next foal, also by Glencoe, was a filly; and all her foals after that (six more), by four other sires, were females. Olivia produced seven males in succession from four different sires before she dropped her first filly. Neither Jack Malone, Muggins, John Morgan nor Bonnie Scotland could get anything but fillies out of Lantana. Mollie Hambleton produced six fillies in succession, three of them by Planet, and then she faced about and threw two male foals to Planet. In short, the pages of the Stud Book and Herd Books furnish a complete refutation to any rule that has yet been formulated upon this subject.

DON'T SELL YOUR BEST.

The *National Stockman and Farmer* has the following: The breeder who is always ready and anxious to sell the best he has to the first buyer who comes along can never for any great length of time hold his position at the front of his business. If he permits his flock or herd to be culled over by visiting purchasers, keeping for himself only what they see fit to leave him, the fame of his stock will be short-lived indeed. The moment his best breeders are parted with, that moment does he remove the incentive for the same buyer to come to him again. His prestige and leadership leave him, in company with the animals on whose superiority his reputation is based. In view of this it is easily understood why breeders of experience and sagacity very often have something on which no price is set and for which no bid will be entertained. It may be an old and well-proven sire or dam, or it may be a young thing whose value is yet only a matter of promise. It is in either case in a measure priceless, and in giving it up the owner feels that, no matter what it may bring, to sell it would be a sacrifice. This idea may, of course, be carried too far—but it is difficult to say just how far it may be legitimately followed. This is a point for the proper decision of which no fixed principle may be laid down and it must be left wholly to judgment and circumstances. We believe, however, that a man is often warranted in holding an animal at a price which no one else could pay for it, and which he himself could hardly pay for another of equal merit. There are many nice points centreing just here, which can be much more clearly appreciated by the thoughtful breeder than explained on the printed page and in them much of the success of the breeding business lies. One thing is certain—he can not afford to build up and increase his stock on culls. He should always reserve a sufficient number of animals of unquestionable merit to insure the next season's produce to be fully up to his recognized standard. *A high sale is a dear one indeed* if it carry away with it the elements which establish local reputation and character.

DO NOT GALL THE HORSES.

The rush of mid-summer farm work is very trying on horse-flesh. The side draft of a reaper or mowing machine frequently causes galled necks and shoulders. The usually tough skin of the horse is softened by the flow of perspiration, and a rough, ill-fitting collar, a useless, chafing back-pad, or a projecting buckle quickly produces pain. No one can blame a horse for faltering, when ordered to press its raw and bleeding shoulder against the collar, that will sink into its bruised flesh. To avoid galls, all parts of the harness should fit closely. A labouring man is careful in buying boots of proper size. He could not endure twelve hours of hard labour while his feet were cramped within an unusally small space, or in boots so large that his feet slip in them and wear the skin away by constant friction. As a rule, horses are worked in too large collars. A soft pad placed under such will prevent galling. When the animals are brought in from work, the harness should be removed at once and cleaned, and the necks and shoulders well washed with castile soap and water. After bathing the worn parts at night, rub on some softening oil. Use no oil in the morning. The collar should not be oiled, as it will then gather dirt through the day and form a rough coating, that will chafe the exposed parts. Keep all parts of the harness clean, especially those that press upon the horse, and see that the same is true of the portions of the horse against which the harness presses. It is much easier to prevent than to cure a gall. —*American Agriculturist.*

There is more money to be made by breeding and maturing finely-bred horses for use than in training and racing them. We mean from the farmer's standpoint. He must be alive to the progress of breeding, and procure the blood that tells, but it is not necessary that he should make it tell. When he inspires confidence in his stud and can sell green youngsters at $200 or $500, he is on the high road to wealth; but when he undertakes to win races he goes in the other direction. The race-track is in the hands of sporting men nowadays, and they laugh at competition, even from blue-grass farmers.—*Honeybrook (Pa.) Graphic.*

It is strange that, as a rule, a farmer is kinder to his horse than he is to himself. If he takes out his roadster, how careful he is on returning to groom the animal till perfectly clean, to see that water is not given till the animal has cooled; yet he will go straight to the well and drink, often without sense or reason; and, without heeding the perspiration that streams from the pores, which are clogged by dust, he sits down to dinner, satisfied if hands and face are clean. A change of underwear would not occupy five minutes, and any wife who thinks about these things will place the garments where they can be easily reached, for man is an impatient being, and must have what he wants there before his eyes. Leather slippers do not absorb moisture, and are therefore best, and nothing refreshes the feet more than a regular washing in tepid water and clean socks.

HOW TO FEED HORSES.

In the first place, horses must have food; in the second place, they must have grooming; and in the third place, they must have good stabling. In regard to food, of all animals the horse, in comparison to its size, has the smallest stomach; it is, therefore, of great importance that his food should contain as much nutriment as possible in the smallest bulk, more especially when undergoing hard work. Hay and oats have this qualification to a greater degree than any other of the feeding stuffs in general use, and that they should form the staple food has been proved by long experience. Bruised oats are very suitable for old horses and those that bolt their corn, but beyond this they have nothing specially to recommend them.

The average quantity of oats required to keep a horse undergoing hard work in good condition is about twenty pounds per day. Of course some horses would eat more; others cannot be induced to eat more than fourteen pounds. Drivers or contractors are practically aware of the fact that the more they can get their horses to eat the more work they will do. But the result of over-feeding and over-working is the premature death of many valuable animals. Indian corn, when it happens to be cheap, may be advantageously used in the proportion of one to six; the only objection is that it causes torpidity of the bowels. This must be counteracted by giving an equal proportion of bran. Beans, but for their heating tendency, would form a very suitable adjunct to oats, as they contain a large proportion of nutritive material. They may be safely given to animals that are hard wrought and upwards of seven years.

A horse can't be maintained in good health on grain alone; the stomach requires a certain amount of mechanical distension to keep it properly. Ordinary allowance should be about twenty pounds per day—something like five pounds in the morning, five pounds at mid-day, and five pounds at night. A few years ago, chopped hay became greatly in vogue; but the principal argument in its favour was that the bad hay was eaten along with the good. This tells seriously against the plan, as a horse is certainly better without bad hay in his stomach than with it.

All kinds of straw are inferior to hay, oat being the only variety that should be used; it does well when horses are idle, as they are not liable to get into too high condition on it.—*J. Storer.*

Horses at work will be gratified if they are allowed a little grass at least once a day. If not convenient to turn them on the grass cut it and feed, with a little salt, in the rack.

The Jerseys are the native cattle of Russia, and can be purchased in that country at from $3 to $10 per head. It is more than probable if we should import directly from Russia a little careful judgment would give us a stock of Jerseys that would be hardy and vigorous.

It is all very well to break the colt and exercise him gently when two years old, but it will be a great mistake to put him at hard work until two years later. Fast road service is more injurious than farm work. While the muscles and bones are yet tender injuries are easily incurred which no after care will remove.

Nothing on a farm is more annoying than jumping horses, and the annoyance does not generally amount to as much as the damage they do, by their getting into fields of growing grain and destroying them and often injuring themselves. Poor fences are the greatest inducement to teach a horse this habit—and the man who is thus troubled can generally trace the matter to a small starting point.

Most horses, in their earlier days, want to bite something in a friendly manner, just as puppies do, without any intention to hurt. It is well to encourage this disposition. If punished for so doing they are apt to misunderstand it, and in the course of time whenever they feel inclined to bite they will do so in a vicious manner. It is stupidity, often brutality that ruins horses which are not naturally vicious.—*Cleveland Leader.*

The use of blood as a food for cattle has, it is stated, been the subject of experiment in Denmark by a chemist, who, as a result, has now invented and patented a new kind of cake, in which blood forms one of the chief ingredients. This new food is stated to be exceedingly nutritious and wholesome, and is eaten with avidity by all sorts of animals, and even by cows and horses, which have naturally a strong dislike to the smell of blood.

Prof. Henry says: "I would urge that our farmers feed more oats to young stock—colts as well as calves. There is no food easily obtainable that will so well correct acidity of the stomach and keep the whole system in good order. To those who wish to raise calves on very little milk, I would say, use oats and oil meal freely, and by studying the wants of your calves you will be able to raise fine animals on a small allowance of milk."—*Detroit Post.*

Buying and selling stock is an important part of every farmer's business, says a contemporary, even in sections where cattle breeding is not a specialty. It requires a great deal of judgment to do this successfully, and this will be only acquired by experience and the use of scales to weigh the stock occasionally. With some experience a farmer can learn to judge weights of cattle or other farm stock away from home, while his own may be weighed as often as he chooses. Even if the stock are not to be sold, it is very convenient for farmers to have scales, that they may know the comparative results of different kinds of food.—*Exchange.*

A writer in the *Ohio Farmer* says as follows of Holstein cattle: From my experience with them for four or five years, I can candidly give them the following good qualities: Perfect tractability and good sense as calves; easily taught to drink, and not shy or wild; rapid growth into maturity on plain, coarse food and very ordinary care; very deep milkers, as a breed, probably having no equals, certainly no superiors; milking as a rule throughout the entire year and up to calving; good butter makers. We have sworn records of 17 to 20 pounds in a week with the best. They are hardy in all climates and weather, good size, cows weighing 1,400 to 1,600 pounds. I know of no bad qualities.

The term "foundered" is used very indefinitely and conveys ideas that are apt to be very confused. The disease to which the word should be restricted, consists of inflammation of the sensitive portionso f the feet—which inflammation may be either recent or long standing. In the early stages of the affection every means must be made to subdue the inflammation and to restore the parts to their healthy condition. For this purpose large poultices are to be applied to the feet and the animal encouraged to lie down. In order to prevent congestion it is advisable in this early stage to walk the horse without shoes on soft ploughed ground. Where excessive tenderness and inflammation have set in, exercise is out of the question. A mild laxative (not purging) should be administered—one half an ounce of aloes is most appropriate.

MISCELLANEOUS.

In 1862 the food supply, per head, in Great Britain, imported from abroad, was only one-half the value of that in 1882, which realized $15.40.

At a late sale of Shorthorns in England, an average was obtained of $1,397 per head, single animals sold for $3,550, $3,701, $4,777, $5,800 and $5,880.

Oleomargarine, butterine, etc., are causing some stir in England, and a bill is before the Commons to protect the public against their sale as injurious.

The heat has been so great in South Australia that birds and dogs died, numbers of the former seeking farm houses for water, and dying soon after drinking.

The damage done by rabbits in Australia seems to be frightful, there being over a quarter of a million acres infested in New South Wales, and on some "runs" (farms) they are increasing, and stationary on others, though on the majority they are decreasing.

The chief of the United States Statistics Bureau says, in a recent issue, that "the enterprise of the Dominion (of Canada) in the establishment of facilities for internal transportation, is, perhaps, unequalled by that of any other country in the world."

Mr. Henry Field, of Middlebluff Farm, brought into our office on 24th July a sample of Red Fyfe wheat in ear, sown on 9th May. The straw measured sixty inches in height, some of the ears on the stock measured five inches. They were taken from a field of eighty-seven acres which promises an abundant return.

The report of the Crewe (England) sewage farm shows a loss, last year, owing to low values of hay and straw. This farm is run by the town council of Bedford, to use the drainage, it cost thirty five thousand dollars to start, lost money at first, but afterward paid. Last year *150 bushels of oats, per acre*, were grown on ten acres of it.

Sparrows have much increased in England in the last ten years, doing great damage to crops, and not destroying any insects. They are charged with eating turnip seed, and the young seed buds of the turnip, and also red and white clover seed, and very much wheat. In America they have proved a great nuisance, and many would gladly be rid of them if possible.

S. J. Jackson, M.P.P., has 1,200 maple and 500 elm trees grown from seed on his property at Stonewall. The young trees are making rapid progress. It would be well if farmers generally would follow Mr. Jackson's example. Trees have a most beneficial effect on climate, they are of themselves a source of large revenue and by adding much to the beauty of a property they greatly enhance its value.

The excitement about the great prices paid for Jersey cattle seem to be nearing their height, and some are calling for a stoppage of importation of all foreign cattle. They claim, and very fairly, that America has for some time breeding stock, of many kinds, quite equal, and even superior to that of other countries, and has exported to the very country she imports most largely from (England). They state, also, (as far as Jerseys are concerned,) many inferior animals are being imported and sold far above their value, just because a few Jersey cows have made great records. But another, and far greater reason, exists for stopping importation, and it is that thereby, we greatly lessen, or quite destroy infectious diseases, which we are continually importing from abroad, and which are frequently injuring our export cattle trade.

SHEEP AND SWINE.

THE MERINO.

All the families of this breed, French, German, and American, spring from one common stock, that of Spain, which has a known history running back 2,000 years. The luxurious nobles of Rome required fine woolen robes and Spain possessed the only breed of fine wool sheep in the world, breeding them with great care and skill. Their origin is not known, but probably resulted as much from special conditions of soil and climate, as from skilful breeding, but, when first noticed, they were found scattered, in distinct families, in separate provinces, again divided into sub-varieties. But the different races of merinos now differ much in character and habits, and Spain has almost lost her proud position, having only two families of importance, the Escurial, and Infantado or Negretti. It is from the latter that any importations into America are made.

The merino requires a wide range of dry upland, and cannot stand moist climate or wet soil, it likes dry warm air, and does not need rich pasture.

Fench merinos were imported to the United States in 1842, and spread rapidly, but did not succeed, requiring more care than was given, and not being suited to the rough and ready system in general use. The Saxon met the same fate, owing to the good shelter and great care required, and, though their wool is the finest and most beautiful of all, yet the high price does not make up for the low weight of fleece, and at present, except in special cases, the breed is not profitable.

The American merino is the best of the breed in the world, and is frequently sent to other countries to improve their stock, (notably Australia,) bringing very high prices. Their history begins with this century, when the first importation of three was made by Wm. Foster, of Boston, who presented them to a friend, and the latter promptly made them into mutton. Other imports followed quickly however, and in 1808 rams sold for $150 each, their washed fleeces weighing eight and a half pounds.

In 1809-10 the greatest imports were made, two flocks a total of 6,350 head, from the finest flocks of Spain, and were distributed in the States chiefly in New England. Then a sheep fever started, and was further heated by the war of 1812, when merino wool sold for $2,50 a pound, rams for $1,000 to $1,500, and ewes $1,000 a head; but peace declared in 1815, knocked the prices down to $1 a head and the industry subsided. But it revived under protective tariffs, and especially since 1849, and some flocks had been kept pure, and bred with great care (all along) in the New England States, who reaped the reward they were entitled to.

A great improvement has been made in the breed by careful selection and mating; the carcase size, and weight and fleece have been increased, until now an average of nine to twelve pounds per fleece (washed) is common, and single cases of nineteen to twenty-four pound fleeces, (unwashed) are not rare.

The body of an American merino is plump, medium size, round, deep, not too long, head and neck short and thick, back straight and broad, breast and buttock full, legs short, well apart, and strong, heavy forearm and twist.

The skin is of a rich rose colour, thin, mellow, loose and elastic, with folds or wrinkles more or less, on neck, back of elbow, and on rump, but they are just fancy points chiefly. The wool is dense, smooth, wrinkled and even on the surface, and not open, and two to three inches in length of staple. The ears are small and covered with soft hair, and the face partly covered with wool, but not too long.

The wool is soft and pliable, and the fleece very yolky, or greasy, in some cases losing three quarters the full weight in washing. Very successful and profitable crosses of the merino have been made with the Cotswolds, Leicesters and Southdowns.

THE PIG.

We need hardly describe the small Cumberland, York-Cumberland, Tamworth, Devons, Dorsets, Hampshire, Lincolnshire, Norfolk, Woburn, Herefordshire, Cheshire, Shropshire, Welsh, Middlesex, Nottinghamshire, Windsors, Coleshill, Bushey, Buckinghamshire, or Prince Albert Suffolks. Some of them are passing out of favor or merging into other breeds, others are of almost local value or renown, and the balance are so mixed up that it is nearly, or quite impossible to define their pedigree and points. Some (so called) breeds are often exhibited under different names and classes, and it is not probable that any of them will ever become widely known and grown, especially in America. Some of them are fancy breeds (hobbies of certain men) and are refined to such a fine point that it pierces the balloon of profit which sinks, as does the pig's constitution. Many in America speak of having "Suffolks," and they always mean white pigs, whereas there does not seem to be any such breed in England now.

In Suffolk the large breeders have both black and white, but the most noted pigs are black, and the term Suffolk now likely means Yorkshire Cumberland, but it is doubtful if there are many of these last named in America. The old Suffolks were white; rather long legs and heads, flat sides much coarse hair, and made good bacon hogs. So called "Improved Suffolk," (white) have short heads, long, round bodies on short legs, and fine hair, as long and thin as possible.

Let us now pass on to the breeds of pigs in America, that is varieties originating there but hardly yet possessing the properties to entitle them to be called "breeds." The first is the "Chester white" of which one firm of breeders yearly ships about 3,000 pigs. They are coarse, large and hardy, strong constitution, suited to common farming, and the sows make a splendid cross with some small refined pure bred boars, Berkshire, or Essex or Small York.

The sows are good mothers and breeders, and the young pigs are quick growers, have strong digestive powers, and are vigorous. Their bodies are long and deep, colour white, back broad and straight, legs short, hams and shoulders full, very small head, (in proportion to body,) short nose, dish face, and broad between eyes, medium size ear, thin skin, straight hair, and almost no neck. They reach great weights, from 600 to 900 pounds, are quiet, and take on fat easily.

The second is the Magic (or Poland-China) pig, very largely kept in the Western States. This is said to have sprung from an improved breed, introduced into Ohio in 1820, large, long, coarse, and poor fatteners, which were much improved later on by the Big China then coming into use. After this they were crossed by "Irish graziers" and "Berks," and to-day are known as long bodied rather slow-growing pigs, but reaching great weights; black and white in color, ears hanging forward, heavy bacon sides, heavy hams and shoulders, wide backs, great feeders, and rather coarse.

The third is the Cheshire or Jefferson county pig. The Cheshire breed in England are almost unknown now, but were a very large and coarse breed, long legs and ears, mixed black and white in color. It is said that one of these old sows introduced about forty years ago to the United States, (Jefferson county, New York,) was crossed by a Yorkshire boar, and from them sprung the present family. They are white, very handsome; are large with fine bones, ears fine, and small, snout short, cheeks full, bodies long and square, shoulders and hams good. But it must be understood that the offspring of any of these three "breeds" do not always come true to form, colour or habits, simply because the types are not yet fixed, though many breeders of them claim otherwise, but almost any day in their own country homes good evidence to the contrary can be seen. Probably the best use for them is for crossing the sows with refined, pure bred boars.

IMPROVING WITH SOUTHDOWNS.

Many farmers who desire to improve their sheep cross them with Southdowns, and are often surprised that the offspring do not shear fleeces of much greater weight than those of the common flocks. It may as well be stated at once, in order to dispel any anticipations in that respect, that while the Southdown will greatly improve the size and quality of sheep, they are of but little value when wool is the object. The Southdown is not bred for wool. Their fleeces are not intended for combing purposes, as are those of the Cotswold, nor can they compare with the Merinos for texture. Even when bred in their purity they give poor results as wool producers, and as no sheep can excel in all attributes neither can the Southdown produce the best quality of wool and mutton combined. But with so much said of a detrimental character it may be stated in favour of the Southdown that it makes a better cross with common flocks than the Cotswold, and it is superior to the Merino in carcase and hardiness. Southdown lambs are more saleable than any others, and while crosses between common flocks and the larger breeds may not be always compatible, a dash of Southdown makes the union easier. For ability to subsist on scanty herbage, activity, freedom from disease, and quality of carcase, the Southdown still holds its place at the head of our mutton breeds.

WEANING PIGS.

The litter that has been brought up to weaning time on the generous diet before recommended will be in condition to assimilate enough food, without the mother's milk, to prevent the universal check in growth that comes to the calf and colt and average pig after weaning.

If the sow is to raise two litters a year, the litter may profitably suck eight weeks; but if she is to have but one litter a year, then she can be at no better business than furnishing milk and comfort to her young a month longer. She should be generously fed, that her strength and milk supply be kept up, as far as possible.

Many good sucklers become thin and weak after a strong litter has drained them for two months. We have often found that if a quart of milk be added to the slop of the brood sow she would eat with greater relish; and the addition of the milk not only makes a more palatable ration, but a more digestible diet. Here is one of the secrets in ecomomical use of milk. It so completes a ration of corn, oats, and mill feed as to make a larger per cent. of the feed digest. Hence the feeding value of milk is greater than its analysis would indicate. As a general rule it pays better to feed the milk to the pigs than to the sow, but in the case of flagging appetite or strength of the sow a share of it can be put to no better use than to keep her up in digestion and appetite. At such times condiments and tonics and condition powders are usually recommended, but they are

of doubtful value, and are easily used to the injury of the stomach. The watchful feeder notices the condition of his stock, and gauges the amount and variety of feed to suit their conditions.

When we are feeding young pigs to secure the greatest growth by ten or twelve months, or the calf and steer to be a ripe beef by two years, far more intelligence and care will be needed than in the old style of slow growth.

The pigs that are to be weaned at eight weeks or twelve weeks must have been fed so as to have strength of stomach to enable them to keep growing without the stimulus of the mother's milk. For her safety she should be put on dry feed a week before separation from the litter, and gradually dried off as to her milk. The pigs are thus gradually brought to the new diet, and the sow dried off, so she and they are prepared for the change. She should be put out of sight and hearing of her pigs, and fed grain long enough to start her thriving, and then go to grass or clover for the season, and do without any grain until November, when she should be fed lightly with grain again to put her in strength for breeding.

The pigs are prepared for soaked corn and slop made of mill-feed and oil-cake meal in such quantity as they will eat up clean within fifteen minutes, and take it three times a day. They should have a grass lot or clover field to run in. So important is grass as a part of a pig's diet, that if one cannot have grass lots or clover fields, by all means sow clover near the pig house, that it may be cut and thrown to the pigs twice a day. We cannot afford to raise pigs on corn and meal: first, because we cannot keep them in as robust health without the grass; second, because with the grass or clover added to the ration, a larger per cent. of the grain is digested, and more pounds of pork can be made from each bushel of grain fed.—*L. N. B. in Farm and Fireside.*

THE PIG AS A PLOUGHMAN.

Farmers everywhere are influenced by the construction of railroads and other means of quick transportation, but none of them more so than those who grow meat as a branch of their farm operations. The pork-raisers in the older States come in competition with the swine products of the prairie States, where the pig is a condenser of the corn crop, and among the most economical methods of sending that cereal to market—yet even with cheap freights, it will not do for Eastern farmers to abandon the sty, and look to the West for their salt pork and hams. There are economies to be practiced in swine raising that will make the Eastern farmer successful in his competition with the West. He has the protection of freights over long distances, which can never be very much reduced. The home market will always be renumerative, so long as pork products are in demand. His lands need manure, and that which is made in the sty, and under cover, is among the best of the home-made fertilizers. Herding swine upon pasture, or old meadow, that needs breaking up, is not very much practiced, but is one of the best methods for raising pigs. They are as easily confined with a movable fence as sheep, utilize the grass and coarse feed quite as well, and perform a work in stirring the soil that sheep can not do. The nose of the pig is made for rooting, and we follow nature's hint in giving him a chance to stir the soil. A movable yard, large enough to keep two pigs, can be made of stout inch boards, about fourteen feet long, and six inches wide. For the corner posts use two by four inch joists. Nail the boards to the posts six inches apart, making four lengths or panels four feet high. Fasten the corners with stout hooks and staples, and you have a pen or yard fourteen feet square, which is easily moved by two men. If you place two fifty-pound pigs into this yard they will consume nearly all the grass and other vegetation in it, in three or four days, and thoroughly disturb the soil several inches in depth. When they have done their work satisfactorily the pen can be moved to the adjoining plat, and so onward through the season. The advantages of this method are, that it utilizes the grass and other vegetation, destroys weeds and insects, mixes and fertilizes the surface of the soil about as well as the ordinary implements of tillage. In the movable yard there is thorough work. Even ferns and small brush are effectually destroyed. Worms and bugs are available food for the pig. And it is not the least of the benefits that the small stones, if they are in the soil, are brought to the surface, where they can be seen, and removed The pig's snout is the primitive plough and crow-bar, ordained of old. No longer jewel this instrument, but put it where it will do the most good, in breaking up old sod ground, and help make cheap pork.—*American Agriculturist.*

SOUTHDOWN SHEEP.

The Southdown is the most popular breed of mutton sheep in the world. The mutton is most excellent, and the wool of a quality in demand by the manufacturers of cloth. The growth of the animals is rapid, so that they may be early fattened either as lambs or mutton sheep, and besides they are quiet, hornless, hardy, and prolific. Other breeds surpass them in size and quantity of wool, none in perfection of form or in excellence of flesh. So true is this, that no butcher who has cut well-fed Southdown mutton will fail to recognize the blood even though in the second or third cross. The excellence of form in the Southdown is seen in its remarkable symmetry and squareness, in its length of body, breadth of loin, the broad hindquarters, height at the rump, lowness in the twist, and in the deep, thick hams. The brisket should be both prominent and deep, the fore-legs straight and wide apart, the belly-line level, and the flank as low as possible. The heads of the Southdown are small, of a gray, or brownish-gray colour, well wooled between the eyes and across the poll. The wool, which should cover the belly, extends to the knees and hocks, and the legs are covered with dark, straight hair. They are naturally fine, but should be flat and not too delicate.

The Southdown belongs to the class of middle-wool sheep. The wool is of medium length and fineness, close and even, and forms a fine coat and protection against changes of weather and climate. It is no doubt owing in part to this that the Southdowns prove hardy wherever introduced. The breed has been made use of to improve other breeds in England, and largely in this country. We see them, or their grades in the market, with their legs left with the skin on, to indicate the breed, and connoisseurs of mutton are thus attracted to buy.

Do not permit your flock of sheep to get down in flesh. The condition of the sheep affects the quality of the wool. From a poor sheep expect nothing but poor wool. To secure uniformly good wool, keep your sheep in a growing, healthy condition.

The attention which the subject of tree-planting has received in Ontario during the past two years is already beginning to show good results. This year especially a very large number of trees have been planted along the highways, and around the dwellings of farmers.

CREAM

It was a Port Hope girl that got married at fifteen so as to have her golden wedding when it would do her some good.

The latest dude story is that a farmer saw a couple of these agonizing specimens on the street and exclaimed: "Gosh, what things we see when we don't have a gun."

"Were you ever caught in a sudden squall?" asked an old yachtman of a worthy citizen. "Well I guess so," responded the good man "I have helped to bring up eight babies!"

A Chatham man compels his daughter to eat onions every night for supper, and thus assures himself that he can shut the house at ten o'clock without locking in a strange young man.

"You can lead a horse to the water, but you can't make him drink," says the old saw. You couldn't make some men drink either if you took them to a hydrant.—*Burlington Hawkeye.*

A small boy testified in a justice's court that the affray took place on a Sunday. "How do you know it was on a Sunday?" "Because that day I had to go to the side door of the saloon to get beer for dinner."

"Do I believe in second love? Humph! If a man buys a pound of sugar, isn't it sweet? and when it's done doesn't he want another pound, and isn't it that sweet, too? Troth, Murphy, I believe in second love."

—"Just think! I once came across a negro that was actually so black that he could not be seen without a light," "H'm! I saw a fellow one time who was so thin that he always had to enter a room twice before he could be noticed."

"Did you break any of the rules at school, to-day, Philip?" "No sir." "Then why do you look so crestfallen?" "Because the teacher broke a rule." "The teacher broke a rule, you say; how so?" "Over my head—that's why I feel so bad."

"What do you charge a quart for your milk here?" asked a man, as he put his head in at the door of a milk shop." "Eight cents," was the reply. "Ain't you got any for seven cents?" "No," said the proprietor, "but we can soon make you some."

A minister, in one of his parochial visits to a cow boy, asked him what o'clock it was. "About twelve, sir," was the reply. "Well," remarked the minister, "I thought it was more." "It's never any more here," said the boy; "it just begins at one again."

"How did you come to get married?" asked a man of a very homely friend. "Well, you see," he replied, "after I'd vainly tried to win several girls that I wanted, I finally turned my attention to one that wanted me, and then it didn't take long to arrange matters."

Sorrows will not last forever,
Brighter times will come again;
Joy on every grief succeeding,
As the sunshine after rain.—*Anon.*

The rose is fairest when 't is budding new,
And hope is brightest when it dawns from fears;
The rose is sweetest washed with morning dew,
And Love is loveliest when embalmed in tears.
—*Scott.*

"The development at the back of the head, my friends, indicates parental affection," explained the phrenologist. "Now, you will observe," he went on, feeling the boy's head, "that this bump is abnormal in size, thus indicating that he loves and reveres his parents to an unusual degree. Is this not so, my lad?" "Naw." "What's that? You do not love your parents?" "I think well enough of ma," the boy replied, "but I ain't very fond of de old man. That bump you're feelin' of he giv' me last night wid a base-ball club."—*N. Y. Sun.*

BEES AND POULTRY.

THE GAMES.

These are about the most widely cultivated of all varieties of fowls, not alone for fighting qualities, but for their grace and beauty and spirited action, and their excellent meat and eggs. We cannot describe all the varieties, there are so many but will the leading ones:

They are hardy, the hens are good mothers and setters, and, if allowed wide range, these fowls are profitable as they eat little but yield the most delicious meat and eggs of all fowls. Although Brown Reds head the group for perfect shape yet they are all much alike. The body is short and hard, and the carriage erect and fierce, and the plumage is short, close, hard and glossy. Back short, wide at shoulders, narrow at tail, and rounded at sides, broad breast, narrow rump, short wings, medium length carried close, tail medium and erect, and spreading, sickles curved, short, and muscular thighs, well apart, legs of medium length and also wide, spurs sharp and long, low and curving up a little but not much in. The feet are thin and spread, claws straight and strong, head sharp and long, throat and face thin and lean, neck arched and long and strong, ear-lobes red and small, single comb, red, thin, erect and small, and evenly cut. The same points apply to the hen in proportion, hard body, (all over) and plumage being the chief points. The exhibition for cocks is four and a half to five and a half pounds, and for hens three to three and a half, pit birds not over four and a half pounds. The most popular (or at least the most successful prize winners) brown-red black, breasted red, silver duck-wing greys, and piles. The first is dark blooded, the cock's breast red brown, wings dark red, butts dark brown, legs, claws, beak and eyes dark brown, hackle dark striped, thighs red brown, tail green black. The hen is dark brown, lighter pencilled, golden red neck hackle, (darker striped), face and comb darker than the cocks. The hens of games are often spurred, and they throw the best chickens, and the bright red comb varieties are the best layers, the dark are the best fighters, and of course, games are judged chiefly for their fighting properties.

Black brown reds are bright red plumage, red eyes, the cock's wings red in upper, chestnut in lower part, with blue bar, blue black breast, and thighs, green black tails, comb and wattles bright red, best birds have yellowish legs. The hen rich red brown fawn colour breast, red golden hackle dark striped.

Silver duck wing greys, cocks silver gray colour, hackle striped black beneath, clear above, wing has blue bar, and is yellow white below, tail green black, skin white. Hens bluish grey, dusted with silver shade, yellow red breast, legs white, blue or yellow, combs and faces (of both sexes) bright red. The cocks of the piles have the red colour "piled" on a white ground, red hackles striped white, back red, breast white, may be (red marked) tail white. The hen's colour, white ground red streaked, and in both sexes the dark grey and black varieties should have black legs and eyes, the white, bright red eyes and white legs.

All our varieties of games spring from three wild varieties of India where they are still found, and have been bred from very early times. They are black brown red, brown breasted reds, and

In games black eyes show dark blood and their eggs are white, red eyes red blood (eggs pinkish), yellow eyes, and yellowish eggs. The best fighting sorts have red or black eyes, these commonly used being brown-breasted reds, black-breasted reds, and dark greys, the last being the hardiest and strongest, game cock chicks become "stags the first Christmas after hatching when their combs and wattles are closely clipped with sharp scissors. Separate varieties should not be crossed, and not more than six hens should be put with each cock, with a lot of good "Stags" under him; never breed from pullets, but the hens can be bred from as long as they are strong, as the old birds breed the best chicks. Mate your breeders very carefully, and the more cock chicks there are the better the whole brood is, and hatch your chicks between mid March and end of May.

OPERATIONS.

Beginners will find the movable frame hives the easiest to learn by, but they can also take the old box hive, study the bees closely, learn and read all possible, about the dainty little pets, and then, getting some good standard hive, do their own transferring and continue their investigations.

A good breed of bees and one of the best hives however, will not ensure success, even among good "pasture," for intelligent watchful care, at the right time, is necessary for good results.

SWARMING.

There is a great difference of opinion among bee keepers upon this subject, some saying that natural swarming is the only right way, while others claim that it is better to control it by artificial means. Some days before this event takes place, the queen matures less eggs, and reduces her size so as to be able to fly with the swarm, and the worker bees do not work as hard as before.

The causes of swarming are crowded combs, (with bees) a large brood comb maturing, and a good supply of honey coming in. In the middle of the day examine your hives, and look for queen cells, and if these have eggs or larvæ ready to seal, or sealed, swarming is at hand, (if sealed), most likely the next day. Swarming will likely commence in this country any time in June, and end about middle of July, the second swarm (under the natural process) coming out eight or nine days after the first and the 3rd about three days after that. If not hived soon after swarming and clustering they generally fly off to the woods. Early swarms often swarm out but do not cluster, and others often cluster without swarming.

All ages come out, together, and the old queen goes out with the first swarm, and they usually come out from ten to three cloock, if the day is fine and not too windy. It is a very interesting time, and rather anxious for the beginners but keep cool, and knowing what to do, having all things ready, you are all right. You will first notice a larger number of bees about the hive entrance, than is usual from a minute or two to an hour before the time of starting, great confusion exists and bees are running about in all directions. Upon rising from the hive they first fly in small circles, but gradually spread over quite a large space, and move slowly, in thousands. In say five or ten minutes after leaving, they usually select a branch of a tree or a bush, and in less than a minute are all gathered there and "cluster" on it. They must be now put into the hive at once, as they get impatient, especially if a hot day, and, if another swarm from another hive, should come out at that time, they would surely join. In any way you like to get them all in the hive, but they must all go in, or nearly so.

Put your hive on the ground and lay a wide board before it, and if it is possible cut the branch off and shake the bees down in front of the hive, some soon see it and call the others on. If they block up the hole, gently stir them with a small stick, and if that won't start them, sprinkle a little water over them, or the smoker, if you have one. If you can't get at the branch, or they settle on some solid substance shake or dip them (with a tin dipper) into a box and empty them in front of the hive, or a large pan will do as well as the box. As soon as you get the queen in all the rest will come in also, but if she is not in those that may already be in the hive, will come out again and cluster. As soon as the queen and nearly all the others are in remove the hive to its permanent stand and shelter from the sun.

POULTRY NESTS.

Cleanliness is very desirable in all of the varied management of poultry, but in no special department more than with the nests and nesting boxes. To secure ease in cleaning, it is necessary to have the style and arrangement of the nesting boxes conform to some well defined plan, and not have a mere collection of non script soap or candle packages, of all sizes and shapes, and put just anywhere, where there is room enough to hang or place them. Those who "can not make poultry pay" are the ones who economise (?) in this peculiar way. The boxes in which the nests are made should be of a uniform size and shape, and should be arranged with some degree of taste and order in the poultry house. A very convenient-sized box is about fourteen inches long, by about a foot wide and six or eight inches deep. The ends should be of inch stuff, while the sides and bottom can be made of half-inch boards. The entire material should be unplaned lumber, so as to take white-wash well. We must condemn the practice of nailing the boxes fast in the poultry-house, as it prevents the breeder from giving the house or the boxes a thorough cleaning whenever necessary, and the lice and other fowl parasites find a secure retreat behind the boxes, where it is practically impossible to dislodge them.

The very best material for nests is well broken and fresh rye-straw, clean and bright. It can soon be twisted and broken by hand, to relieve it of its harshness, and then neatly made into a nest, which should be well sprinkled with flowers of sulphur when made. If tobacco stems are plentiful, put a good handful of them in each box before the nests are made. This will act as a very good vermin preventative. Never make the nests of any material which will pack down solidly, as it not merely affords a snug retreat for vermin, but is apt to endanger the safety of the eggs whether they be under a setting hen or a layer, and in every case make new nests each month, if they be constantly used, invariably burning the old ones.—*American Poultry Yard.*

One half of the diseases of fowls arise from their being exposed to dampness, not only in the houses but in the yards. A yard should not only be well drained, but should be raised in the centre in order to allow the water to flow into the drains. Leaks in the roof are very dangerous, and when north-east storms occur, that portion of the coop should be very tight.

Water strongly impregnated with sulphurous (not sulphuric) acid, is said to be an excellent remedy for chicken cholera. To prepare it take a tight box with close fitting lid. In this put a basin of water. Melt some sulphur and draw strips of cotton cloth through it. Set fire to the strip of sulphur rag and lay it on a brick in the box with the water and put on the lid. Let stand fifteen minutes. Repeat this a few times until the water has absobed enough of the sulphur fumes to taste slightly acid. Give a teaspoonful every two hours until there are signs of improvement, then three times a day This is harmless to the fowls but sure death to the cholera germs. Let some of our readers try it.

The Rural Canadian.

TORONTO, SEPTEMBER, 1884.

Cows that are watered from stagnant ponds or from wells in the barn-yard will give milk more or less tainted, and from which it is impossible to make the best butter. So large a part of milk is water that the drink of the cow is of quite as much importance as her food.

BUTTERCUPS possess a poisonous property, which disappears when the flowers are dried in hay; no cow will feed upon them while in blossom. So caustic are the petals that they will sometimes inflame the skin of tender fingers. Every child should be cautioned against eating them; indeed, it is desira le to caution children about tasting the petals of any flowers, or putting leaves into their mouths, except those known to be harmless.

WE are in receipt of a neat little work of one hundred pages, giving catalogue of the herds and flocks at the Ontario Experimental Farm. The merits of individuals by pedigree is fully given in this catalogue, but as their value otherwise can only be known by inspection, the author has submitted notes on several of the animals. Prof. Brown deserves great credit for the present high position of the Experimental Farm, and we have no doubt the near future will see great advances on what has already been accomplished. We have no doubt our readers can procure a copy of the catalogue on application to the college authorities.

FARMERS and others who are thinking of planting shade trees, or trees for timber groves, could not do better than try the beautiful Catalpa—*Catalpa speciosa*. No other tree grows so fast. Its foliage is very large and shady, but from its open branching it offers little obstruction to the passage of air, while its flowers are exceedingly beautiful, somewhat of the form of a gladiolus, and white in color. A tree planted by the writer four years ago is now 14 feet high, about 5 inches in diameter at the lower part of the stem, and bloomed last year. The timber is exceedingly durable for posts and railroad ties, and, of course, for buildings for farm purposes and fences. It is thus one of the most valuable trees for planting for profit, while for a road tree or an ornamental shade tree it has few, if any superiors and it grows and thrives everywhere.

PROF. SHELDON, in an Article in the *Live Stock Journal*, on the Scotch Dairy Farmers' Association, says:—"Not to Scotland, nor even to Somerset, the birthplace of the system, must we look for improvements which have been wrought out in Cheddar cheese-making. To America, and more particularly to Canada, we must turn in our search for the later developments of which the system has been proved to be susceptible." "The Scotch Farmers," he goes on to say, "feel that their Cheddars compare unfavourably with the mellow and salvy cheese of Canada; so much of which is now being sent to the northern markets to compete with the home-made Cheddars. One of the most successful cheesemakers of Canada, Mr. Harris, of Ontario, is now employed by the Association to teach the later Cheddar method to the Scotch dairymen, and we may safely take it for granted that his teaching will have a very beneficial effect on the dairy husbandry of the north."

OUR AGRICULTURAL STATISTICS.

In addition to reports on the progress of harvest work, the promise of the crops and the state of live stock, the August Report of the Bureau of Industries contains the agricultural statistics of the Province, compiled from the returns made by farmers to the Bureau on the 25th of June. These statistics are tabulated by counties, and comprise (1) the areas of the grain, hay and root crop, with estimates of the year's production; (2) the numbers of horses, cattle, sheep, pigs and poultry; (3) the wool clip of the year, classified as coarse and fine, (4) the quantity of butter made last year, and (5) the average rate of wages paid to farm and domestic servants. A summary of this Report we are sure will prove interesting to the readers of THE RURAL CANADIAN, and we may remark that the information and the statistics are all the more valuable because they are so promptly issued.

FALL AND SPRING WHEAT.

The great staple crop of Ontario, of course, is wheat, and at a time within the memory of the great majority of our farmers it was spring wheat. In th year 1870, for example, the census returns show that the yield of spring wheat was 7,891,989 bushels and of fall wheat only 6,341,400. Ten years later, for the harvest of 1880, the yield of spring wheat was 7,213,624 bushels and of fall wheat 20,193,067 bushels. This remarkable change is accounted for in part by the failure of the spring wheat variety, and, in part, by the introduction of improved varieties of fall wheat. The one was neglected by those people who interested themselves in hybridizing processes, and the other received special attention. How this arose is not positively known, but we suspect that it is due to the fact of seed culture being almost wholly confined to a number of intelligent men in England as well as in New York and other States of the neighbouring Union lying within what is known as the fall wheat belt. Our Province lies on the border land of the two belts on this continent, and, while it is admirably adapted to the life and maturity of fall wheat, the spring variety can only be maintained at the maximum of quality by careful cultivation. There is no doubt as to the fact that for a number of years with us the spring wheat had been gradually "running out," as it is termed; and with a low yield and an inferior sample it is not to be wondered at that spring wheat was being abandoned, especially when several new varieties of fall wheat were bound to give far more satisfactory returns. It is interesting to learn, however, that renewed attention has recently been given to spring wheat cultivation, and that there is a prospect of its restoration to favour especially in all the northern and north-eastern portions of the Province. Several new varieties have recently been imported from the continent of Europe, and last year's crop gave such uniformly good results as compared with the fall wheat that an increased area was to be looked for this year as a matter of course. The following table gives the acreage and estimated produce of the crop for both years:

	1884		1883	
	Acres.	Bushels.	Acres.	Bushels.
Fall wheat..	864,551	18,479,207	1,096,266	11,644,005
Spring wheat	722,410	13,251,137	586,416	9,726,063
Totals	1,586,961	31,730,344	1,682,616	21,370,068

The decrease in the area of fall wheat is about 232,000 acres, while the increase in the area of spring wheat is 136,000 acres. Last year was exceedingly unfavourable for the growth of wheat, and as the ripening season approached the crop was greatly injured by rust. This year, on the other hand, the season has been unusually favourable—the temperature being cool and the rainfall sufficient—and it will be observed that from an area less in extent by 95,000 acres the product is greater by 10,360,090 bushels. Last year the average per acre was only 12.7 bushels, and the quality of the grain was very inferior; this year the average yield is 20 bushels per acre, and the grain is plump, bright and hard. The harvest weather, too, having been propitious, the crop has been reaped and housed in excellent condition.

Next in importance of our cereal staples is barley, and the fame of

OUR ONTARIO BARLEY

is such that (when of good colour) it is always in great demand with malsters and brings the top prices of the market. The quality, however, is largely dependent on the state of the weather at the harvesting season. If dry our barley is invariably bright, but the fall of one shower when the crop is in sheaf, unless it be well capped, is sure to discolour it more or less. This year the crop has suffered from several causes. In the first place, the temperature was too low; in the second place the drought of June in the northern and north-eastern counties checked the growth; and in the third place the weather was somewhat "catchy" over large areas when the reaping season began. Yet on the whole the crop is fairly good; its condition was greatly improved by the rains and the higher temperature of July, and the worst that can be said is that the grain was stained by the late July rains. A considerable portion of it, however, has been saved in fine order, especially what was cut in the first and second weeks of August. The statistics for this year and last year are given as follows:

	Acres.	Bushels.
1883	757,156	18,414,337
1884	781,435	17,860,777

The comparison is decidedly in favour of this year's crop, for although the area is 55,721 acres less the difference in the total product is only 553,560 bushels—the average yield per acre this year being one bushel greater than last year. The steady extension of barley as an Ontario staple is shown by the census tables—the crop of 1850 being 625,452 bushels; of 1860, 2,821,962; of 1870, 8,461,233 bushels; and of 1880, 14,379,841 bushels.

OATS AND RYE.

Oats may properly be regarded as third in order of importance, and the year's crop is on the whole an excellent one. It is perhaps not equal to last year's—which was extraordinarily good—yet it is a crop to make the farmer's heart glad. Oats thrive best under a moderate temperature, and in this respect it was well suited this season. The chief cause of complaint is the June drought, but in some of the northern sections its failure is attributed in part to the use of frosted seed grain. The latter cause was the more permanent, for under the influence of July rains, the crop appears to have made a fair recovery from the effects of the drought. The figures for two years are as follows:

	Acres.	Bushels.
1883	1,418,309	54,573,609
1884	1,485,620	53,195,805

Rye, as compared with other cereals, is an insignificant crop, and in almost every county of the province the acreage was considerably less this year than last year. The total area last year was 188,111 acres, and the product 3,012,240 bushels; this year the area is only 104,141 acres, and the estimated product 1,621,667 bushels. It has been saved in good order, and the grain is of excellent quality.

PEAS, BEANS AND CORN.

The pea crop of this year appears to have been an unusually good one, and while the breadth

sown is nearly 28,000 acres less than last year the estimated aggregate yield is greater by more than 2,500,000 bushels. In some districts last year, and notably in a number of western counties, the crop was seriously damaged by excessive rains. This year the accounts from all localities are favourable, the vine being of only moderate length and extremely well podded. Another very noticeable feature in this year's reports is the small extent of injury that appears to have been brought by the pea-bug. It would be a grand thing for the farmers of Ontario were this pest entirely to disappear, as for feeding purposes ,peas possess qualities of the first order. It is superior to barley, oats or corn, and taking account of yield and market price it is a more profitable crop to grow than any one of those cereals. The area and produce of the crop for 1883 and 1884 were as follows :

	Acres.	Bushels.
1883	542 717	10,673,723
1884	570,574	13,253,986

Beans, although of the same family as peas, do not appear to have fared quite so well. The lengthened period of cool weather which followed the planting season of beans kept back a vigourous growth, and they are reported to be somewhat short in straw. The rains of the latter part of July, however, have made a decided improvement in the prospect, and with a continuance of favourable weather up to the ripening season a handsome yield may be looked for with confidence. The area in crop (which is chiefly confined to three or four counties of the Lake Erie group) is 24,877 acres, and the estimated yield is 552,953 bushels. Last year's crop was of nearly the same extent, but it was ruined by the September frosts.

The corn crop is not in a hopeful condition, it having suffered seriously from the planting of an inferior quality of seed—another consequence of last year's early frosts—and also from low temperature and the ravages of the cut-worm and wire-worm. Still a marked improvement was noticeable in the last days of July and there is yet a good chance for the maturing of a fairly good crop. It may be remembered that the promise of the crop on the 1st of August two years ago was very disheartening, but with a high average of temperature throughout August and September the corn picked up and matured in a way to astonish the farmers. So far as the season of 1884 closely resembles that of 1882, and a good corn crop is by no means to be despaired of. The area planted is 174,884 acres, being 39,404 acres less than was planted last year.

THE ROOT CROP.

The report on the state of the root crop is on the whole very encouraging. Potatoes have made a healthy and continuous growth, and the quality of early varieties is excellent. The Colorado beetle still remains in the field, but the judicious use of Paris Green suffices to keep its ravages in check. A new insect was recently reported as attacking the mangold wurtzels, but the reports to the Bureau show that so far it has done very little damage in the province. These roots, and carrots also, give promise of a good yield, having been planted early in the season. Turnips were sown in the period of drouth, and the reports concerning these valuable roots are not quite so favourable. They appear, however, to have been making favourable progress under the influence of the late July and early August rains. The acreages of the several crops for 1883 and 1884 are given as follows :

	1884.	1883.
Potatoes	168,862	166,623
Mangolds	18,341	17,219
Carrots	10,930	11,270
Turnips	104,108	88,429

HAY AND CLOVER.

The greatest injury caused by the June drought seems to have been sustained by hay and clover, which also suffered to some extent from the frosts in the last days of May. In the northern and north-eastern counties the crop is very light as compared with last year's, but elsewhere the farmers have no cause for serious complaint. The light crop, however, has one compensating advantage; the haying season was unusually favourable for the cutting, curing and housing of the crop, and the quality is first-class. The area in hay and clover this year is 2,193,369 acres and the total yield is estimated at 3,044,912 tons,—an average of 1.39 tons per acre. Last year's area was 2,350,969 acres and total yield was 4,115,435 tons,—an average of 1.75 tons per acre.

LIGHT FRUIT CROP.

Fruit trees are generally reported as healthy, but the crop is light. The May frosts did great damage all over the country, and in many districts the supply will no more than suffice for home consumption. The black-knot still continues to ravage plum and cherry trees, and pear trees are more or less affected by blight. The severe weather of last winter seems to have been attended with disastrous results, and large numbers of trees in the counties of Grey and Bruce are said to be dying, although it seems probable that this is due in part to the effect of a blight which struck orchard trees in that section last summer. The peach crop is almost a complete failure.

LIVE STOCK OF ALL KINDS

are thriving this year, in spite of the drought of June. We notice that for the first time the Bureau has this year collected the area of pasture land in the province, and in connection with live stock this is a most important fact in agricultural economy. The total breadth of pasture is 2,794,986 acres, or about one-eighth of the total area of farm land. Concerning the tables of live stock presented below, it is only necessary to remark that the decrease in the number of working horses this year appears to be the result of greater exactness in the form of the schedule calling for returns. Last year there was reason to believe—as we observe by a note to the table of horses—that breeding mares were in many cases returned under the two heads of "breeding mares" and "working horses," and so were counted twice. This year's schedule was prepared with a view to prevent a repetition of this mistake, and hence the apparent falling off in the number of working horses. The totals of each class in the province, for the years 1883 and 1884 are as follows :

	1884.	1883.
HORSES.		
Working horses	503,474	349,552
Breeding mares	93,910	87,380
Unbroken horses	138,569	122,201
Totals	535,953	560,133
CATTLE.		
Working oxen	16,793	17,071
Milch cows	710,519	690,437
Store cattle over 2 years	384,453	321,471
Young and other cattle	813,905	789,075
Totals	1,925,670	1,818,054
SHEEP.		
Coarse woolled :		
over 1 year	994,608	1,043,080
under 1 year	595,996	580,085
Fine woolled :		
over 1 year	176,341	150,291
under 1 year	123,788	95,328
Totals	1,890,733	1,868,784
PIGS.		
Over 1 year	257,711	245,986
Under 1 year	658,447	660,731
Totals	916,158	906,717
POULTRY.		
Turkeys	445,532	355,635
Geese	540,130	491,093
Other fowls	5,251,944	5,000,616

The wool clip of the two years, classified as coarse and fine, is given as follows :

	1884		1883	
	fleeces.	lbs.	fleeces.	lbs.
Coarse wool	1,008,916	5,597,643	1,063,333	5,829,663
Fine wool	179,770	921,275	152,773	778,755
	1,188,716	6,518,918	1,216,106	6,608,418

The returns of dairy butter made in the province are obviously far below the actual product, the reason being that many farmers were unable for lack of knowledge to supply this information. Possibly they may be led in future to keep an account of their

BUTTER PRODUCE,

and in itself that will be a good thing. According to the table the quantity made in 1883 was 32,844,269 lbs., while for the previous year the quantity was 34,335,538 lbs, but for each year the actual product was fifty per cent. more.

Another important subject dealt with in the Report is that of

FARM AND DOMESTIC WAGES.

Heretofore there was a general complaint among farmers of the difficulty of procuring labourers for the working season, and especially for the period of haying and harvesting. But the introduction of self-binding reapers has wrought a great change in this respect, as fewer men are required in the harvest fields to do a given amount of work. A large number of these labour-saving implements are now in use in all the old-settled parts of the province, and they are evidently giving good satisfaction. Domestic servants are now apparently the only class in request, but these gravitate to the towns and cities and it is often a difficult matter to get them into the farm house for "love or money." The average rate of wages paid in the province for the two years is given as follows :

	1884.	1883.
Farm hands—		
per year with board	$167 00	$173.00
per year with board	257.00	264 00
per month with board	19.44	20.37
per month without board	29.11	30.21
Domestic servants per week	1.51	1.52

The fall in wages is not very striking, but it is enough to show a downward tendency. The table of the market prices of farm products, on the other hand, shows an increase as compared with last year. The average prices compiled from reports of the principal markets of the province, for the first half of 1883 and 1884 respectively, are as follows :

	1884.	1883.
Fall wheat per bushel	$1.04	$0.99
Spring wheat do	1.06	1.01
Barley do	.58	.59
Oats do	.37	.42
Peas do	.76	.73
Rye do	.61	.61
Corn do	.73	.50
Beans do	1.37	1.55

Meats, on the other hand, have declined about ten per cent. while the rent of farm land remains stationary—being $2.75 per acre for each year.

Information of this sort we regard as possessing great interest and value to the farmers of the province. It seems more than anything else to show what progress we are making, and to prove what a magnificent farming country is this Ontario of ours. We wish that it were better appreciated; but it is unfortunately too true that while our public journals devote columns to puffing the North-West and the Western States, they often begrudge a beggarly paragraph to recording the capabilities of their own province.

An English gardener advises trapping ants with bones upon which some meat has been left, and dipping occasionally in hot water. For "slugs and wire worms" he uses pieces of potato or carrot.

WALKS AND TALKS AMONG THE FARMERS.—NO. IV.

Since our last "Walk and Talk," I have met with a *rara avis* in the person of a farmer whose land is absolutely free, not only from thistles, but from weeds of all kinds. He is so unusual a specimen of a farmer, that Barnum ought to secure him for his circus. If he were to go round the country and explain, as he did to me, how he has accomplished the marvellous feat of utterly extirpating the weeds from his 100-acre farm, he would do a large amount of good. Such an example quite lifts one out of the despair apt to be induced by a survey of the weedy condition of the country in general. "What man has done, man can do." I cite this case, in the hope that it may rouse others up to the diligence, perseverance and success, which have proved equal to the conquest of the whole army of pestiferous weeds.

Let it not be supposed that this man has an income independent of farming. He has not. He started in the bush, has raised a large family, and is in comfortable circumstances. What he has got, he has obtained wholly by tilling the soil. He has engaged in no outside speculations, and is a living instance of what can be done by steady, faithful plodding at his own calling. Nor let it be imagined that he lives in a locality specially free from the thistle nuisance. On the contrary, he is in a very thistley region, one of the worst with which I am acquainted. His farm is an oasis in the midst of a weedy wilderness. He can say with Cæsar: "*veni, vidi, vici*;" "I came, I saw, I conquered;" The sight of his fields, destitute of a solitary weed, is a very beautiful one, well fitted to inspire all beholders with a determination to "go and do likewise."

The grand result has been attained by adopting and rigidly carrying out the maxim, "death to weeds." "Eternal vigilance is the price of liberty." He has gone on the Donnybrook Fair principle, "whenever you see a head, hit it." Acting on the resolve not to tolerate a weed on his place, the task has been less arduous than might be supposed. Nor does it grow harder with the multiplication of weeds around him. He says the most difficult part of the process was at the start, when the land was new, and plants of all kinds grew so readily and luxuriantly. With no thistle roots in the soil, he has little trouble in guarding against the annual seeding from adjoining farms. Fall ploughing effectually kills all thistle plants of that season's growth. Every spring the growing crops are scanned with eagle eye, and if a weed of any kind shows itself, it is destroyed there and then. The strength of the land not being wasted on useless growths, the yield of farm products is large, and there is an air of thrift apparent everywhere about the place.

I was talking with a farmer the other day who is building a new house to replace the old log one which has been the only dwelling on the place from the time the land was cleared, a long while ago. He was telling me what anxious deliberations he had passed through as to the material he should adopt. Stone is abundant in the neighbourhood, and almost all the better class of houses are constructed of it. A properly-built stone house looks well, and is a permanent structure. But he had come to the conclusion that stone houses are damp and cold. He could recall many cases of families that were healthy in the old log cabin, who had considerable sickness after moving into the new stone house. Brick was little if any better, in his estimation. So he came to the conclusion to build a frame house on a stone foundation. He adopted the balloon frame, boarding horizontally on the outside, then putting on a layer of tarred paper, and siding the outside with rustic. This gives a four-inch dead-air space between the sheathing and the plaster. Such a house must be both dry and warm. It may not be so durable as stone, but kept well painted, it will last for several generations.

Is this man right as to the dampness and coldness of stone houses? The idea largely prevails that if stone walls are furred and studded so that there is a dead-air space between them and the plaster, the house will be dry and warm. But is this idea a correct one? A stone wall embedded in the ground, must, by capillary attraction, become damp through its entire extent, and will not the moisture permeate the comparatively thin coat of plaster which lines the inside? As a matter of fact, we know that it does, and that there are no bed-rooms so cheerlessly cold as the spare bed-rooms in large stone dwellings that are usually remote from fires, and only occupied semi-occasionally. Want of ventilation and lack of fires account for this to some extent, but after all, it does not seem wise to rear a damp enclosure for human beings to live in. Dry cold is easier to endure than moist cold. This is why the climate of Manitoba is more tolerable than a milder one where the air is more laden with dampness. On the whole, I am inclined to think the choice of a frame house tightly built in preference to one of wood or stone, is a wise one.

The house of which I have been speaking is located far back from the road, near the centre of the farm. When I asked the reason for setting it there, I was told it was much more convenient for getting at the various parts of the farm, than if it had been placed near the road. But I think the convenience is more imaginary than real. The traffic to and from the road all the year round is greater than that to the various parts of the farm. There is often serious inconvenience in breaking a track from the highway in the winter time, when the house is far back. Besides, it greatly increases the loneliness of farm-life when the house is a long way from the public road. There is a degree of enlivenment about seeing teams pass, and you often have an opportunity of exchanging a few words with friends and neighbours if you live near the highway, which you miss when the house is in the centre of the farm. In addition to all this, it is easier to lay out a nice front near the public road, and when laid out, all who drive by have the pleasure of seeing it. It relieves the monotony of a journey to pass a succession of such fronts, and note the various expressions of character and displays of taste which present themselves as you go along. Finally, in case of a break-down, or mishap of any kind, it is a weary pilgrimage to the centre of a farm for any help that may be needed, or any requisite that circumstances may demand. If the front of a lot is low and unsuitable for a building site, there may be no choice but to go back some distance, but other things being equal, I cannot but think that the best place for the house and barn is pretty near the public highway.

Self-binders are steadily making their way into public favour. They are the climax of a wonderful revolution in harvesting. "Look at that boy of mine," said a farmer to me the other day, "he's only fifteen years old, and he's doing the work of ten or a dozen men driving that self-binder." A man is very independent on the labour question in harvest time if he owns one of these machines. He has no need to run all over the country in search of extra help, and then turn his house into a temporary hotel to entertain them. Harvest is hardly a busier time than any other on a farm equipped with one of these reaping automata. The one drawback is their costliness. This is greater relatively to the small than to the large farmer. A farmer in my neighbourhood who owns and works 600 acres, appears to be at hardly any more expense for the larger implements than others who have places comprising only 100 acres. One would think several neighbours might combine and own a self-binder among them. The difficulty is that all want to use it about the same time, and if the weather be catching, there is danger of loss by delay. But, certain it is, that the investment in labor-saving implements necessary to run a 100 acre farm has come to be a serious item. It should at least teach the necessity of taking the best possible care of implements when they are bought. I think there is great and culpable neglect on this point. I often see costly implements, such as reapers and mowers, left out in the weather for weeks and months together, to say nothing of ploughs, harrows, rollers, and less expensive farm requisites. *This is very bad economy.* Machinery exposed to sun and rain, must suffer from warping, shrinkage and swelling of timber, and from rusting of iron. All farm tools and implements should be kept under shelter, and well oiled from time to time, that they may be always in good working order, and last as long as wear and tear of actual use will let them. W. F. C.

[*Erratum.* Page 148, Aug. No., middle column, line 15 from bottom; for "heat it," read "treat it."]

TORONTO INDUSTRIAL FAIR, AND SEMI-CENTENNIAL EXHIBITION.

THE DOMINION SHOW AT OTTAWA.

Following out the idea of the late demonstration on the occasion of the fiftieth or Semi-centennial year of the incorporation of Toronto as a city, the Industrial Exhibition Association have determined to make their forthcoming exposition of such magnitude as will throw all former attempts in the shade.

The buildings are being enlarged, on account of the extra number of applications for space, and an elaborate programme of attractions of a novel and most interesting character is being prepared for the occasion. The exhibition will be opened by the Governor-General and the Marchioness of Lansdowne on the 10th of September. The *fête* will continue over to the 20th inst. Among the attractions already announced are an international fireman's demonstration, a collie show, and field trial by the dogs. There will also be balloon ascensions, and an electric railway. Mr. H. J. Hill, the manager, is going on a visit to New York and other points in search of special attractions of the latest and most interesting kind. There will be special days for different visitors, such as a farmer's day, a school children's day, a society's day, etc. This will be the greatest event of Toronto's jubilee year, and will doubtless attract thousands of Canadians from the United States, and the outlying Provinces of the Dominion.

Ottawa will be the scene of the Dominion show for the current year. The programme on that occasion promises to be one of unusual excellence. The exhibition begins there the week following the close of the Toronto show. The attractions of the capital added to those of the show will make the success of the Dominion exhibition for 1884 a foregone conclusion.

AUSTRALIA is having oysters and the salmon family introduced to its waters, with success.

LOCUSTS are doing great damage in Vera Cruz, Mexico, endangering the crops of sugar, tobacco, and coffee.

CANADA SHORTHORN HERD-BOOK.

Below we give a list of transfers of thoroughbreds reported up to August 14th, 1884. In the following list the person first named is the seller and the second the buyer.

B. Forester [12176], by Young Doctor [9571], Wm. Copp, Fenelon Falls ; John A. Ellis, Fenelon Falls.

H. Florence Dixie (vol. 9), by Prince of Seaham [7681], Richard Jackson, Londesboro' ; Henry Cottle, Londesboro'.

H. Nellie Gray (vol. 9), by Prince Arthur [10312], George Staples, Lifford ; R. Henders, Yelverton.

H. Lilly Dale (vol. 9), by Prince Arthur [10312], George Staples, Lifford ; Alex. Matchett, Millbrook.

B. Ajax [12179], by Prince Royal [10043], Thos. Nicholson & Son, Sylvan ; And. Smith, Parkhill.

B. Beverly Boy [12180], by Wentworth Duke [9517], Norman Able, Troy ; Robert Inksetter, Copetown.

B. Gladstone [12181], by Statesman [9420], John Mouncey, Frazerville ; George English, Hastings.

C. Daisy (vol. 9), by Royal Sandy [5204], Thos Ross, Blyth ; Thos. Pentland, Dungannon.

C. Victory (vol. 9), by Royal Duke [7795], John E. Couse, Wyoming ; James Berry, Scotland, Dakota.

B. Prince of Lorne [12192], by Prince of Wales [9170], John Berry, Leadbury ; James Hazelwood, Kirkton.

H. Lady Lansdowne (vol. 9.), by Windsor Fitz Windsor, Isaac Gardiner, Morpeth ; Richard Hunter, Exeter.

C. Empress 4th (vol. 5), Thos. Stock, Watertown ; Richard Smale, Exeter, Neb.

B. Rob Roy [12196], by Victor [9586], Charles Harvie, Orillia ; Charles Martin, Parry Sound.

B. Conqueror [12207], by (imp.) Statesman 1st [9420], (44095), John Isaac, Bowmanton ; Robert Willock, Lindsay.

H. Clarissa Gordon (vol. 9), by Earl of Dalhousie [9942], Jos. Leask, Taunton ; Thomas Ormiston, Enniskillen.

C. Clarontine 7th (vol. 9), by Young Prince [7613], Chas. A. Wade, Parkhill ; And. Aitkin, Parkhill.

B. Jim [12213], by Crown Prince [5929], John Isaac, Bowmanton ; Christopher Carruthers, Cobourg.

B. Nonpareil [12215], by British Hope [12214], J. & R. Hunter, Alma ; A. & P. White, Pembroke.

The Novelty Rug Machine, manufactured by Mr. R. W. Ross, of Guelph, is as effective and useful as it is simple in construction and economical as to price. We cheerfully recommend it to our lady readers, as being all that the enterprising inventor and manufacturer claims it to be. See advertisement in other columns.

"How to Tell the Age of a Horse," is a small pocket manual chuck-full of information for any one who has anything to do with that noble animal the horse. There are quite a number of illustrations, and the chapter on "Horse Character," is well worth the price of the book. Published by M. F. Richardson, New York.

Mr. Henry Wade, the efficient Secretary of the Agriculture and Arts Association, asks us to mention for the information of our readers, that any one wishing to attend the annual show of the American Clydesdale Association can secure a return ticket at one and one-third fare over the Grand Trunk Railway on presentation of a certificate duly signed by Mr. Wade.

THE NORTH-WEST AS A HUNTING GROUND.

THE BIG GAME OF MANITOBA AND THE NORTH-WEST.

It used to be a common boast with the better educated plain hunters and trappers of the Hudson Bay Territory, that no part of the world yielded as much pleasure in the chase as their country. It is true that work must be expected, and hardships endured, while in pursuit of it, but as these were calculated to give zest to the sport, a hunter's life was bound to be a weary and exciting one. In those days buffalo were very plentiful, but when these became practically extinct, some nine years ago, sportsmen hearing of it, fancied that most of the pleasures of a hunter's life here were destroyed. The sooner such an illusion is dispelled the better; for after seventeen years of a more or less hunter's life in British North America, I am satisfied that to the true sportsman, there is no country in the world which will yield so much pleasure to his efforts as this. For very many years Quebec has held a high reputation as a moose hunting ground, but it requires very little experience of the country west of Lake Winnipeg to the Lower Saskatchewan or the Arthabasca region, to convince any one that they are very far ahead of that province. Here we have and are likely to retain for years to come, one of, if not the finest, deer countries in the world, abundantly stocked with moose, wapiti, and caribou. Father Peticot tells us of two Indians killing over two hundred moose on the Arthabasca in one year, and I myself, have killed as many as sixteen in a winter's trapping and hunting on Lake Winnipeg. Regarding wapiti, which is beyond doubt our handsomest deer, such results may not be expected, for they are, I am sorry to say, being rapidly thinned, as their feeding grounds, which lie in the border grounds of the great plains, and the true forests are rapidly being peopled with immigrants ; but many good locations may be found in the neighbourhood of the Riding, Duck and Porcupine Hills, and further west in the Upper Beaver River country, and the Buffalo Lake district. Besides this they are scattered all along the foothills of the Rockies from the boundary line to the Liard River. The same may be said of the black tailed deer, and as it is more abundant the hunting grounds are somewhat more extended. Caribou, or reindeer, we have in two varieties, the common caribou and the barren ground caribou. The former is not found except along the great lakes north of Winnipeg and east of them, and is fairly abundant, going about in droves of ten to twenty. Of the barren ground caribou, however, it is impossible to define the limits or quantity. Thick as the buffalo ever were, they were but scarce when compared to the northern caribou, for they are in droves of hundreds of thousands, or even millions throughout all the northern country of Lake and Muskeg. As many as twenty thousand dried tongues have been taken at one Hudson Bay Co's. fort, in Lac des Brochet district for one winter's provisions. The space of this article will not permit me to dilate on this noble deer, nor yet the excitement of the chase in summer or winter, but when it is considered that they make their home in the *terra incognita* of the north in companionship with the musk ox and the Chipewyan Indians, in the land where Franklin's followers died, in the land of a single day and a single night, the real "Wild North-Land," which Capt. Butler just touched upon,—sportsmen will understand me. My footsteps have crushed the moss a little in this land, and I have shot on its outskirts, but the loneliness of its remote wilderness I have not entered. Some day the great value of our far north, as a hunting ground, will be understood, and sportsmen will penetrate its lonely scenes, and I can promise them ample reward for their daring and endurance. The impressive character of its scenery, the unexpected encounter with bear, black wolf, and nobler game, giving it an ever changing, ever pleasing excitement. No cumbrous outfits are required as in Africa, but depending as a hunter should on Nature's bounty canoes and snow-shoes, guns, rifles, traps, hooks and nets, are what the sportsman wants, and in return may get moose, wapiti, caribou, black-tailed deer, bighorn, grizzlies and black bear, beaver, lynx, grey and black wolf, and in more remote districts white bear and musk-ox, He can catch abundance of trout, grayling, white fish and innumerable coarser fish. He can shoot seven kinds of geese, twenty-seven kinds of ducks, five kinds of grouse, and many other game birds and smaller mammalia.

Selkirk, 14th July, 1884. ADRIAN NEISON.

NORTH-WEST NOTES.

MESSRS GREIG BROTHERS, Otterburne, sold lately in Winnipeg market a grave shorthorn steer, three year old last April. The animal was a good specimen of Manitoba feeding, it weighed 1,590 lbs, which at six cents per lb live weight (the selling price) netted $93,60.

BETWEEN Troy and Pense, exclusive of the Bell Farm, and exclusive of the country round Moose Jaw, there are 30,000 acres under seed. Would it not be well for the C. P. R. to erect an elevator here to handle the immense quantity of wheat which will be produced this year ?

MR. JOHN LAUT, who recently bought up four cars of stock from Ontario for the Assinboine Valley Farming Company, has gone down to that Province for a lot of two year old heifers for Mr. John Morrison. Mr. Morrison has recently arrived from Dumfreishire, Scotland, and has secured land on the south side of the Assinboine in the parish of St Francois Xavier. He will go extensively into stock raising.

THE *Calgary Herald* says :—A few weeks since Mr. James Miller, of the Red Deer settlement, and Mr. McKenzie, were riding along when they noticed a bear on the trail. They headed him off, and getting pretty close Mr. McKenzie dismounted, armed with a double-barrelled shot-gun, when his bearship made an advance on him. Mr. Miller held the horses, which were restive, while Mr. McKenzie, with well directed aim, lodged the contents of both barrels in his kidneys. Bruin dropped, but not dead; Mr. McKenzie then fired two or three shots into his head, but they had very little effect. Mr. Miller then took the lariat from the pommel of his saddle, and taking a hitch around the bear's hind legs attached the other end to the tail of his horse and made for home, about four miles off, at a lively pace ; arrived there the bear was still alive, but was quickly despatched with a blow on the head. He weighed 350 lbs. Very few sportsmen would care to attack a bear with No. 3 shot.

GARDEN AND ORCHARD.

FLAT LANDS FOR ORCHARDS.

Some discussion has recently taken place among fruit-growers and writers at the West, on the question whether high or low land is best for orchards. The experience of late years has shown that apple trees in many instances have succeeded best, lived longer, and borne better crops, when planted on low, flat and moist land. From these facts the inference has been drawn by some persons that apple trees need a large supply of moisture, and even that drainage is detrimental—and writers who have recommended upland are charged with giving bad advice. The cast-iron rule has therefore been laid down: "Always plant apple trees on low and moist land."

Some western orchardists have expressed the opinion that the reason low lands have given the best results, is that the soil is deeper, mellower, and more nearly resembling the manured and cultivated ground of the best managed orchards, and that if manure and cultivation were applied to the orchards on upland, they would give a different and more favourable report. Whatever the result might be, it is certain that in many places high ground gives as good, and often better, crops than depressions, and the above-mentioned rule should therefore be modified or changed to "always plant on such land as experiment shows to be best, whether it be high or low land." Success depends on the character of the soil, and on the treatment it receives, and not on its depression or elevation. Sterile ridges, where they exist, must either be avoided or else brought into a good condition by manure and cultivation.

Mistaken notions are sometimes adopted on the effect of draining. Instead of making the land drier, it tends to give a more uniform and continuous supply of moisture to growing plants, by changing a hard crust into a mellow or porous bed of earth, which will receive and hold surplus water, and give it off as wanted. The instances where orchards have been greatly improved by placing tile-drains between the rows of trees have fully proved the benefit of drainage.

The preceding remarks apply wholly to apple orchards. Peach trees, on account of the partly tender character of the fruit buds, usually bear best on elevations, in all localities where the crop is liable to destruction in winter. The cold air settles in valleys, and often proves fatal to the buds, while they escape and give good crops on ridges.—*Country Gentleman.*

RHUBARB CULTURE.

Rhubarb, like currant bushes, will grow almost anywhere and under any treatment, and consequently receives more ill usage than any other "green thing growing." But, for this reason, it should not be supposed that when growing under neglect and abuse it will do its best and produce as abundant crops and of equally good quality as when good treatment is given. After it is once planted, says the *American Garden*, rhubarb requires but little cultivation; but it must have at all times deep, rich soil, the richer the better. In field culture the roots are planted about four feet apart each way, and cultivated like any hoed crop. In the family garden they should be planted two or three feet apart, in a single row, at least four feet distant from other plants. It may be raised from seed; but as there is little reliance in the seedlings being of the same variety as the parent plants, division of the roots is the method of propagation usually adopted. Any piece of root with a bud or crown will grow, if planted about two inches deep in mellow soil, firmly pressed about it. Roots may be planted in Autumn or early Spring. Plantations are usually renewed every four or five years; yet when a liberal dressing of manure is given every Fall, the roots will produce a crop for an almost indefinite period. Heavy manuring, clean cultivation and liberal space are essential requisites for raising large, succulent rhubarb. The varieties best known are: Linnæus, grown extensively for market as well as home use. It is early, very productive and of a brisk, spicy flavour. Its principal fault is that it seeds so freely that, unless all flower stalks are cut off as soon as they appear, the crop deteriorates rapidly. Victoria is later, has larger leaves and stalks, and requires very rich, rather heavy ground for its best development. Paragon—this is a new variety, originated in England, and now introduced here. The stalks are bright red, heavy and produced in quick succession and great abundance. It is earlier, of more delicate flavour, and has decidedly less acid than any other variety we are acquainted with. But its most remarkable and most valuable qualification is that it does not produce flower stalks, to which fact its great productiveness is mainly attributable, all the strength of the plant being used for the development of its leaves.—*American Cultivator.*

SLUGS IN GARDENS.

Our dry, hot summers are not as genial to the development of these garden pests as the damp atmosphere of England; yet several enquiries from readers seem to indicate that they are on the increase in some localities. A subscriber writes: "A slimy, creeping snail is very destructive to my plants; how can I destroy these insects'?"

Well, in the first place, a snail is not an insect, but a mollusk; and, in the second, the animals which destroy your plants are, properly speaking, slugs. The garden snails of Europe (*Helix hortensis*) do not exist here. There are a few species of this genus found here in damp woods, but they are never seen in sufficient numbers in our gardens to do any damage. The term snails, as commonly used, comprises all land mollusks with shells or houses; while under slugs are understood all land mollusks without shells.

In English gardens slug-hunting is among the most important routine operations, and a method which is found as satisfactory as any is to go along all the walks of the garden each evening with a bag or bucket full of bran, and place a handful of it on the borders, at every eight or ten feet, in a heap. Slugs are very fond of bran, and it seems to attract them from all quarters, so that the heaps are soon found covered with them, often a complete mass. Early next morning traverse the same ground with an empty bucket, a dust-pan and a small broom, sweeping bran and slugs into this dust-pan and emptying all in the bucket. By the time the circuit has been completed many hundreds, if not thousands, are thus captured. By throwing some salt in the bucket they may be killed in a very short time.

Another plan is to lay cabbage-leaves, upon which some fresh lard has been spread, near the plants in most danger of the depredations of the slugs. This is done in the evening, and early next morning most of the slugs near by will be found under the leaves. They may then be scraped off and destroyed, and by keeping the leaves in a cool, shady place during the day-time, they may be used for many nights.

If cut worms infest the garden, lay pieces of board about. The worms will take refuge under the boards in the heat of the day and may then be killed.

SHELTERING ORCHARDS.

Among late topics introduced into some of our agricultural and horticultural contemporaries is that orchards to make them productive, must be sheltered on at least two sides from the cold blasts of winter. This shelter is to consist of hedges of evergreen trees and be of sufficient height and density to make a secure defence.

The thing in our judgment is a fallacy. Instead of proving advantageous to an orchard, we believe a hedge, or protection of any kind, would be a positive injury. Apple orchards planted in valleys and southern exposure will not, as a rule, be as healthy or yield crops at all to be compared to orchards planted in elevated positions, opened to the wind from every quarter. Indeed, if we were about to set out an orchard to-day, we should select a high northern exposure. All our experience and observation goes to show such a position to be the best. Those about setting out orchards the coming spring should avoid what they will be likely to find a serious error. It is a notorious fact that, even in Maine and other extremely cold States, northern exposures are selected for apple orchards, where they stand the severity of the climate much better than in valleys or where they have southern exposures or are sheltered. A Maine farmer says: "Were I to plant an orchard and had two locations, one a valley, surrounded by hills except on the south side, and the other a high elevation, exposed to the cold winds, I would choose the latter in preference to the former." The same holds good as regards peach orchards. A great object is to keep back the blooming as long as possible, and this can best be done in northern exposures without shelter.

This, we think, will be found to be the experience in Middle, Northern and Eastern States, of many observing apple-growers. There may be some exceptions, it is true; but they are only the exceptions to the rule.—*Germantown Telegraph.*

PLANT A VINE.

When a grape vine gives back so much for so little, it seems strange that any one, with a yard of earth at command, can fail to plant one. Yet how many farms have not a vine about them. This humble friend asks only a foothold of good earth, and a support, however rude, and it will throw out its arms and thrive luxuriantly, beginning earlier than almost any other fruit to reward our labour. By a judicious choice of vines, a succession of this delicious fruit may be enjoyed from early summer until the hard frosts come. While it rewards well the highest culture, it will shirk for itself fairly well in out of the way nooks and corners where nothing else can well be raised. One strong, old vine of ours, of the Isabella variety, threw its branches and tendrils all over a great oak, and grew there year after year, producing some years four bushels of grapes, which made excellent jam, besides delighting all the children visitors at the parsonage.

Dusting the leaves with white hellebore powder is said to be the best remedy for the gooseberry span worm. Be careful that you do not inhale the powder.

If you are young, plant trees; if you are about to exchange time for eternity, plant trees; they will be a more enduring monument to your memory than the costly marble.—*Seed Time and Harvest.*

If you are intending to save your own garden seeds, take more pains to select some of the best plants for this purpose. Do not wait until the best are gone and then save the leaves for seed. This is very poor economy at best.

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MISSING

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MISSING

Hif my boy haint fit society for your boy, we don't none of us want nothing to do with you."

Of course, to such a speech as this no civil reply was possible, so Mrs. Sunderland quietly withdrew from the scene of action, leaving her neighbour in possession of the field. The predicted quarrel had come, greatly to Mrs. Sunderland's mortification; for to have it known to the whole town that she was at variance with her next door neighbour—as, thanks to Mrs Cooper's unscrupulous tongue, it speedily was—was felt by the widow to be a real disgrace.

All that she could do to smooth matters over she did, with no effect, however, except that Mrs. Cooper subsided gradually from a ferocious into a sullen mood, but lost no opportunity of exhibiting her dislike and ill-will in the numberless little ways which a near neighbour can always make available.

The quarrel between the boys was of much shorter duration. In the course of a few days Charlie's red head was again see bobbing over the divison-fence, and Frank being responsive, the former intimacy was soon re-established. When September came and the schools re-opened, the two lads became school-mates and class-mates.

Charlie was a bright boy, and his parents had kept him steadily at school, and were very proud of his attainments; but though he was two years older than Frank, the latter was more than his equal in school-standing. There was no brag about Frank, however, and there would probably have been no jealousy on Charlie's side had it not been excited by home influence. Mrs. Cooper was bitterly jealous and envious, and her sneers and innuendoes did much toward making her son as unreasonable and suspicious as herself.

A few months after the school opened, an examination was held for the purpose of promoting such of the scholars as were fitted for the advance to higher departments in the school. Frank Sunderland was the only boy in his class who was successful in passing the examination, though Charlie Cooper had not been far behind him, and his heart, and his mother's as well, had been set upon his obtaining the promotion.

That he failed to do so was, in itself a bitter disappointment, but that Frank should succeed where Charlie failed was a trial much harder to endure. Mrs. Cooper's undisciplined tongue wagged freely, and her opinion that the school was conducted upon the rankest principles of favouritism was widely disseminated. She would even have been foolish enough to withdraw Charlie from the school had not his father interposed his rarely exerted authority and put a positive veto upon any such absurd proceeding.

As usual, Charlie's wrath soon evaporated, and as there was now no occasion for actual rivalry between them, the two lads got along very harmoniously,and Frank was able to do many a kind turn for Charlie, which the latter, as a general thing, fully appreciated.

Though very well aware of the rumour of Mrs. Cooper's feelings toward her and Frank, Mrs. Sunderland was sensible enough to feel rather amused than irritated, even when Mrs. Cooper's conduct, on their chance meetings, verged upon actual insolence. The widow's cheerfulness and politeness continued to be quite invincible until the events of a certain morning proved to her that forbearance had at last ceased to be a virtue.

It was a cold day in January; Frank had gone to the well to draw a bucket of water, but found the well bucket half-full of ice, so that it would not sink when lowered into the water. His mother came to his assistance, but succeeded no better than he had done. Charlie Cooper was at the well in their own lot, scarcely a stone's throw distant, and he called out:

"Come, fill your bucket here, Frank; our well is all right."

Without stopping to ask permission, Frank scrambled over the fence, and soon the two lads were laughing and joking together as Charlie lowered the bucket. Just then Mrs. Cooper came out of the house and advanced towards them; she brought another bucket to fill, one that was already half-full of water which she was shaking around in the bucket, preparatory to throwing it out.

"What are you doing in my lot, sir, may I ask?" she said, as she noticed the intruder. Frank coloured, and took up his still empty bucket.

"Never mind, Charlie," said he; "we can get the ice out of our own bucket; I'll go back, now."

Charlie was provoked at his mother, and his temper being as ill-governed as her own, he turned towards her angrily, crying: "What's the use of being so hateful? you ought to be ashamed of yourself!" at which words his mother's anger rose to the exploding point.

"I'll thank you to mind your own business, Charlie Cooper!" she said; and then turning ferociously upon inoffensive Frank, "as for you, you young haristocrat, I want you to get hoff my premises, and stay hoff 'em. We don't want no favourites round here." Then, throwing the contents of her bucket, not absolutely at Frank, but with an utter disregard of what she was doing, she dashed the water in such a way that the lad was completely drenched.

Mrs. Sunderland advanced to the fence to help Frank, shivering and crying, to get over it. Her gentle temper, proof against insults or attacks directed upon herself, was at last aroused. Frank was a very delicate child, and the effects of such a shower-bath upon such a morning might be serious. With flashing eyes and face flushed with indignation, she turned upon her enemy, who did have the grace to look a little ashamed of herself.

"You are a wicked, cruel woman, Mrs. Cooper, and henceforth I will have nothing to do with you." Then she hurried Frank to the house, and mingled her tears with his as she helped him to attire himself in dry garments.

The lad had a cold and a sore throat as the result of his drenching, and his anxious mother, during the period of his indisposition, entertained towards Mrs. Cooper a resentment hearty enough to have satisfied even Dr. Johnson. Frank got well that time, however, and was soon at school again bright and merry as usual.

But he had several attacks of sore throat before the winter was over, and they left him so weak and puny that his mother never before welcomed spring weather so gladly as she did that year. Frank seemed to get quite well and strong as the warm weather came, and therefore perhaps less prudent, for in May he again caught cold and came home sick from school.

He was severely ill from the first; in a few days diphtheritic symptoms developed themselves, and twenty-four hours later the bright young soul was freed from its frail tenement, and Mrs. Sunderland was a childless widow.

I will not dwell upon her desolation; the whole community sorrowed with her; everybody had liked merry Frank Sunderland, and his mother was almost an equal favourite. If friendly sympathy could have lightened her grief that solace would have been hers; perhaps it did, even though unconsciously to herself, but, as she sat the evening before the funeral by the side of her dead darling, she felt as though there could never be any more brightness or pleasure for her this side of eternity.

She sat there tearless, speechless and despairing, and heard not the timid knock that came upon the door, nor did she notice the figure that a moment later entered the room, until a voice choked with sobs said:

"Please, Mrs Sunderland, mayn't I see him?"

Then she turned and saw Charlie Cooper. The boy's swollen eyes showed that he had been crying, but Mrs. Sunderland looked at him, apathetically, and when she had realized what it was he wanted, turned quite calmly towards the coffin and withdrew the cloth that covered the waxen face.

Charlie gazed for a few moments upon his dead school-mate, awed and silent, though the tears chased each other down his cheeks. In a little while the mother kissed the marble brow, till with that unnatural calmness, and re-covered the face.

Charlie was trembling from head to foot with repressed agitation, and Mrs Sunderland almost unconsciously laid her hand upon his shoulder as if to calm him. At her touch the boy's self-control gave way; with a child's instinctive desire for comfort and support in sorrow, he flung his arms around her, and dropping his head upon her bosom, burst into a violent fit of weeping.

"Oh, Mrs. Sunderland!" he cried, "I can't bear to have him die; I can't—I can't—he was always so good to me."

The mother's lips quivered: her features worked convulsively; the healing tears came at last to her aching eyes, and with her face bowed upon Charlie's curly head, she, too, wept freely and softly, and with the blessed tears the first bitterness of her anguish passed away.

Mrs. Sunderland's friends came to her and took her away from the scene of her bereavement. All that affection could do was done to cheer her, and after a few months her healthy, cheerful temper began to reassert itself, and so aided the effort of beneficent nature that by September she felt able to return to Greenville and her boy's grave, and to become again, in a measure, her old calm and gentle self.

The schools had just reopened, and though the remembrance of one short year ago, when her own boy was there, the brightest and the most hopeful of the young throng who commenced the school year together, brought a pang of almost unbearable pain to the mother's heart, she endured this suffering as she had endured all the the rest—uncomplainingly.

The examination for promotion was again held, and this time Charlie Cooper ranked first among the five of his class who were promoted to the higher department. Mrs. Sunderland was sincerely pleased when she heard of the lad's triumph, and a few mornings later, when she met him, she stopped to shake hands with him, congratulating him most cordially. But how does it happen you are not in school this morning? she asked.

"I—I—don't go to school just now?" he stammered. "I've stopped a while."

"Why, how does that happen? Surely, now is the very time you ought to be most regular in attendance."

"I know—I'd like to be, but"—again he stopped, much embarrassed, and it was not without a good deal of questioning that Mrs. Sunderland at last drew from him the information that he had ceased to attend school on account of his father's inability to procure for him the new set of school books his promotion had made necessary.

"Father's had a felon on his hand all summer, and it's not well yet. He hasn't been able to work much, and we've had to be awful economical. Mother cried like everything when father said he just couldn't spare the money to buy a lot of new books. She was mad at first, but she soon got over that, for she knew father couldn't help it.

She's saving up now, and so am I, and we'll raise the money between us before Christmas, I guess, though those kind of books do cost like smoke," he concluded, with a rueful sigh.

After he had gone Mrs. Sunderland returned to her home, and, entering the darkened parlor, sat in the rocking chair and rocked and cried softly for a long time.

Then she went up stairs and opened a deep drawer in the bureau, from whence issued a strong perfume of withered rose leaves. She removed the linen towel that shrouded the contents of the drawer, and from one corner drew forth a slate and a pile of school books, almost new. She opened the books one by one, and in each she kissed the name, "Frank Sunderland," inscribed in a big, boyish hand; then she laid her cheek upon the books, fondling them as though they were living creatures, and cried again.

At last she wiped her eyes and tied up the books in a neat, strong package.

"I am doing just as he would want me to do," she said to herself. She wrote the name of Charlie Cooper upon the package, and giving it to her little kitchen maid, directed her to take it to the house of her neighbour, Mr. Cooper.

The evening of the same day, as Mrs. Sunderland sat alone, reading over a few verses from her Bible before retiring for the night, she heard a bustle of approaching footsteps, the door opened, and her little maid said.

"Here's Mis' Cooper wants to see you a few minutes, Mis' Sunderland."

She ushered into the room a tall, gaunt figure, whose head and shoulders were shrouded in a dark shawl, and then discreetly withdrew.

Mrs. Cooper, for she it was, advanced toward Mrs. Sunderland as the latter arose. "I've come to talk about them books you sent to my Charlie," she said, roughly, almost fiercely.

"Yes," replied Mrs. Sunderland, deprecatingly: "I hope you don't feel offended, Charlie told me his father did not feel able to buy the books he needed just now, and I thought it a pity he should be obliged to get behind his class on that account."

"My Charlie says them books is the ones you bought last year for your Frank; is that so?"

"Yes," Mrs. Sunderland said, her voice faltering a little," they were my boy's. Charlie was fond of him—I couldn't have given him those books if he had not been."

"You're right "and the fiery voice grew suddenly husky, "my Charlie's been a crying hover them ever since he got them, and I don't wonder, for the sight of 'em has made me do what I never did for living creature in hall my life afore. I've come hover to beg your pardon for all my hugliness to you and to him that's gone; you poor, dear soul, you—hido, hido," and fierce, evil-tempered Mrs. Cooper ended her sentence by bursting into a hearty fit of crying.

Mrs. Sunderland clasped in hers the knotted, toil-worn hands outstretched toward her.

"Don't cry," she said, tears rolling down her own cheeks as she spoke. "I know you are sorry. We'll have to be friends after this, and we will never quarrel any more."

And they never did.

BOB BURDETTE ON FARMING.

This month is a good time to pay the interest on your mortgage and renew the notes you gave a year ago. It is also a pretty good time to take up the notes you unwittingly gave to the cloth pedler last Christmas under the impression that you were only signing a contract.

Oats thrive best in an elevator. A farmer who has thirty thousand bushels of oats in an elevator need not worry about the weather. Always raise your oats in a good elevator and keep out of a deal with the Chicago man.

Look after the bean poles you had left over from last year. You will look a long time before you find any. They have gone, partially into the insatiate maw of the all-devouring fire-place, and the neighbours have stolen the rest.

Raise chickens. If you have a nice little garden, by all means raise chickens. Your neighbour's hens are the best ones to raise. You will find them from 5.30 A.M. until 6.20 P.M., on your lettuce, onion, radish, and flower-beds. You can raise them higher with a shot-gun than anything else. N.B. Always eat the hen you raise. P.S. Cook the hen before eating. P.SS. Before eating the hen, that is.

Crush egg-shells and feed them to your own chickens, if you are foolish enough to keep any. If the whites and yolks are removed from the shells first, they will crush more easily.

If a good horse shows symptoms of going blind, and is developing a few first-class spavins, it is time to sell him. Sell him out of the county, if possible. Beware of the deacon who has a little blaze faced "pacin' mare" he wants to trade for "just such a hoss."

Eternal vigilance is the price of the potato crop. About ten hours a day, devoted to crushing potato bugs with hard sticks, will probably save the upper part of the patch for you. By the time you dig the potatoes, you will be so disgusted with everything pertaining to potato culture that you couldn't look a potato in the eye without a feeling of nausea, and as for eating one—but this enables you to sell the whole bushel without a pang.

Young hens lay more eggs than old ones. This is because the giddy young things have not yet learned their value. In a few years they know just how to stand around on a strike when eggs are $1.75 a dozen, and then rush out and work double time when eggs are so common the tramps won't eat them.

A SUMMER SONG.

Sing a song of summer time
  Coming by-and-by—
Four and twenty blackbirds
  Sailing through the sky.
When the season opens
  They'll all begin to sing,
And make the finest concert
  Ever heard upon the wing;
Blackbirds, yellow-birds,
  Robins, and the wrens,
All coming home again
  When the winter ends.

Sing a song of summer time
  Coming very soon,
With the beauty of the May,
  The glory of the June.
Now the busy farmer toils,
  Intent on crops and money;
Now the velvet bees are out
  Hunting after honey;
Well they know the flowery nooks
  Bathed in sunshine mellow,
Where the morning glories are,
  And roses pink and yellow.

The maiden in the garden,
  Hanging up the clothes,
Fears no more the cruel frost
  To nip her pretty nose;
She flings the linen o'er the line,
  Nor heeds the breezes blowing,
For yonder is her lover
  In the meadow-lot a mowing.
While she lingers at her work
  To catch a nod and smile,
Merry winds have snatched the clothes
  And blown them half-a mile.

—*From the "Youth's Companion."*

THE BACK YARD.

Many back-yards are abominations to eye and nose. One finds in them all sorts of litter and refuse from oyster cans to old boots. Here the slops of the kitchen are poured to increase the odours which ought to warn every thoughtful person of the malarial influence breeding there, to break out eventually in fevers, or diphtheria. If any member of the family dies from one of these diseases, his death is probably lamented as "a mysterious dispensation of Providence," but the minister would say, if he were to visit the back-yard, that death was caused solely by a violation of hygienic laws. A very strong argument against a dirty back-yard is the spirit of deception it is apt to foster in the young members of the family, for it is a constant deceit to present a clean and attractive front-yard to the gaze of the passers, while the back-yard is not fit to be seen. Children should be taught to be clean for the sake of cleanliness, and not because outsiders are likely to criticise them. The best plan is to have a hogshead or large box fitted up in one corner of the yard, and make it a rule to throw into this old cans, boots, broken dishes, and all such rubbish, and when there is a great accumulation to bury or burn it. Do not allow anything to be thrown about. Have drains made to convey all slops entirely away from the house. Make good walks, and let the ground have a fine covering of grass, not weeds. Put up strong supports for the clothes line. Keep the fence in repair, and plant currant bushes near it. Set vines about the refuse barrel and train them over it until it is hidden. If you have a receptacle for ashes, let it be something which can be shut up, not a row of old barrels to offend the eye and give out a cloud of ashes every time the wind blows. Make it a rule to have the back-yard at all times as clean as the front one.—*E. E. Rexford, in American Agriculturist.*

Some farmers appear to forget that their land extends to the middle of the roadway, and that they have rights and duties in connection with the roadsides. At this season it is common to find by the wayside the largest weeds in the neighbourhood. They have had it all their own way, and this has been to ripen a large crop of seeds. Such neglect of the roadside is a great mistake, as it only gives a neglected appearance to the street, but it is a means of propagating weeds that do much damage to the crops in the adjoining fields. It does not matter how clean the cultivated crop may be kept, if weeds are allowed to grow just over the fence. It is too late now to do more than collect and burn these, but in doing this the seeds should be killed, to make the work of subduing these pests less burdensome in the future, besides adding to the attractiveness of the street.—*Times.*

Here is a hint well worthy of adoption: A farmer divides his income among his children according to the work they do. The four sons are equal partners, and share equally in the income and expenses. The farm is 120 acres, and keeps the whole family employed, and at times labourers are hired to help. One manages the market truck, one the cows, and the others the other farm-work, but all help at the general work. The family is well off, and the oldest sons have saved enough to start themselves on farms of their own by and by. It is the only case of the kind I know on a farm, but I know of other businesses in which sons and sons-in-law are partners and the whole family are interested together, and why should not the same be done upon thousands of farms with the greatest advantage to *all* concerned. How much better it is than for a son to be working along on the homestead, neither a labourer nor a partner, grumbling and dissatisfied and waiting for the old man to die, to come into possession himself; or for an old man to be left alone on his farm, and his children away from him, seeking their fortune in other ways, while he learns in his old age, in a sad and painful manner, what it is to be utterly alone and deserted, to spend his few last years in sorrow and bitterness.

YOUNG CANADA.

CHARLIE'S COMPOSITION.

"Our new teacher is a brick."

That was what Charlie said the first night of the term.

"A brick with a gilt edge," was the way he described her Wednesday, but when he came home Friday he surprised his mother by saying:

"I think Miss Ellis is the meanest teacher we ever had."

The reason for the change in his opinion was the fact that she had requested each of the scholars to have a composition for the next Friday.

Grandma was in her room, but she heard him storming about compositions in general and his own in particular, so she called him to her. "What did you say your subject is?" she asked.

"Lead pencils," he answered rather contemptuously. "As if I could say anything about lead pencils that everybody else don't know!"

"Well, let's see," his grandmother said, "how much do you know about them?"

"Why, I know that they are made of a piece of black lead in the middle of a piece of wood; and that they are very useful to write and draw with and that those that belong to me have a surprising faculty for getting lost."

Grandma smiled, and said; "If your knowledge is a fair sample of your schoolmates, I think you can find several items of interest for your composition. In the first place, what is black lead?"

"I do not know," Charlie said. "I suppose it is some kind of lead that is dug out of the ground, isn't it?"

"No it is not lead at all, but graphite, which is a very different mineral. Lead is one of the heaviest minerals, while graphite is rather light."

"Oh, yes," Charlie exclaimed, "I dropped a pencil into the fire yesterday, and when I was taking up the ashes this morning I found the lead part all whole, and real lead would have melted."

"Yes; it is so difficult to fuse," grandma explained, "that heat enough to melt the hardest metals will scarcely make an impression on graphite; on that account crucibles are made from it in which to melt hard metals. Now I have told you enough for a beginning, and if you keep your eyes and ears open, you will be sure to find out something more."

And sure enough, that very day he received a letter from a cousin in Florida, who wrote:

"Pa has sold all the fallen trees in our cedar swamp to some men from the north. They are getting out the timber and shipping it to make pencils of. Pa says that most all the cedar, pencils are made of comes from Florida."

Saturday Charley walked to town, and on the way Dr. Hart overtook him and gave him a ride.

The doctor, in Charlie's estimation, knew everything. Hadn't he been through college and medical school, and to Europe?

So Charley was sure he should find out something more for his composition when he asked: "Dr. Hart, did you ever see a graphite mine?"

"Oh, yes," was the answer, "I have been down the mine at Ticonderoga, in New York. That is one of the best mines in this country."

"It was a black, dirty place, worse, even, than a coal mine; and, by the way, coal and graphite are almost the same thing."

"But they ain't alike, Doctor," Charlie said, "because coal burns and graphite won't."

AN EXCITING SCENE: DEFENDING HER YOUNG.

"That's so;" the doctor said, "I meant that their chemical composition is nearly the same, for they are both mostly composed of carbon. A diamond, too, is almost pure carbon, and that, you know, is one of the hardest substances known, while graphite is so soft and smooth that it is used instead of oil to lubricate some kinds of machinery."

"Are there many mines in this country?" was Charlie's next question.

"Quite a number, I believe. For a long time all the finest graphite for the best quality of pencils was obtained from a mine in Cumberland, England. It was discovered over three hundred years ago, and was considered so valuable that the British government guarded it constantly and only allowed it to be worked a few weeks each year, that the supply might not be enough to lower the price. Notwithstanding the precautions taken, considerable quantities were stolen sometimes by means of tunnels.

"That mine was exhausted some years ago, but had it not been the monopoly the British government held so long would have been broken, for in the last quarter of a century immense deposits of very fine ore have been found in Siberia."

Charlie then asked why there was such a difference in pencils, and the doctor explained that the graphite is ground into powder and mixed with a certain kind of clay that comes from Germany; the more clay there is used the harder the pencil.

"I have been through several pencil manufactories, one in England. The English are far behind us, at least in speed, for they still make one pencil at a time, while we make several together and saw them apart. I was told that with the improved machinery now in use ten hands could make about 4,000 of the common grade of pencils a day, but here we are at the office."

One of Charlie's errands was replenishing his stock of pencils. He bought five for a nickle, and while Mr. James was doing them up, Charlie said: "I don't suppose you make much on pencils, Mr. James, do you?"

"Oh, yes. I make a pretty good per cent. on them, and the manufacturers make about 100 per cent. you see graphite costs about 25 cents a pound and the clay not much more than the freight."

When Charlie was going home he met the doctor again, who called out, "Been buying some graphite, I see."

"Yes," Charlie said, "I bought some pencils but how did you know? They are in my pocket."

"Oh, I didn't mean the pencils, but that stove blacking sticking out of your pocket. That is made mostly of graphite."

When Charlie reached home he told his grandmother all he had learned and said: "But what do you suppose made them called lead pencils?"

"I suppose," his grandmother replied, "that before the day of graphite pencils they used ordinary lead to write with; you know it will make a faint mark, and the name was retained when this more convenient substitute for [illegible] pen was discovered. And now," she [illegible] think you have material for a pr[illegible] position."

WHEN THE COWS COME HOME.

With klingle, klangle, klingle,
  Far down the dusky dingle,
  The cows are coming home:
Now sweet and clear, and faint and low,
The airy tinklings come and go,
Like chimings from a far-off tower,
Or patterings of an April shower
  That makes the daisies grow:
Ko-ling, ko-lang, ko-lingle-lingle,
  Far down the darkening dingle
  The cows come slowly home;
And old-time friends and twilight plays
And starry nights and sunny days
Come trooping up the misty ways,
  When the cows come home.

When jingle, jangle, jingle,
  Soft tones that sweetly mingle,
  The cows are coming home;
Malvine, and Pearl, and Florimel,
DeCamp, Red Rose, and Gretchen Schell,
Queen Bess and Sylph— and Spangled Sue,
Across the fields I hear her "loo-oo,"
  As she clangs her silver bell,
G. ing, go-lang, go-lingle-dingle,
  With faint-far sounds that mingle
  The cows come slowly home;
And mother songs of long gone years,
And baby joys and childish fears,
And youthful hopes and youthful tears,
  When the cows come home.

With ringle, rangle, ringle,
  By twos and threes, and single,
  The cows are coming home;
Through violet air we see the town,
The summer sun is slipping down,
The maple in the hazel glade,
Throws 'cross the path a longer shade,
  And the hills are growing brown:
To-ring, to-rang, to-ringle-ringle,
By threes and fours and single,
  The cows come slowly home,
The same sweet sound of wordless psalm,
The same sweet June day rest and calm,
The same sweet smell of buds and balm,
  When the cows come home.

With tinkle, tankle, tinkle,
  Through fern and periwinkle,
  The cows are coming home:
A loitering in the checkered stream
Where the sun rays glance and gleam,
Clarine, Peach-bloom, and Phebe Phillis
Stand knee-deep in creamy lilies,
  Each wrapt in a drowsy dream;
To-link, to-lank, to-linkle-linkle,
O'er banks with buttercups a-twinkle,
  The cows come slowly home:
And up through mem'ry's deep ravine
Comes song of brooks and old-time sheen
From crescent of the Silver Queen
  When the cows come home.

With klingle, klangle, klingle,
  With loo-oo and moo-oo and jingle
  The cows are coming home;
And over from the purpling hill,
Sound plaintive cries of whip-poor-will,
And dewdrops lie on tangled vines,
Through the poplar Venus shines,
  And o'er the silent mill;
Ko-ling, ko-lang, ko-lingle-lingle,
With ting-a-ling and jingle,
  The cows come slowly home;
Let down the bars, let in the train
Of long-gone songs, and flowers and rain,
For dear old times come back again
  When the cows come home.

H. S. C.

JEEMS KAYE AT A SCHOOL TRIP.

As long as I hae a breath in my body, Bailie, I'll never let oor guid auld Scotch customs die oot. They may talk aboot their Christmasses and their Good Fridays, their Shrove Tuesdays and their Pancake Wen'sdays, but it 'ill no be Jeems Kaye that 'ill conform tae ony o' them.

Last Saturday I got oor Sunday skule tae go for kruds-an-'cream. Some o' the ither elders said it wisna genteel noo-a-days tae tak' kruds-an'-cream. Tae this hooever, I replies—"Efter I'm awa' ye can dae as ye like, but as lang as I m here I'll be a thorn in yer flesh wi' yer spurious gentility."

Weel, at three o'clock we assembled in front o' the coal ree. We had got the len o' haaf-a-dizzen carts frae different folk, and the bairns were a' packed in them. The minister and me, and the rest o' the elders, were in the first cart, sitting in the strae wi' oor backs up against the side, and oor heids looking ower jist like a lot o' turtle doves in a nest. We were vera comfortable, the only thing that bothered us bein' Mr. Pinkerton's wudden leg. As it couldna bend tae suit altered circumstances, it wis aye scroogin' awa' at the sma' o' some o' oor backs, till we made him unscrew it a'thegither and haund it up tae the carter, wha, after examining the virl for awhile, began tae thrash the horse wi't, till I interposed and took it frae him. In the cart behin' us wis a banner inscribed.

"Lemonade, man's greatest friend."

When the minister looked ower at this he winked tae me, and I winked in return and pointed tae my inside coat pocket; an' if ye had jist seen the smile o' contentment that cam' ower the faces as the ithers saw that I had had the foresicht tae come provided. "Aye, gentleman," says I, "there's an awfu' lot o' dooble-dealing noo-a-days; everybody, frae the magistrate doon tae the street orator, wants tae mak' everybody teetotal but themsels. After they mix their stiff glass o' toddy at the fireside they tak' a sup o't and as it warms their hert they turn up their eyes an' murmur, 'We must shut the public hooses; the puir working folk hae nae business tae indulge in luxuries like this; this is only for the like o' us comfortable folk.'"

The rest o' the carts had banners sich as—

"Divided we stand, united we fall."
"A fair day's work for a fair day's wage,"

and sae on. We tell't stories and gied guesses, and played at "nievie, nievie-nick-nack," and the time passed won'erfully. But the longest lane has a turning, and at last we turned doon the road leading tae the farm, and as we got oot and shook the strae aff oosels I says—"Noo, gentlemen, if it's a' the same tae you, we'll hae nae lang speeches aboot oxygen, or hydrogen, or electricity, but jist let the weans awa' tae play themsels at "kee! hoy" or "hi spy," or whatever they like, and we'll walk roon wi' the farmer and study natural history, and examine the champion mangold-wurzel, and a' the new patent fanners, and sich like."

Efter a while we got the weans intae the stack yard tae hae their kruds, and they a' sat roon, and every ane got a bowl, and servant lassies wi' shortgoons and smiling faces helped them, and a' wis festivity.

The minister, and me, and Mr. Pinkerton got up on chairs on the tap o' a hen hoose tae keep order, and the weans sent up a deputation tae us tae say "they wanted Mr. Kaye tae mak' a speech, as it wisna often he spoke;" so as I had finished my kruds, I got up, and steadying mysel' in amang the branches o' a peer tree, I began—

"Noo, bairns, my address 'll be brief but tae the point. Tae be able tae say ye're a Scotchman is the happiest thing on earth. Of course we've tae pay for oor advantages, we've tae learn the Shorter Catechism and the Paraphrases, and as we grow up drink toddy. Some folk noo-a-days try tae throw discredit on the Scotch; they say that nearly a' the sodgers in the 42nd are Irishmen—aye, nae wunner ye laugh— but that's jist jealousy. If we werena sich a great nation they widna try tae rin us doon sae much. Thae English are vera ignorant, particularly on Bible subjects. I'm sure there's no a wean here but can repeat the 23rd Psalm, metre version —I never kent a Scotch bairn yet that couldna say't aff by heart, and hope I never will. Noo, oor minister wis telling me that he wis examining a skule up in England, and he asked a laddie tae tell the parable o' the good Samaritan, and so up the bairn gets and says, 'A certain man was going down from Jerusalem to Jericho, and he fell among thorns, and the thorns sprang up and choked him and he said to the host, here's tuppence, put him on his own ass, and he passed by on the ither side.' Anither was asked tae tell the story o' Abraham, and he said 'Abraham had two wives, Hagar and Ishmael—he kept one at home to wash the dishes, and he sent the other into the wilderness, where she became a pillar of salt by day, and a pillar of fire by night.' Noo, wisna that awfu' ignorance?"

Bit jist at this Mr. Pinkerton grippit me by the arm, and says, wi' a groan, "Oh, Mr. Kaye, my leg's through the jeists."

"Michty me," says I, "is that leg o' yours kicking up a rumpus again? It's nae suner oot o' wan habble than it's intae anither. When folk invite ye oot here can ye no hae mair respect for their property than begin and destroy't? That's the way ye spile folk for asking us back again. Here, some o' you bigger anes, come ower and shove up. So I held on tae the peer tree wi' one haun and pulled him wi' the ither, and the minister, grippin' a rhone drew awa' by his ither haun. Bit this wis only the beginnin' o' the collieshangie. Some o' the boys gettin' intae the hen hoose tae help, frichtit the life oot o' a wheen auld hens and chickens and ganders, and when they ran cackling thro' the crood the weans began tae throw their bonnets at them. Then the collies thocht they were tae keep the hens oot the corn, and they set tae chasing them; and the farmer's wife cam' oot wi' the spurtle and she efter the dogs. By-an'-by twa-three young calves joined in, wi' their tails in the air, and tummled ower some o' the younger weans, wha began tae greet; and then they upset some bee skeps, and that didna improve matters; and sich an uproar, if ye had jist seen it, Bailie! Weans, dogs, calves, hens, and chickens, a' fleeing roon the stack yard, oot at one gate and in at the ither, while the bees were tickling them a' up indiscriminately. My word, bit the bees had the best o't.

"Gentlemen," at last I cries, "put on your hats! This is the *coup detat*, as the Frenchmen say. Ostler, yoke the horses, the harmony is over; the suner we're hame the better. I ken't something wid happen."

We saw the farmer's wife hirpling awa' intae the hoose between twa teachers, and the farmer cam' ower tae us wi' his face like a nor'west mune; and, says he, shaking his nieve in oor faces, "If ever you or your Sunday skule come oot here again, I'll let louse the bull on ye."

As nane o' the rest could speak, I lays my han' on my hert and says, "Apologies are superfluous. I'll say naething, but the first time your cart's passing my door, I'll be vera glad to put in twa hunnerwecht o' the vera best, as my contribution tae the damage dune; and I think Mr. Pinkerton couldna offer ye less than a hale smoked ham or a Dunlop cheese, for it wis him that began the hale affair."

Mr. Pinkerton, hooever, didna hear me; so we a' got into the carts again, and wended oor way hame in the dark. Some o' the weans had sprained thooms, and some had lost their bonnets; twa or three had their noses bled; and as the minister said, "great wis the lamentation."

In oor cart we somehoo were mair crooded than we were going oot, and every noo and again in the dark, ye wid hear, "Wha's aught that knee?" "Keep that elbow oot o' my ribs;"

"Sit ower a wee, man;" but we got hame at last.

Bailie, I've hardly had time tae gather mysel' thegither yet, so I must say "adieu."—

Yours, Jeems Kaye in "The Bailie.

Scientific and Useful.

CREAM FRITTERS.—One and a-half pints of flour, four beaten eggs, one pint of milk, one teaspoonful of salt, one pint of cream. Stir together and fry in small cakes.

POLISHED steel will not shine in the dark; no more can reason, however refined and cultivated, shine efficaciously but as it reflects the light of divine truth shed from heaven.

RICE PUDDING WITHOUT EGGS.—Take two quarts of milk and one cup of rice, one half cup sugar and teaspoonful of salt. Bake in a moderate oven three hours. Should be stirred gently two or three times after it has begun to bake. Raisins may be added if one likes. Cream and sugar is a nice dressing for it if anything is desired.

JOHNNY CAKES.—One quart of corn meal, two teaspoonfuls of salt and milk enough to make a stiff batter. Shape the cakes in the hand, making them an inch thick; bake on a griddle; they should be quite brown when done. Split them open and lay a lump of butter inside. Serve hot.

GOOSEBERRY PIE.—Stew the berries in as little water as it is possible to use; when the berries begin to be tender, mash them with a spoon; then you will preserve the richness of the juice, and will not have to throw any of it away. Sweeten with light brown sugar, and bake with two crusts.

AN EX-ALDERMAN TRIED IT. Ex-Alderman Taylor, of Toronto, tried Hagyard's Yellow Oil for Rheumatism. It cured him after all other remedies had failed.

PEACH PIE—Line a deep dish with soda biscuit dough or pie-crust rolled one-fourth of an inch thick, fill with peaches pared, sprinkle with sugar and a little flour, and if not too juicy add about two tablespoonfuls of water. Put on the upper crust, secure the edges and bake. Eat with cream.

BAKED BERRY ROLLS.—Make a biscuit dough, roll it thin and cut it in squares of five or six inches. Spread over with berries or other fruit; double the crust over and fasten the edges together. Put the rolls into a dripping-pan, close together, until full, then put into the pan a little water, sugar and butter. Bake and serve with any desired pudding sauce.

A CURE FOR CHOLERA MORBUS.—A positive cure for this dangerous complaint, and for all acute or chronic forms of Bowel Complaint incidents to Summer and Fall, is found in Dr. Fowler's Extract of Wild Strawberry; to be procured from any druggist.

FROZEN PEACHES.—Take two quarts of rich milk and two teacupfuls of sugar; mix well together, and put into a freezer with ice and salt packed around it. Have ready one quart of peaches mashed and sweetened. When the milk is very cold stir them in and freeze them all together. Strawberries can be used in the same way, but will require more sugar.

HOLIDAY BUNS.—One pound of flour, four ounces of butter, three ounces of lard, half pound currants, quarter pound raisins, two ounces candid lemon peel, quarter pound moist sugar, two eggs, one large tablespoonful of baking powder, half-pint of new milk. Rub the butter and lard thoroughly into the flour, add all the dry ingredients, beat the eggs well and mix them into the ingredients; then add the milk, and mix up thoroughly well. Put a teaspoonful of the mixture into each patty pan well buttered, and bake in a very brisk oven until nicely browned over.

HOME-MADE CREAM CANDY.—If made according to the following directions, it is said that you will have cream candy equal to that of the confectioners: To any quantity of white or clean, light sugar, add an equal quantity of cold water. Dissolve in a little cold water wheat starch, in the proportion of two teaspoonfuls to one cup of sugar, and set it aside ready for use. Set the sugar and water on the fire to boil; do not stir much after the sugar dissolves. Let it boil until a little of it dropped in cold water will harden readily. Then add the starch, stirring very rapidly, and boil a minute or two; again try; when done, pour into a buttered dish or pan, and set aside till cool enough to work with the hands. Add to it while warming such flavouring extract as may be preferred. Work till very light. Draw out into flat lengths and cut into sticks.

A SAD NEGLECT. Neglecting a constipated condition of the bowels is sure to bring ill health and great suffering. Burdock Blood Bitters regulate the bowels in a natural manner, purifying the blood and promote a healthy action of the stomach, liver, kidneys and Bowels.

SAILING.

GODFREY MARKS.

Con spirito.

f

PIANO.

1. Y'heave ho!..... my lads..... the wind blows free..... A plea - sant gale..... is
2. The sai - lor's life..... is bold and free..... His home..... is on..... the
3. The tide is flow - ing with the gale..... Y'heave ho!..... my lads..... set

mf

on our lee..... And soon..... a - cross....., the o - cean clear..... Our gal - lant
rol - ling sea..... And nev - er heart..... more true or brave..... Than he who
ev' - ry sail..... The har - bour bar..... we soon shall clear..... Fare - well once

cres.

barque shall brave - ly steer..... But ere we part..... from Eng-land's shores to
launch - es on..... the wave..... A - far he speeds..... in dis - tant climes to
more to home so dear..... For when the temp - est ra - ges loud and

p legato.

2

night..... A song we'll sing..... for home and beau - ty bright.....
roam..... With jo - - cund song..... he rides the spark - ling foam.....
long..... That home shall be..... our guid - ing star a - mong.....

f

Then here's to the sail - or and here's to the hearts so true Who will think of him up - on the wa - ters

f

colla voce

ad lib.

blue..... Sail - ing, sail - ing o - ver the bounding main..... For ma-ny a storm - y

p

wind shall blow ere Jack comes home a - gain..... Sail - ing, sail - ing o - ver the bounding

f

ad lib. 1. 2. 𝄋 3.

main..... For ma-ny a stormy wind shall blow ere Jack comes home a - gain.

𝄋

colla voce.

THE BUSIEST PLACE IN CHICAGO.

Any person who visits the Advertising Agency of Lord & Thomas, McCormick Block, will not doubt that they are transacting an immense business with the newspapers of the country. A thorough knowledge of their business, coupled with energy and a liberal use of their own medicine, has placed them in the front rank of advertising agencies in the United States.

We will not state the exact amount, but we will say that during the past few weeks they have closed contracts which will aggregate hundreds of thousands of dollars, and this business has been secured in competition with the Eastern agencies, thus demonstrating their claim of possessing unequalled "facilities."

Their business offices are veritable hives of industry, every member of their efficient corps of employes being furnished with work enough to develop their working energies. We think this firm might well adopt as their motto "Courtesy and Energy." The *Herald* congratulates them on their merited success.—Chicago *Herald*, May 10.

IMPORTANT TO TOURISTS.

Commencing May 15th and continuing until October 1st, round trip tourist tickets, good going fifteen days from date of sale and good returning until October 31st. Can be purchased at very low rates, to Denver, Pueblo, Colorado Springs, and other Colorado Tourist Points, via the BURLINGTON ROUTE (C., B. & Q. R. R.) This famous line is the only one extending from Chicago, Peoria or St. Louis, direct to Denver, and the only one running through trains without change every day in the year between Chicago and Denver. In addition to above trains which run via Pacific Junction it also runs over its own lines, through daily trains between Chicago, Peoria, Kansas City and Atchison, and through daily trains between Kansas City, Atchison and Denver, thereby enabling it to offer the tourist the option of purchasing tickets by a greater variety of routes than any other line. Remember these facts, and when ready to start call upon any railroad ticket agent in the United States or Canada for tickets, rates and detailed information, or address PERCIVAL LOWELL, General Passenger Agent, Chicago.

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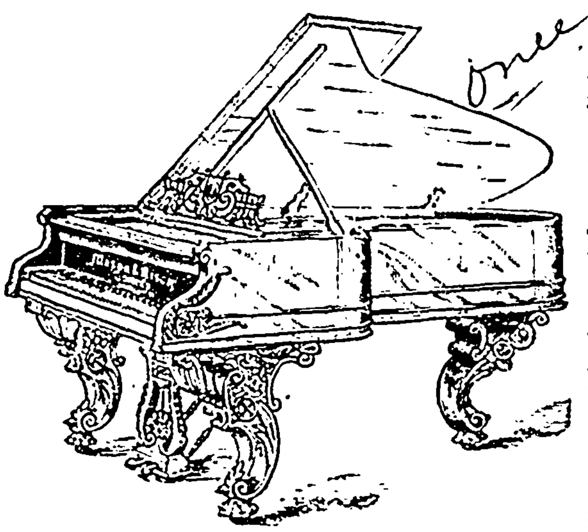
AND
A DETERMINATION TO WIN

A reputation of the highest character for a Canadian Pianoforte.

MASON & RISCH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DR. EUGENE HAANEL

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32 KING ST. W., TORONTO

The demand for these instruments is steadily increasing as their merits are becoming more extensively known.

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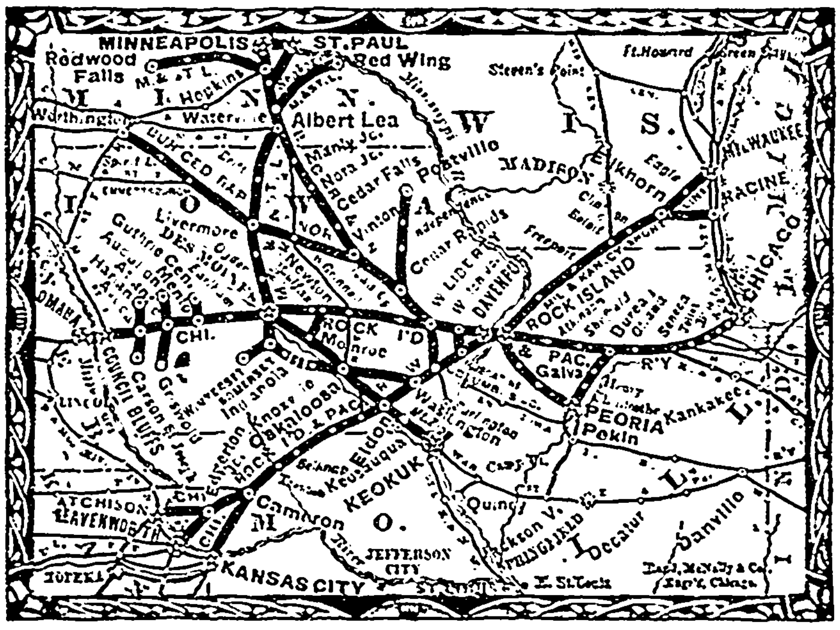
A MAN

WHO IS UNACQUAINTED WITH THE GEOGRAPHY OF THIS COUNTRY, WILL SEE BY EXAMINING THIS MAP, THAT THE



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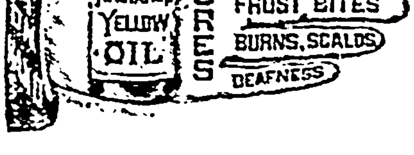

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$80 DOWN $66.67 IN SIX ANNUAL PAYMENTS 7 Pr. CENT INTEREST WILL BUY 160 ACRES.

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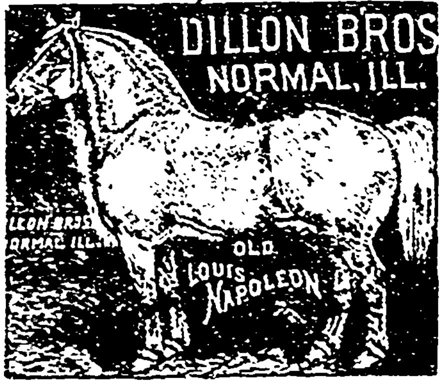

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